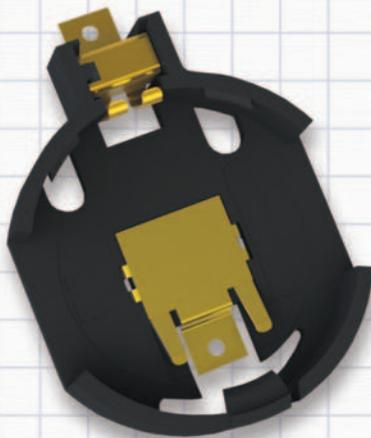
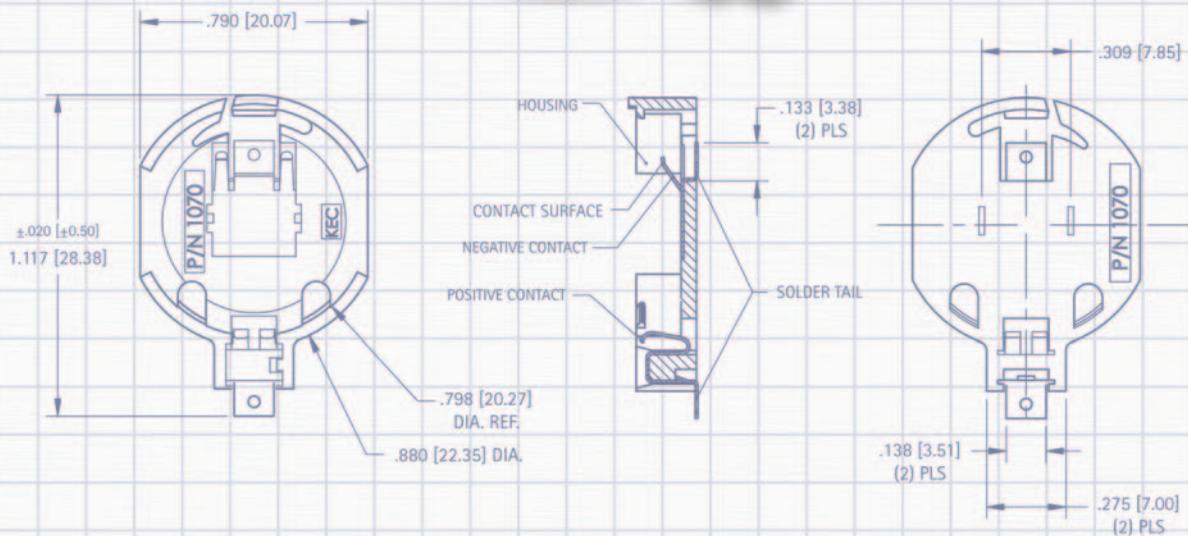
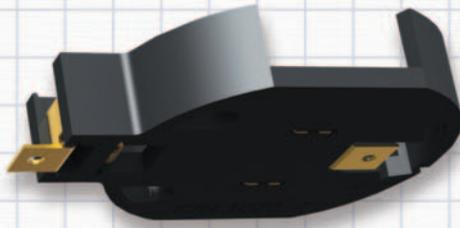


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## BATTERY CLIPS, CONTACTS & HOLDERS

Our battery clips, contacts and holders are designed with leading edge technology in mind, to accommodate all major manufacturers' batteries. Available in a wide range of materials and mounting styles including surface mount, thru hole and off board, some of the applications include:

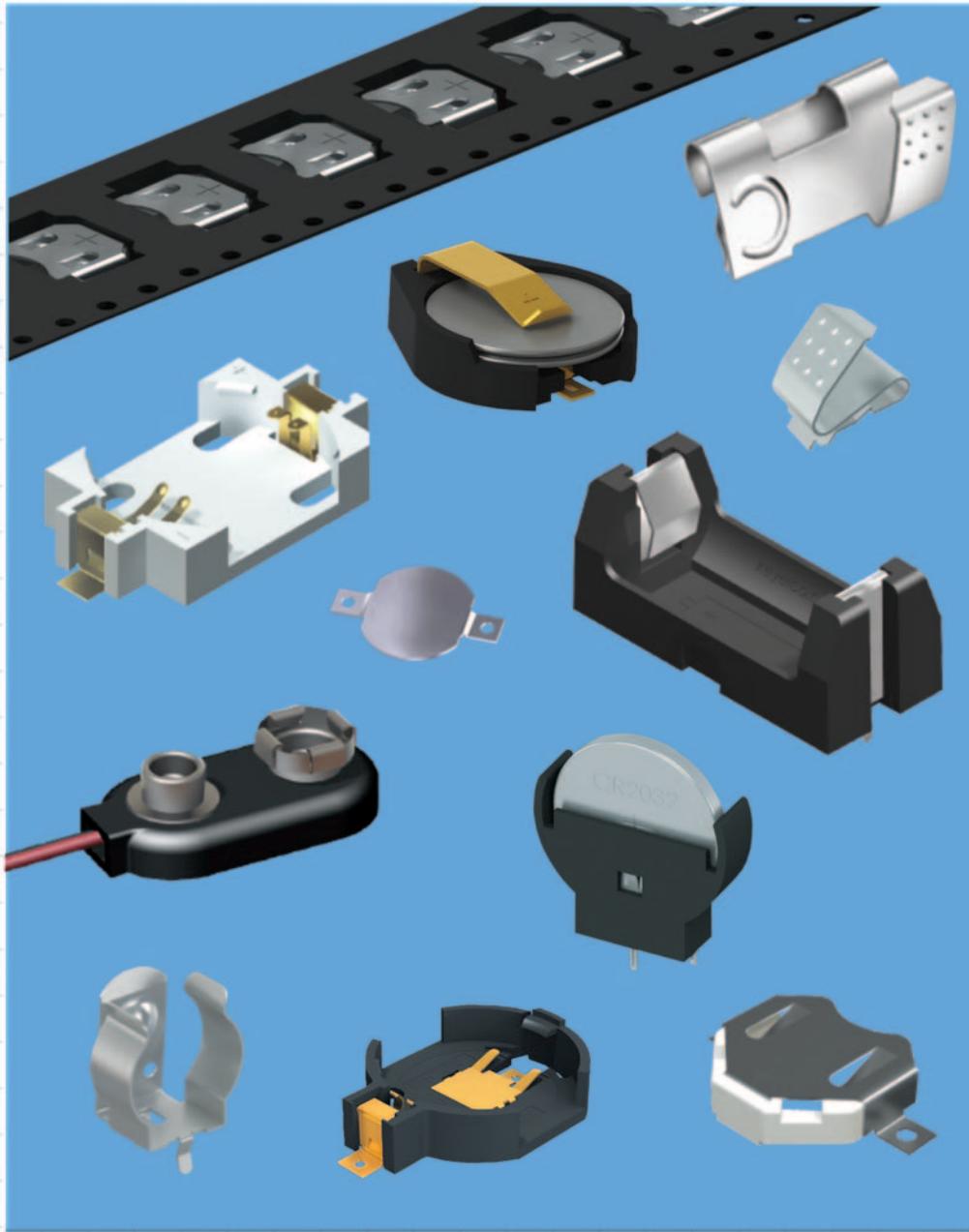
- Telecommunications and Video power back-up
- Laptop and Mobile computing applications
- Communication system's power requirements
- Microcomputer and memory hold
- Preprogrammed electronic and video games
- Emergency power systems
- Industrial and commercial security and alarm systems
- Miniature battery power devices
- Computer memory, power transfer and back-up systems
- Personal medical monitoring devices

Our quality system is ISO 9001:2015 certified. Our products are in compliance with the RoHS and REACH directives. We provide 3D modeling, CAD and other application-engineering support for modifications, special designs or assembly requirements to assist you in choosing the right Keystone product for your application.

DATE

DESCRIPTION

REV.



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# THRU-HOLE (THM) & SURFACE MOUNT (SMT) COIN CELL HOLDERS

12mm to 16mm COIN CELL HOLDERS

## DESIGN ADVANTAGES...

- Reliable spring tension assures low contact resistance
- Retains battery securely to withstand shock and vibration
- Base material UL Rated 94V-0. Impervious to most industrial solvents
- Operating temperature range: -60°F to +293°F (-50°C to +145°C)

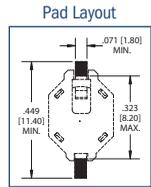
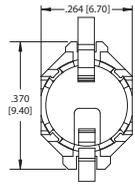
## IDEALLY SUITED FOR...

- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up
- Microprocessors and Microcomputer memory hold (desktop and laptop applications)
- Industrial and commercial security and alarm systems
- PC 104 application

### 6.8mm



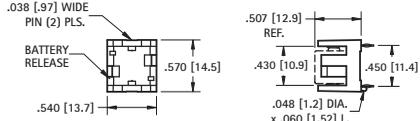
#### AVAILABLE ON TAPE AND REEL



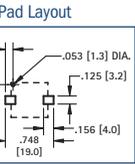
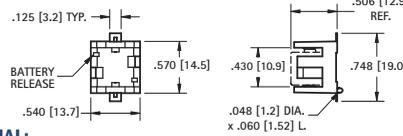
**MATERIAL:**  
**Base:** LCP UL94V-0  
**Contacts:** Phosphor Bronze, Gold Plate (Flash)

CAT. NO. TAPE & REEL	BATTERY REFERENCE
1104TR	ML621

### 1/3N



#### AVAILABLE ON TAPE AND REEL



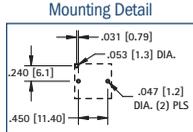
**MATERIAL:**  
**Base:** High Temperature Nylon 46, UL Rated 94V-0  
**Contacts:** .012 (.30) Phosphor Bronze, Gold Plate (Flash)

CAT. NO. BULK	ON TAPE & REEL	CELLS	BATTERY REFERENCE
498	498TR	1	DL1/3N, K58L, CR1/3N
		2	SR44, 357, MS76, G-13, 303, V313, PX76A

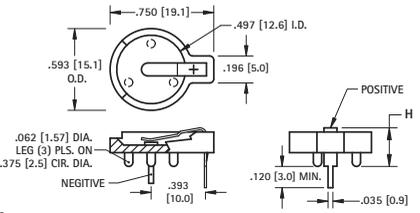
**Tape & Reel Spec's:** 44mm wide; 24mm pitch; 13 inch reel (200 pieces per reel)

**MATERIAL:**  
**Base:** High Temperature Nylon 46, UL Rated 94V-0  
**Contacts:** .012 (.30) Phosphor Bronze, Gold Plate (Flash)

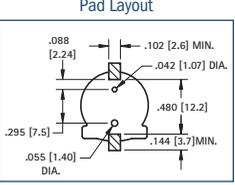
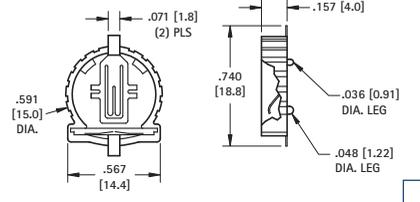
CAT. NO.	CELLS	BATTERY REFERENCE
503	1	DL1/3N, K58L, CR1/3N
	2	SR44, 357, MS76, G-13, 303, V313, PX76A



### 12mm



#### AVAILABLE ON TAPE AND REEL



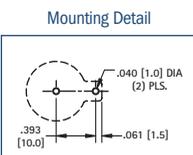
**MATERIAL:**  
**Base:** Glass Filled PPS. UL Rated 94V-0  
**Contacts:** .008 (.20) Phosphor Bronze, Gold Plate (Flash)

CAT. NO. BULK	ON TAPE & REEL	CELLS	BATTERY REFERENCE
1056	1056TR	1	CR1220, BR1220, CL1220

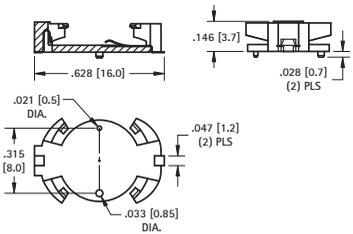
**Tape & Reel Spec's:** 32mm wide; 20mm pitch; 13 inch reel (500 per reel)

**MATERIAL:**  
**Base:** PBT, UL Rated 94V-0  
**Positive Contact:** .015 (.38) Spring Steel, Tin-Nickel Plate  
**Negative Contact:** .035 (.89) Dia. Steel, Tin-Nickel Plate

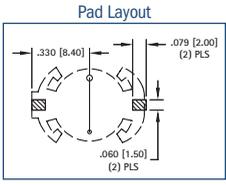
CAT. NO.	HEIGHT (H)	CELLS	BATTERY REFERENCE
500	.280 (7.1)	1	BR1212, CR1216, CL1220, CR1225
501	.380 (9.7)	2	CR1216, CL1220



### 12mm AUTO-IN



#### AVAILABLE ON TAPE AND REEL

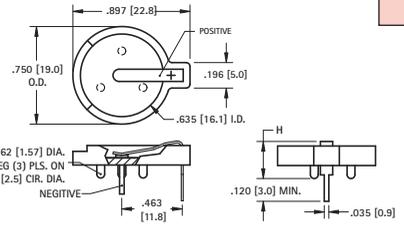


CAT. NO. BULK	ON TAPE & REEL	CELLS	BATTERY REFERENCE
1072	1072TR	1	CR1220, BR1220, CR1225

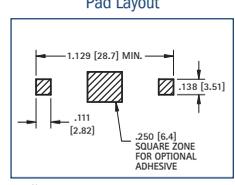
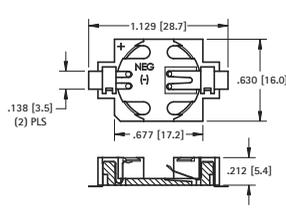
**Tape & Reel Spec's:** 44mm wide; 24mm pitch; 13 inch reel (1000 per reel)

**MATERIAL:**  
**Base:** PA9T, Black  
**Contacts:** .004 (.10) Phosphor Bronze  
**Contact Area:** Gold Plate (Flash)  
**Solder Tails:** Matte Tin Plate

### 16mm



#### AVAILABLE ON TAPE AND REEL



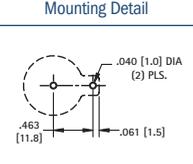
**MATERIAL:**  
**Base:** Glass Filled LCP, UL Rated 94V-0  
**Contacts:** .006 (.15) Phosphor Bronze, Gold Plate (Flash)

CAT. NO. BULK	ON TAPE & REEL	CELLS	BATTERY REFERENCE
504	504TR	1	BR1625, CR1632

**Tape & Reel Spec's:** 44mm wide; 24mm pitch; 13 inch reel (450 per reel)

**MATERIAL:**  
**Base:** PBT, UL Rated 94V-0  
**Positive Contact:** .015 (.38) Spring Steel, Tin-Nickel Plate  
**Negative Contact:** .035 (.89) Dia. Steel, Tin-Nickel Plate

CAT. NO.	HEIGHT (H)	CELLS	BATTERY REFERENCE
502	.285 (7.3)	1	CR1612, CL1616, CL1620
		2	CR1612
502-3	.330 (8.4)	1	BR1625, CR1632
		2	BR1616, CR1620, CL1620



# THRU-HOLE MOUNT (THM) VERTICAL VIBRA-FIT CELL HOLDERS

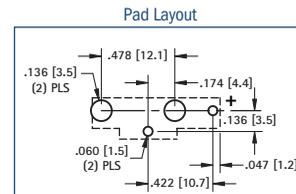
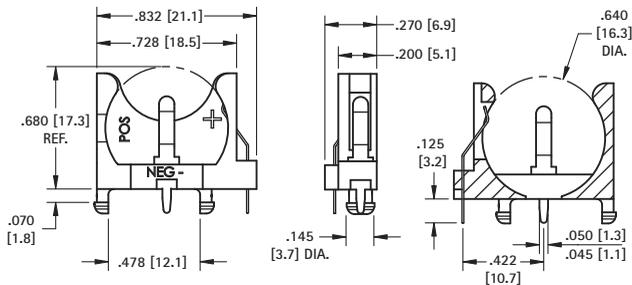


- Accepts all manufactures of 20mm coin cell batteries
- Retains cells securely, withstands shock and vibration
- Polarity clearly marked
- Mounts securely for wave soldering
- Operating Temperature Range: -60°F to 293°F (-50°C to 145°C)

## 16mm VERTICAL



- Stabilizing pins assure vertical positioning & reduce solder joint stress.
- Polarized holder protects circuit from improper use.



### MATERIAL:

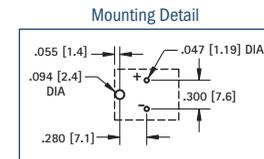
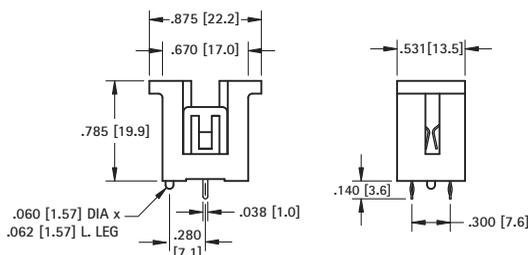
Base: PBT, UL Rated 94V-0  
Contacts: .010 (.25) Steel, Nickel Plate

CAT. NO.	BATTERY REFERENCE
1069	CR2016, DL2020, CL2025, CR2032

## 20mm COMPACT



- Molded notch prevents improper insertion of 2032 size cells.



### MATERIAL:

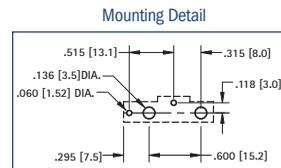
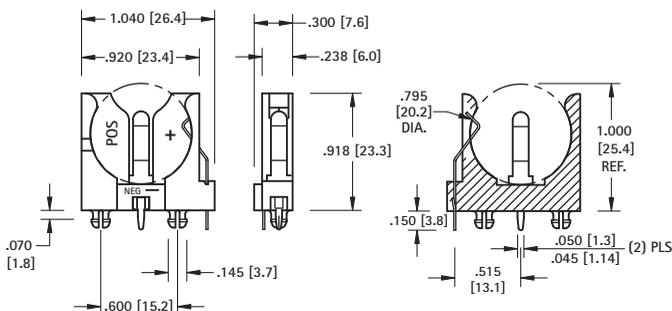
Contacts: .012 (.30) Spring Steel, Tin-Nickel Plate  
Base: PBT, UL Rated 94V-0

CAT. NO.	BATTERY REFERENCE
1067	CR2016, DL2020, CL2025, CR2032

## 20mm SLIM-LINE



- Polarized holder, protects circuit from improper insertion of cells.



### MATERIAL:

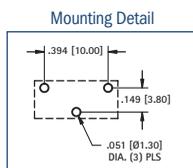
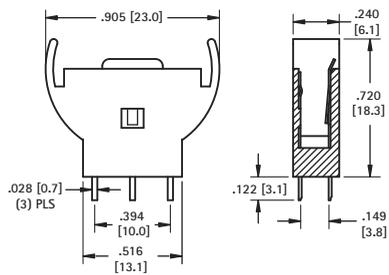
Contacts: .016 (.41) Spring Steel, Tin-Nickel Plate  
Base: PBT, UL Rated 94V-0

CAT. NO.	BATTERY REFERENCE
1065	BR2012, CR2016, DL2020, CL2025, CR2032

## 20mm SLIM-LINE



- Top loading.



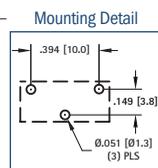
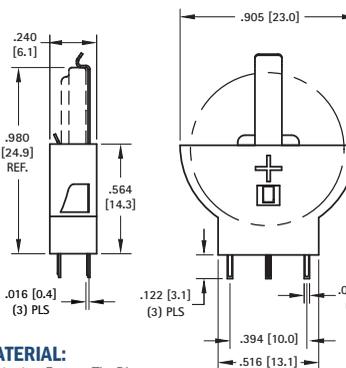
### MATERIAL:

Contacts: .010 (.25) Brass, Tin Plate  
Base: Nylon 6/6, Black

CAT. NO.	BATTERY REFERENCE
1074*	CR2032

\*Not intended for shock and vibration

- Polarized
- Molded notch prevents improper insertion of 2032 size cells.



### MATERIAL:

Contacts: Brass, Tin Plate  
Base: PA UL Rated 94 V-0

CAT. NO.	BATTERY REFERENCE
1174	CR2032



# THRU-HOLE (THM) & SURFACE MOUNT (SMT) VIBRA-FIT HOLDERS

- Extremely rugged, holds battery securely under shock and vibration applications
- Polarized holder protects circuit from improper battery insertion
- Polarity clearly marked
- Safe for all soldering and reflow operations
- Designed for manual insertion of battery
- Glass Filled LCP base material UL Rated 94V-0 impervious to most industrial solvents
- Operating Temperature Range: -60°F to 293°F (-50°C to 145°C)

## 2025 / 2032 THRU HOLE MOUNT HOLDER



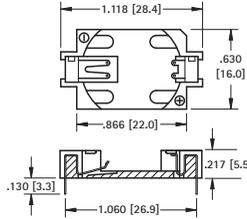
Thru Hole Mount

### MATERIAL:

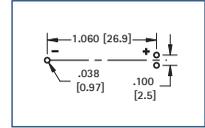
**Contacts:** .006 (.15) Phosphor Bronze, Tin Plated  
**Base:** Glass Filled LCP, UL Rated 94V-0

CAT. NO.	BATTERY REFERENCE
1059	CR2025, DL2032

- Tin plated contacts compatible with wave solder and manual soldering process



Mounting Detail



## 2025 / 2032 SURFACE MOUNT HOLDER



Surface Mount

### MATERIAL:

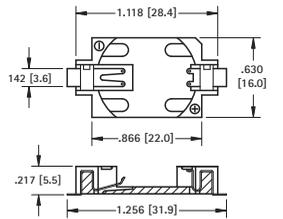
**Contacts:** .006 (.15) Phosphor Bronze, Gold Plate (Flash)  
**Base:** Glass Filled LCP, UL Rated 94V-0

CAT. NO. BULK	ON TAPE & REEL	BATTERY REFERENCE
1060	1060TR	CR2025, DL2032

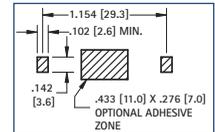
**Tape & Reel Spec's:** 44mm wide; 20mm pitch; 13 inch reel (500 pieces per reel)

### AVAILABLE ON TAPE AND REEL

- Compatible with vacuum and mechanical pick & place assembly systems
- All conductive polystyrene carrier tape meets ANSI/EIA-481 standards
- Viewable solder tails allows for easy solder joint inspection



Pad Layout



## SURFACE MOUNT (SMT) AUTO-IN HOLDERS

- Designed for applications where the battery will be automatically inserted via a vacuum or mechanical pick-and-place device
- All conductive polystyrene carrier tape meets ANSI/EIA-481 standards
- Viewable solder tails allows for easy solder joint inspection
- Gold plated contacts assure low contact resistance
- Ideal for retaining cells securely under shock and vibration
- Compatible with most vacuum and mechanical pick-and-place assembly systems

## 2032 LOW PROFILE HOLDER



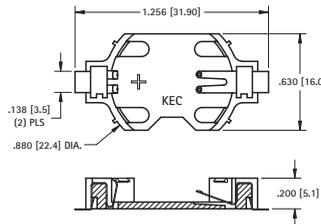
Surface Mount

### MATERIAL:

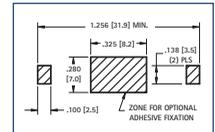
**Contacts:** .006 (.15) Phosphor Bronze, Gold Plate (Flash)  
**Base:** Glass Filled LCP, UL Rated 94V-0

CAT. NO. BULK	ON TAPE & REEL	BATTERY REFERENCE
1058	1058TR	CR2032, CR2025

### AVAILABLE ON TAPE AND REEL



Pad Layout



## 2032 ULTRA LOW PROFILE HOLDER



Surface Mount

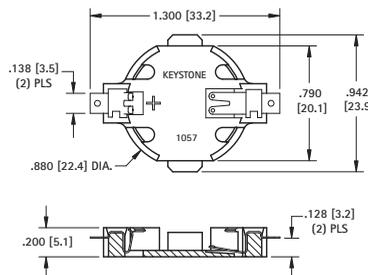
### MATERIAL:

**Contacts:** .009 (.23) Phosphor Bronze, Gold Plate (Flash)  
**Base:** Glass filled LCP, UL Rated 94V-0

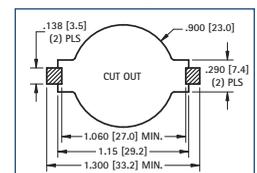
CAT. NO. BULK	ON TAPE & REEL	BATTERY REFERENCE
1057	1057TR	CR2032, CR2025

**Tape & Reel Spec's:** 56mm wide; 32mm pitch; 13 inch reel (400 pieces per reel)

- Ideal when circuit board height is a critical design parameter
- Rises only 2mm above the PCB surface by mounting the holder thru a hole in the PCB, allowing the holder to sit through the PCB
- Built-in stabilization tabs add mounting security



Pad Layout



20mm COIN CELL HOLDERS

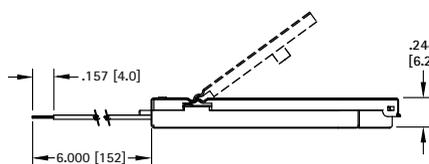
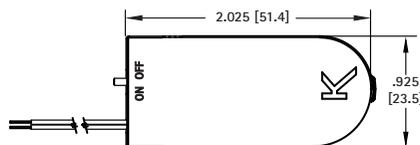
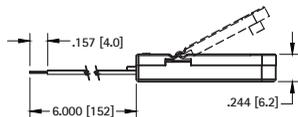
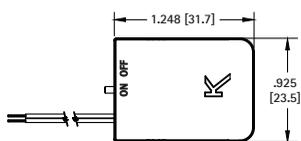
# THRU-HOLE (THM) & SURFACE MOUNT (SMT) COIN CELL HOLDERS



## 20mm BATTERY HOLDER



1086



1092

- Locking cover
- On/off switch
- Screws provided for additional security
- Polarized

### MATERIAL:

**Contacts:** .006 ( .15 ) Phosphor Bronze, Nickel Plate  
**Base:** Polypropylene  
**Wire:** 26 AWG, UL/CSA 1007

CAT. NO.	NO. OF CELLS	BATTERY REFERENCE
1086	1	CR2032
1092	2	

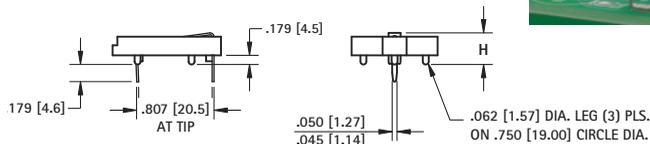
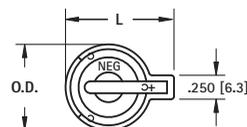
## 20mm THRU-HOLE MOUNT CON CELL HOLDER



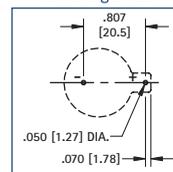
- Advanced air-flow design enhances air circulation around battery
- Reliable spring tension assures low contact resistance
- Unique notched slots assure quick and easy battery insertion and replacement
- Retains battery securely to withstand shock and vibration

### MATERIAL:

**Contacts:** .020 (.50) Spring Steel, Tin-Nickel Plate  
**Base:** PBT, UL Rated 94V-0



### Mounting Detail



CAT. NO.	H	L	O.D.	NO. OF CELLS	BATTERY REFERENCE
103	.335 (8.5)	1.130 (28.7)	.896 (22.8)	(1) cell (any 20mm) (2) 2012, (2) 2016	BR2012, CR2012, CR2016, CL2016, DL2020, CL2025, BR2025, CR2032, CL2032
106	.335 (8.5)	1.219 (31.0)	1.093 (27.8)	(1) cell (any 20mm) (2) 2012, (2) 2016	BR2012, CR2012, CR2016, CL2016, DL2020, CL2025, BR2025, CR2032, CL2032
1026	.452 (11.5)	1.219 (31.0)	1.093 (27.8)	(2) 2020, (2) 2025, (2) 2032	DL2020, CR2020, CL2025, BR2025, CR2032, CL2032

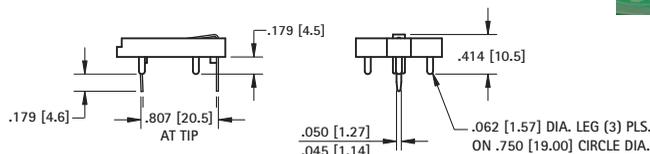
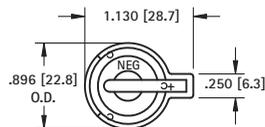
## 20mm RAISED MOUNT COIN CELL HOLDER



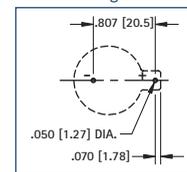
- Designed to maximize PC Board Capacity
- Unique raised mounting design allows components to be placed underneath the holder
- Ideal when board space is more important than board height; such as PC 104 applicators

### MATERIAL:

**Contacts:** .020 (.50) Spring Steel, Tin-Nickel Plate  
**Base:** PBT, UL Rated 94V-0



### Mounting Detail



CAT. NO.	BATTERY REFERENCE	NO. OF CELLS
101	BR2012, CR2016, CL2020, CR2025, CR2032	(1) cell (any 20mm) (2) 2012, (2) 2016

## 20mm SURFACE MOUNT COIN CELL HOLDER

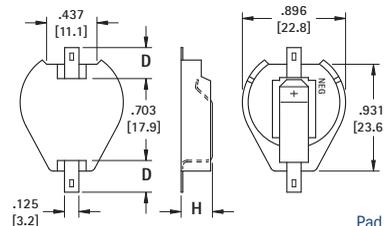
### AVAILABLE ON TAPE AND REEL



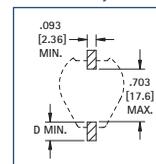
### MATERIAL:

**Contacts:** .015 (.38) Steel  
**Base:** High Temperature, Nylon 46, UL Rated 94V-0

- Polarity clearly marked (+)
- Compatible with vacuum and mechanical pick & place assembly systems
- SMT solder tail with "Flow-Hole" design for increased joint strength
- Viewable solder tails assures reliable joint inspection
- Safe for all soldering & reflow operations



### Pad Layout



Tin-Nickel Plate	Gold Plate (Flash)		D PAD SIZE	H HIEGHT	NO. OF CELLS	BATTERY REFERENCE	
CAT. NO. ON TAPE BULK & REEL	CAT. NO. ON TAPE BULK & REEL	CAT. NO. ON TAPE BULK & REEL					
1061	1061TR	1081	1081TR	.156 (4.0)	.290 (7.4)	(1) Cell (any 20mm) (2) 2012, (2) 2016	CR2012, CL2016, BR2020, DL2032, CR2032
1063	1063TR	1093	1093TR	.278 (7.1)	.406 (10.3)	(2) 2020, (2) 2025, (2) 2032	
1062	1062TR	1082	1082TR	.156 (4.0)	.406 (10.3)	(3) 2012, (3) 2016, (1) 2050	
1064	1064TR	1094	1094TR	.278 (7.1)			

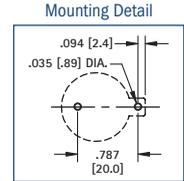
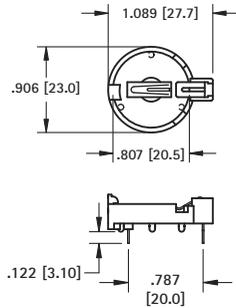
Tape & Reel Spec's: 44mm wide; 32mm pitch; 13 inch reel (200 pieces per reel)



# THRU HOLE (THM) & SURFACE MOUNT (SMT) 20mm EZ-OUT HOLDERS

- Top loading for compact applications
- Finger pressure against lever will release battery
- No tools required
- Holds battery securely under shock and vibration applications
- Nylon base material UL Rated 94V-0, impervious to most industrial solvents
- **Operating Temperature:** -60°F to 293°F (-50°C to 145°C)

## THM EZ-OUT COIN CELL HOLDER



- Designed for manual insertion of battery.
- Mounts securely for wave soldering

**MATERIAL:**  
**Contacts:** .016 (.41) Phosphor Bronze, Tin Plate  
**Base:** Nylon UL Rated 94V-0

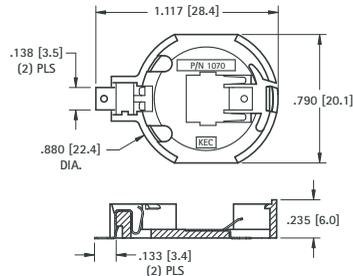
CAT. NO.	BATTERY REFERENCE
1066	BR2025, CR2032

## SMT AUTO-IN/EZ-OUT COIN CELL HOLDER

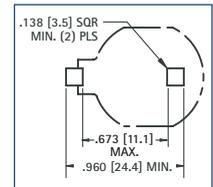
### AVAILABLE ON TAPE AND REEL



- Designed for automatic vertical insertion of battery via a vacuum or mechanical pick-and-place device
- Compatible with vacuum and mechanical pick & place assembly systems
- All conductive polystyrene carrier tape meets ANSI/EIA-481 standards



### Pad Layout



**MATERIAL:**  
**Contacts:** .009 (.23) Phosphor Bronze, Gold Plate (Flash)  
**Base:** High temperature PA9T, UL Rated 94V-0

CAT. NO.	ON TAPE & REEL	BATTERY REFERENCE
1070	1070TR	CR2032

**Tape & Reel Spec's:** 44mm Wide, 24mm Pitch, 13 inch reel (400 pieces per reel)

# THRU HOLE (THM) & SURFACE MOUNT (SMT) 23mm COIN CELL HOLDERS

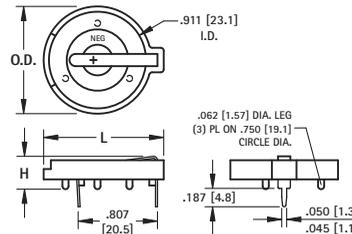


Thru Hole Mount

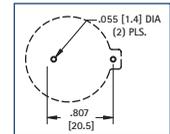
- Advanced air-flow design enhances air circulation around battery
- Unique notched slots assure quick and easy battery insertion and replacement

**MATERIAL:**  
**Contacts:** .020 (.50) Spring Steel, Tin-Nickel Plate  
**Base:** PBT, UL Rated 94V-0  
**Operating Temperature:** -60°F to +293°F (-50°C to +145°C)

CAT. NO.	H	L	O.D.	NO. OF CELLS	BATTERY REFERENCE
104	.335 (8.5)	1.150 (29.2)	1.000 (25.4)	(1) Cell (Up to 2330)	BR2320, CR2320, CL2325, DL2330
107	.335 (8.5)	1.219 (31.0)	1.093 (27.8)	(1) Cell (Up to 2330)	
1027	.452 (11.5)	1.219 (31.0)	1.093 (27.8)	(1) 2354	CL2354, CR2335
				(2) 2320, (2) 2325, (2) 2330	



### Mounting Detail



### AVAILABLE ON TAPE AND REEL

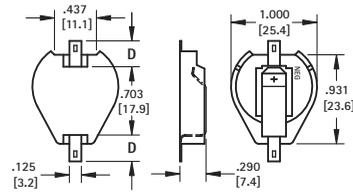


Surface Mount

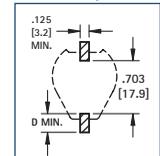
- SMT solder tail with "Flow-Hole" design for increased joint strength
- Viewable solder tails assures reliable joint inspection
- All conductive polystyrene carrier tape meets ANSI/EIA - 481 standard

**MATERIAL:**  
**Contacts:** .015 (.38) Steel  
**Base:** High Temp Nylon 46, UL Rated 94V-0  
**Operating Temperature:** -60°F to +293°F (-50°C to +145°C)

Tin-Nickel Plate		Gold Plate (Flash)		D PAD SIZE	BATTERY REFERENCE
CAT. NO. BULK & REEL	ON TAPE & REEL	CAT. NO. BULK & REEL	ON TAPE & REEL		
1071	1071TR	1091	1091TR	.156 (4.0)	CR2320, CL2325, DL2330, CR2335
1073	1073TR	1083	1083TR	.278 (7.1)	DL2330, CR2335



### Pad Layout



# THRU-HOLE (THM) & SURFACE MOUNT (SMT) COIN CELL HOLDERS



## 24mm



Thru Hole Mount

- Advanced air-flow design enhances air circulation around battery
- Unique notched slots assure quick and easy battery insertion and replacement

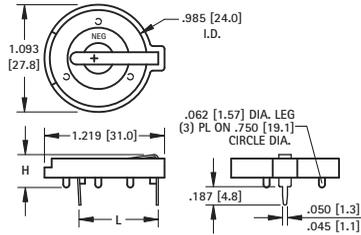
### MATERIAL:

Base: PBT, UL Rated 94V-0

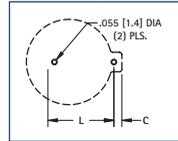
Contacts: .020 (.50) Spring Steel, Tin-Nickel Plate

Operating Temperature: -60°F to +293°F (-50°C to +145°C)

CAT. NO.	C	H	L	NO. OF CELLS	BATTERY REFERENCE
105	.074 (1.9)	.335 (8.5)	.805 (20.5)	(1) 2430	CR2430, CL2430, BR2450, CR2477
1025	.074 (1.9)	.452 (11.5)	.805 (20.5)	(1) 2450 (2) 2430	
1025-7	.074 (1.9)	.503 (12.8)	.805 (20.5)	(1) 2477 (2) 2430	



Mounting Detail

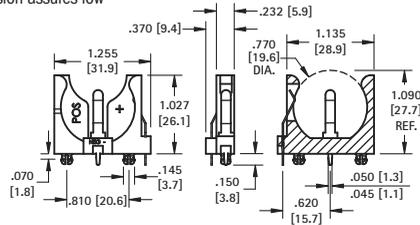


## 24mm VERTICAL

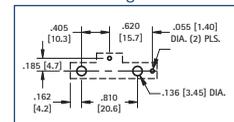


Thru Hole Mount

- Polarized holder
- Mounts securely for wave soldering
- Reliable spring tension assures low contact resistance



Mounting Detail



### MATERIAL:

Base: PBT, UL Rated 94V-0

Contacts: .020 (.50) Spring Steel, Tin-Nickel Plate

Operating Temperature: -60°F to +293°F (-50°C to +145°C)

CAT. NO.	BATTERY REFERENCE
1068	(1) CR2450, (1) CL2450

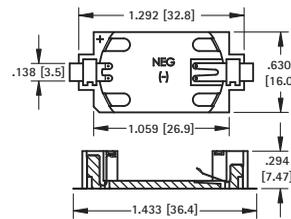
## 24mm TOP Loading

### AVAILABLE ON TAPE AND REEL

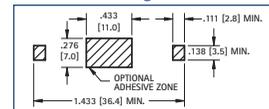


Surface Mount

- Polarized holder
- Low profile for densely packed PCB's
- Compatible with vacuum and mechanical pick & place systems
- Conductive carrier tape meets ANSA/EIA- 481 standard



Mounting Detail



### MATERIAL:

Base: LCP, UL Rated 94V-0

Contacts: .006 (.15) Phosphor Bronze, Gold Plate (Flash)

Operating Temperature: -60°F to +293°F (-50°C to +145°C)

CAT. NO.	ON TAPE & REEL	BATTERY REFERENCE
1052	1052TR	(1) CR2450

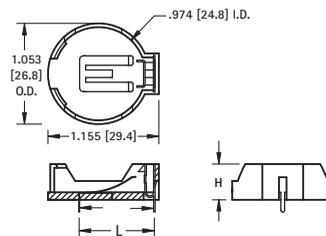
Tape & Reel Spec's: 56mm wide; 20mm pitch; 13 inch reel, (400 pieces per reel)

## 24mm AUTO-IN/EZ-OUT

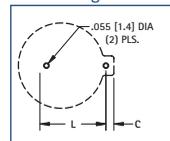


Thru Hole Mount

- Battery "Pop-in" from Top for automated assembly
- No tools required
- Finger pressure battery release



Mounting Detail



### MATERIAL:

Contacts: .008 (.20) Phosphor Bronze, Nickel Plate

Base: PBT, UL Rated 94V-0

Operating Temperature: -60°F to +293°F (-50°C to +145°C)

CAT. NO.	L	H	C	BATTERY REFERENCE
1053	.788 (20.0)	.374 (9.5)	.048 (1.2)	(1) CR2450
1009	.800 (20.3)	.472 (12.0)	.048 (1.2)	(1) CR2477

## 30mm



Thru Hole Mount

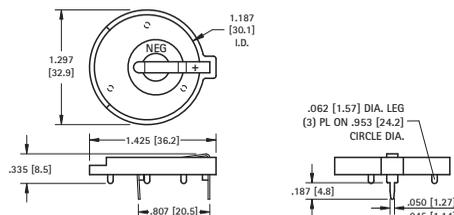
### MATERIAL:

Contacts: .020 (.50) Spring Steel, Tin-Nickel Plate

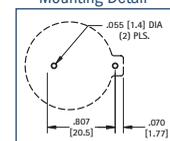
Base: PBT, UL Rated 94V-0

Operating Temperature: -60°F to +293°F (-50°C to +145°C)

CAT. NO.	BATTERY REFERENCE
301	BR3032



Mounting Detail



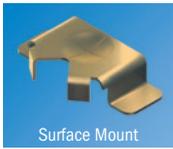


# SURFACE MOUNT (SMT) & THRU HOLE (THM) BUTTON CELL RETAINERS

Economical and reliable SMT and THM coin cell retainers specifically designed for miniature electronic applications with limited board space.

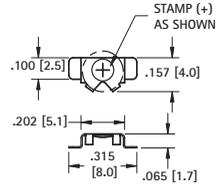
- Available in Thru Hole Mount (THM) or Surface Mount (SMT) configurations
- Retains battery securely to withstand shock and vibration
- THM legs maintain relative position during and after soldering
- Ideally suited for High Density packaging
- Reliable spring tension assures low contact resistance
- SMT solder tail with "flow-hole" design for increased joint strength
- Solder tail located outside of retainer body which facilitates visual inspection of the solder joints

4.8mm to 10mm BUTTON CELL RETAINERS



Surface Mount

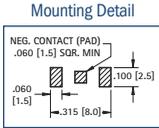
AVAILABLE ON TAPE AND REEL



MATERIAL: .006 (.15) Phosphor Bronze, Gold Plate (Flash)

CAT. NO.	ON TAPE & REEL BULK	BATTERY REFERENCE
2994	2994TR	ML414

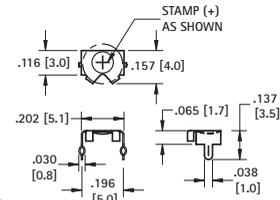
Tape & Reel Spec's: 16mm wide; 8mm pitch; 13 inch reel (1500 pieces per reel)



4.8mm

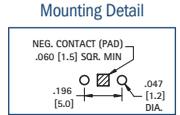


Thru Hole Mount



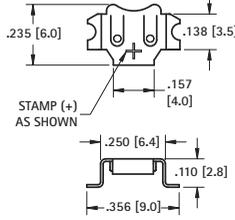
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2995	ML414



Surface Mount

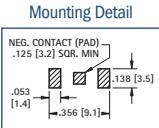
AVAILABLE ON TAPE AND REEL



MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	ON TAPE & REEL BULK	BATTERY REFERENCE
2986	2986TR	379, 317

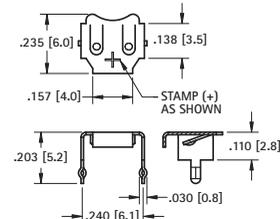
Tape & Reel Spec's: 16mm wide; 8mm pitch; 13 inch reel (1500 pieces per reel)



5.8mm

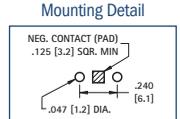


Thru Hole Mount



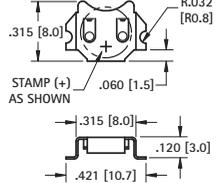
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2987	379, 317



Surface Mount

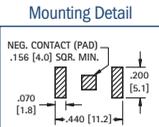
AVAILABLE ON TAPE AND REEL



MATERIAL: .010 (.25) Phosphor Bronze

CAT. NO.	ON TAPE & REEL BULK	FINISH	BATTERY REFERENCE
2998	2998TR	Tin-Nickel	MC621, V364, SC621, DR13H,
3098	3098TR	Matte Tin	DR77, V13AT, 377

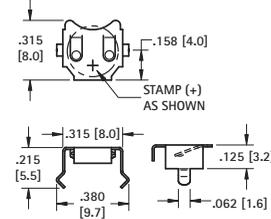
Tape & Reel Spec's: 24mm wide; 12mm pitch; 13 inch reel (1000 pieces per reel)



6.8mm

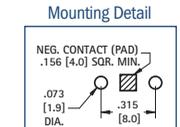


Thru Hole Mount



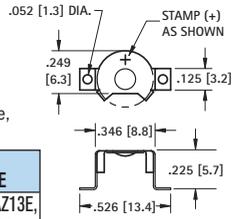
MATERIAL: .010 (.25) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2999	MC621, V364, SC621, DR13H, DR77, V13AT, 377



Surface Mount

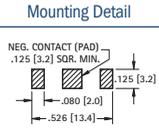
AVAILABLE ON TAPE AND REEL



MATERIAL: .010 (.25) Phosphor Bronze, Gold Plate (Flash)

CAT. NO.	ON TAPE & REEL BULK	BATTERY REFERENCE
2988	2988TR	Size 13, DA13, AZ13E, 393, SR754, SR48

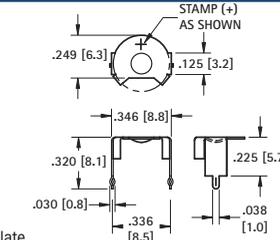
Tape & Reel Spec's: 24mm wide; 12mm pitch; 13 inch reel (800 pieces per reel)



7.9mm

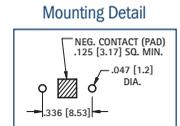


Thru Hole Mount



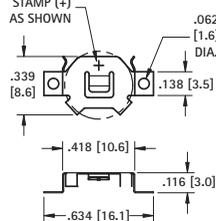
MATERIAL: .010 (.25) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2989	Size 13, DA13, AZ13E, 393, SR754, SR48



Surface Mount

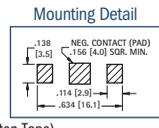
AVAILABLE ON TAPE AND REEL



MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	ON TAPE & REEL BULK	FINISH	BATTERY REFERENCE
3030	3030KTR	Tin-Nickel	CR927, CR1025
3050	3050KTR	Matte Tin	

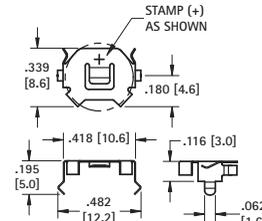
Tape & Reel Spec's: 24mm wide; 12mm pitch; 13 inch reel (1500 pieces per reel; Kapton Tape)



9 - 10mm

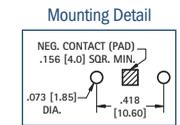


Thru Hole Mount



MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
3031	CR927, CR1025

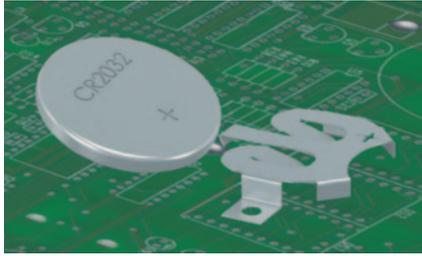


# LOCKING COIN CELL RETAINERS



- Coin cell is secured even in shock & vibration applications
- Battery can be removed without use of tools

- Compatible with all wave and reflow soldering processes
- Tin-Nickel plating is ideal for High temperature, lead free, soldering



### Toolless Battery installation:

1. Tilt battery so that top edge of battery will slide under retaining tab.
2. Level battery and slide into retainer until retaining tab snaps over battery.

### Locking Retainer:

Battery will stay retained even in severe shock applications such as hand held devices. Battery can be removed by lifting retaining tab and pushing battery from back end of retainer.

**SMT**

**THM**

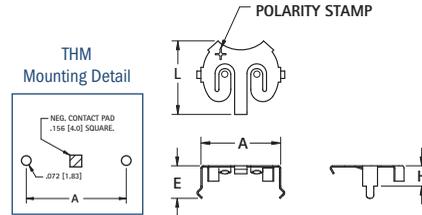
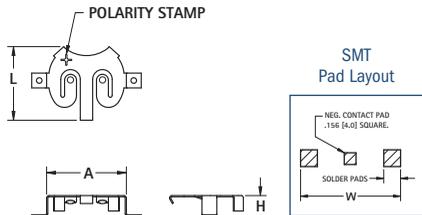
- Flow hole solder tail designed for increased joint strength
- Compatible with most vacuum and mechanical pick and place assembly systems
- All conductive polystyrene carrier tape meets ANSI/EIA-481 standard

- Snap-In legs will maintain positioning prior and during soldering
- Compatible with wave solder application

**MATERIAL:** .010 (.25) Phosphor Bronze, Tin-Nickel Plate



Surface Mount



Thru Hole Mount

AVAILABLE ON TAPE AND REEL

Surface Mount		A	H	L	W	CELL DIA.	BATTERY REFERENCE	Thru Hole Mount	
CAT. NO. BULK	ON TAPE & REEL							CAT. NO. BULK	
2894	2894TR	.520 (13.2)	.095 (2.4)	.494 (12.5)	.700 (17.8)	12mm	CR1220	2895	
2896	2896TR	.670 (17.0)	.135 (3.4)	.620 (15.8)	.920 (23.4)	16mm	BR1632	2897	
2898	2898TR	.830 (21.1)	.135 (3.4)	.771 (19.6)	1.210 (30.7)	20mm	CR2032	2899	

## SURFACE MOUNT (SMT) & THRU-HOLE (THM) INSULATED RETAINERS



Surface Mount

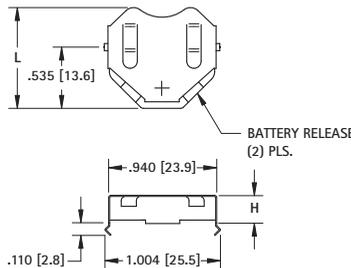
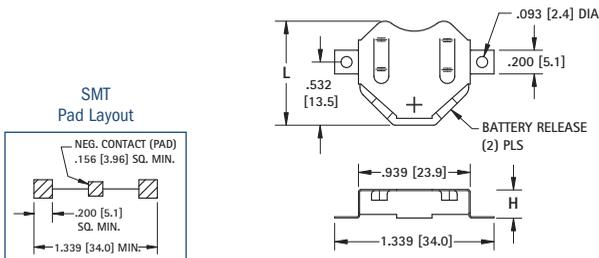
### 20mm CELLS

- Ideal for 6 volt or 3 volt applications
- Two coin cell batteries can be installed in series
- Plastic insulator prevents shorting of battery, within the holder, when installed improperly
- Low profile
- Battery release ports for easy battery replacement
- Refer to pages 8 & 11 for a complete offering of coin cell retainers

**MATERIAL:** Contacts: .010 (.25) Phosphor Bronze Insulator: High Temperature, Nylon 46, UL Rated 94V-0



Thru Hole Mount



AVAILABLE ON TAPE AND REEL

Surface Mount						BATTERY REFERENCE				Thru Hole Mount	
Tin-Nickel Plate			Matte Tin Plate			6 VOLT (2) CELLS	3 VOLT (1) CELL	L	H	Tin-Nickel Plate	
CAT. NO. LOOSE*	CAT. NO. BULK	ON TAPE & REEL	CAT. NO. LOOSE*	CAT. NO. BULK	ON TAPE & REEL					CAT. NO. LOOSE*	CAT. NO. BULK
3020-2	3020	3020TR	3070-2	3070	3070TR	2012, 2016	2020, 2025	.890 (22.6)	.156 (4.0)	3021-2	3021
3022-2	3022	3022TR	3072-2	3072	3072TR	2020, 2025	2032	.877 (22.3)	.240 (6.1)	3023-2	3023
3024-2	3024	3024TR	3074-2	3074	3074TR	2032	Not Applicable	.877 (22.3)	.295 (7.5)	3025-2	3025

\* Supplied Unassembled

Tape & Reel Spec's: 56mm wide; 28mm pitch; 13 inch reel: **3020TR, 3070TR** 400 pieces per reel; **3022TR, 3072TR** 250 pieces per reel; **3024TR, 3074TR** 250 pieces per reel

Tel (516) 328-7500 • Fax (516) 328-1080  
(800) 221-5510 • kec@keyelco.com

**KEYSTONE**  
RoHS COMPLIANT — ISO 9001 CERTIFIED

www.keyelco.com  
55 S. Denton Avenue, New Hyde Park, NY 11040

12mm to 20mm COIN CELL RETAINERS

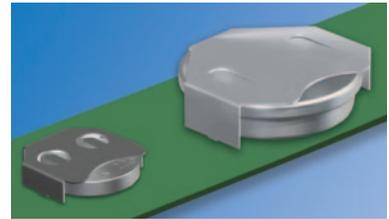


## THRU HOLE (THM) COIN CELL RETAINERS

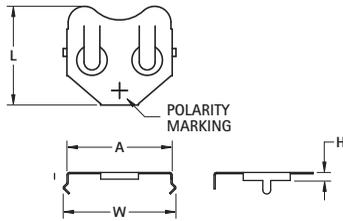
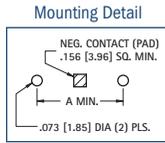
11.6mm to 30mm COIN CELL RETAINERS



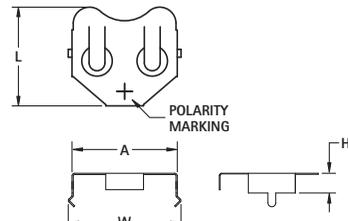
- Snap-In legs maintain relative positioning prior and during soldering
- Compatible with wave soldering processes
- Thru hole solder legs provides excellent mechanical strength
- Lowest profile mounting as compared to coin cell holders
- Economical design allows for PCB pads to be used as negative contacts
- Tin Nickel plating provides low contact resistance and will hold up to high temperature lead free soldering
- Battery can be easily replaced without any tools
- Operating Temperature: -50°F to 265°F (-45°C to 130°C)



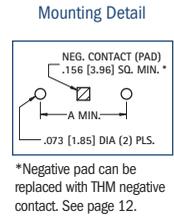
**MATERIAL:** .010 (.25) Phosphor Bronze, Tin-Nickel Plate



**FIG. 1 - Compact**



**FIG. 2 - Low Profile**



CAT. NO.	FIG.	A	H	L	W	CELL DIA.	BATTERY REFERENCE
<b>2997</b>	2	.520 (13.2)	.235 (6.0)	.475 (12.1)	.585 (14.9)	11.6mm	SR43, 186, 386, A76, LR44, 357, MS76, PX76A, G-13, 303, V313
<b>3001</b>	2	.520 (13.2)	.118 (3.0)	.475 (12.1)	.585 (14.9)	12mm	CR1216, BR1220, CL1225, SR1120, D381, 391, 191
<b>3013</b>	2	.664 (16.9)	.156 (4.0)	.594 (15.1)	.723 (18.4)	16mm	BR1616, CR1612, CR1616, CR1620, CR1632
<b>3027</b>	1	.831 (21.1)	.085 (2.2)	.782 (19.9)	.890 (22.6)	20mm	BR2016, CR2016, DL2016
<b>3003</b>	2	.831 (21.1)	.156 (4.0)	.782 (19.9)	.890 (22.6)	20mm	BR2020, CR2020, CR2025, DL2025, CR2032
<b>3005</b>	2	.939 (23.9)	.156 (4.0)	.832 (21.1)	1.004 (25.5)	23mm	BR2320, CL2330, CR2320, BR2325, CR2325, DL2325
<b>3011</b>	2	.939 (23.9)	.240 (6.1)	.819 (20.8)	1.004 (25.5)	23mm	CR2354, DL2354
<b>3007</b>	1	1.000 (25.4)	.156 (4.0)	.918 (23.3)	1.055 (26.8)	24mm	CR2430, DL2430
<b>3009</b>	2	1.000 (25.4)	.230 (5.8)	.890 (22.6)	1.059 (26.9)	24mm	CR2450, DL2450
<b>3039</b>	2	1.000 (25.4)	.336 (8.5)	.890 (22.6)	1.059 (26.9)	24mm	CR2477, DL2477
<b>3047</b>	2	1.227 (31.2)	.167 (4.2)	1.020 (25.9)	1.340 (34.0)	30mm	CR3032

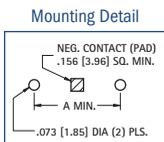
## THRU HOLE (THM) ULTRA LOW PROFILE COIN CELL RETAINER



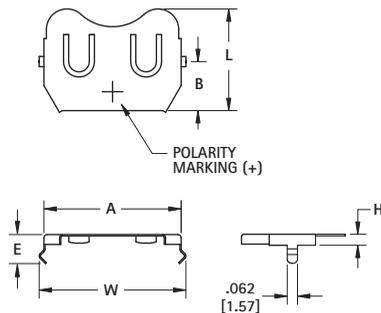
The Ultra Low Profile Coin Cell retainers are designed specifically for the most popular 20mm & 24mm coin cells. It will provide reliable contact as well as retain the coin cell with the minimum space needed. Ideal for small applications such as remote controls or active RFID tags.

- Slim design - saves valuable board space
- Narrow face allows for quick and easy battery replacement
- Designed for specific batteries - lowest height design
- Operating Temperature: -50°F to 265°F (-45°C to 130°C)

**MATERIAL:** .010 (.25) Phosphor Bronze, Tin-Nickel Plate



THM Negative contact not recommended for Ultra Low Profile Retainers



CAT. NO.	A	H	L	W	CELL DIA.	BATTERY REFERENCE
<b>3029</b>	.831 (21.1)	.067 (1.7)	.618 (15.7)	.890 (22.6)	20mm	CR2012, DL2012
<b>3035*</b>	.835 (21.2)	.170 (4.3)	.600 (15.2)	.880 (22.3)	20mm	CR2032, CR2025, CR2020
<b>3033</b>	1.000 (25.4)	.067 (1.7)	.681 (17.3)	1.055 (26.8)	24mm	CR2412, BR2412

\* Nickel Plate

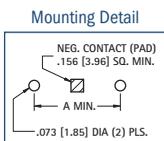
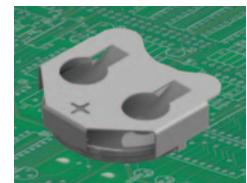
## PIN AND PASTE COIN CELL RETAINERS



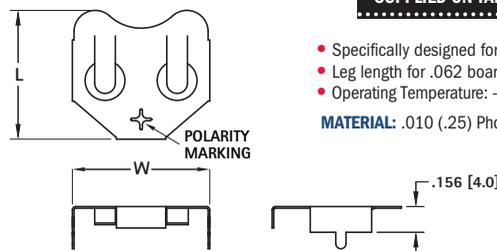
**SUPPLIED ON TAPE AND REEL**

- Specifically designed for pin & paste applications
- Leg length for .062 boards
- Operating Temperature: -50°F to 265°F (-45°C to 130°C)

**MATERIAL:** .010 (.25) Phosphor Bronze, Tin-Nickel Plate



THM Negative contact not recommended for Ultra Low Profile Retainers



CAT. NO.	L	W	CELL DIA.	BATTERY REFERENCE	TAPE & REEL SPECS
<b>3085</b>	.594 (15.1)	.670 (17.0)	16mm	BR1616, CR1612, CR1616, CR1620, CR1632	36mm wide ; 24mm pitch; 500/reel
<b>3083</b>	.782 (19.9)	.831 (21.1)	20mm	BR2020, CR2020, CR2025, DL2025, CR2032	36mm wide ; 24mm pitch; 500/reel
<b>3087</b>	.918 (23.3)	1.00 (25.4)	24mm	CR2430, DL2430	44mm wide; 32mm pitch; 250/reel

# SURFACE MOUNT (SMT) COIN CELL RETAINERS



- Compatible with reflow soldering processes
- Solder tails located outside of retainer which facilitates visual inspection of solder joint
- Compatible with most vacuum and mechanical pick & place assembly system
- All conductive carrier tape meets ANSI/EIA-481 standards
- Economical design allows for PCB pads to be used as negative contacts
- Matte Tin Plate for lower soldering temperatures. Ideal when other temperature sensitive components are being used

- Tin Nickel plating provides low contact resistance and will hold up to high temperature lead free soldering
- Dual spring contact assures battery will have proper contact with PCB
- Battery can be easily replaced without any tools

## SURFACE MOUNT (SMT)

### AVAILABLE ON TAPE AND REEL

- All conductive polystyrene carrier tape meets ANSI/EIA-481 standards

**MATERIAL:** .010 (.25) Phosphor Bronze  
**Operating Temperature:** -50°F TO 265°F (-45°C TO 130°C)

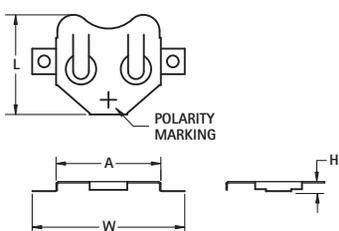
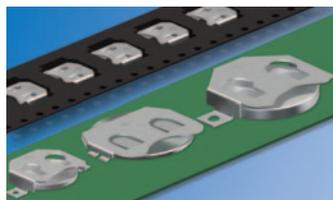


FIG. 1 - Compact

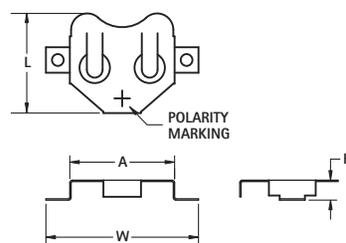
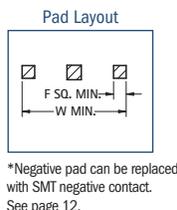
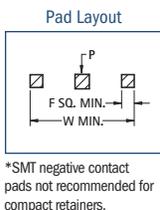


FIG. 2 - Low Profile

TIN-NICKEL PLATE		MATTE TIN PLATE		FIG.	A	H	F	L	P	W	CELL DIA.	BATTERY REFERENCE	TAPE & REEL SPEC'S
CAT. NO. BULK	ON TAPE & REEL	CAT. NO. BULK	ON TAPE & REEL										
2996	2996TR	3096	3096TR	2	.520 (13.2)	.235 (6.0)	.205 (5.2)	.475 (12.1)	.156 (4.0)	.700 (17.8)	11.6mm	SR43, 186, 386, A76, LR44, 357, MS76, PX76A, G-13, 303, V313	32mm wide; 16mm pitch; 600/reel
3000	3000TR	3080	3080TR	2	.520 (13.2)	.125 (3.2)	.125 (3.3)	.475 (12.1)	.156 (4.0)	.745 (18.9)	12mm	CR1216, BR1220, CL1225, SR1120, D381, 391, 191	32mm wide; 16mm pitch; 1000/reel
3012	3012TR	3092	3092TR	2	.664 (16.9)	.156 (4.0)	.125 (3.2)	.594 (15.1)	.156 (4.0)	.914 (23.2)	16mm	BR1612, CR1616, CR1620, DL1632	44mm wide; 24mm pitch; 600/reel
3026	3026TR	3078	3078TR	1	.831 (21.1)	.085 (2.2)	.200 (5.1)	.782 (19.9)	.156 (4.0)	1.210 (30.7)	20mm	BR2016, CR2016, DL2016	44mm wide; 24mm pitch; 1000/reel
3002	3002TR	3082	3082TR	2	.831 (21.1)	.156 (4.0)	.200 (5.1)	.782 (19.9)	.156 (4.0)	1.210 (30.7)	20mm	BR2016, DL2020, CR2025, CR2032	44mm wide; 24mm pitch; 500/reel
3004	3004TR	3084	3084TR	2	.939 (23.9)	.156 (4.0)	.200 (5.1)	.832 (21.1)	.156 (4.0)	1.339 (34.0)	23mm	BR2320, CL2325, CR2330, DL2335	56mm wide; 32mm pitch; 400/reel
3010	3010TR	3090	3090TR	2	.939 (23.9)	.240 (6.1)	.200 (5.1)	.819 (20.8)	.156 (4.0)	1.339 (34.0)	23mm	CR2354, DL2354	56mm wide; 32mm pitch; 200/reel
3006	3006TR	3086	3086TR	1	1.000 (25.4)	.156 (4.0)	.200 (5.1)	.918 (23.3)	.156 (4.0)	1.400 (35.6)	24mm	CR2430, DL2430	56mm wide; 32mm pitch; 400/reel
3008	3008TR	3088	3088TR	2	1.000 (25.4)	.230 (5.8)	.200 (5.1)	.890 (22.6)	.156 (4.0)	1.400 (35.6)	24mm	CR2450, DL2450	56mm wide; 32mm pitch; 200/reel
3046	3046TR	—	—	2	1.227 (14.3)	.167 (4.2)	.205 (5.2)	1.020 (25.9)	.156 (4.0)	1.627 (41.3)	30mm	CR3032	56mm wide; 32mm pitch; 400/reel

## SURFACE MOUNT (SMT) ULTRA LOW PROFILE COIN CELL RETAINER

### AVAILABLE ON TAPE AND REEL

Ultra Low Profile Coin Cell Retainers are designed specifically for the most popular coin cells. It will provide reliable contact as well as retain the coin cell with the minimum space needed. Ideal for small applications such as remote controls or active RFID tags.

- Slim design - saves valuable board space
- Narrow face allows for quick and easy battery replacement
- Designed for specific batteries - lowest height design

**MATERIAL:** .010 (.25) Phosphor Bronze, Tin-Nickel Plate  
**Operating Temperature:** 50°F TO 265°F (-45°C TO 130°C)

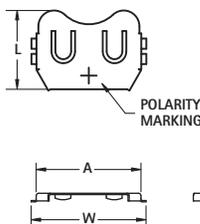
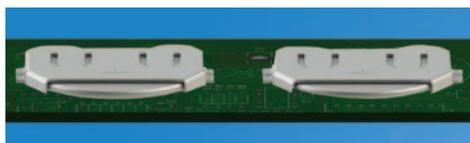
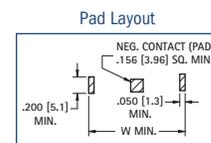


FIG. 3 - Ultra Low



TIN-NICKEL PLATE		MATTE TIN PLATE		FIG.	A	H	L	W	CELL DIA.	BATTERY REFERENCE	TAPE & REEL SPEC'S
CAT. NO. BULK	ON TAPE & REEL	CAT. NO. BULK	ON TAPE & REEL								
3028	3028TR	3038	3038TR	3	.831 (21.1)	.067 (1.7)	.618 (15.7)	.911 (23.1)	20mm	BR2012, CR2012, DL 2012	44mm wide; 24mm pitch; 1000/reel
3034*	3034TR*	3044	3044TR	3	.835 (21.2)	.160 (4.1)	.635 (16.1)	.915 (23.1)	20mm	BR2016, DL2020, CR2025, CR2032	44mm wide; 24mm pitch; 1000/reel
3032	3032TR	3042	3042TR	3	1.000 (25.4)	.067 (1.7)	.681 (17.2)	1.080 (27.4)	24mm	BR2412, CR2412	44mm wide; 24mm pitch; 1000/reel

\*Nickel Plate



# SURFACE MOUNT (SMT) COIN CELL ENCLOSURE CONTACTS

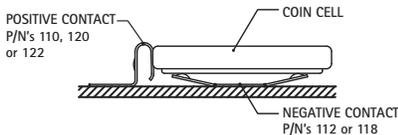
- Contacts for Enclosure cases with self contained battery compartments
- Design facilitates easy battery access, removal & installation

- Suitable for industrial and consumer product applications
- Spring contacts adjust to variations in battery diameter for a dependable connection

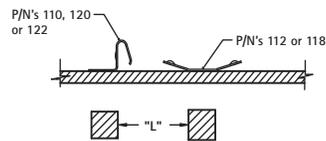
- Positive and Negative contacts can be used as a design pair or individually on a PCB
- Accommodates cell diameters from 12mm to 30mm

AVAILABLE ON TAPE AND REEL

**MATERIAL:** .006 (.15) Stainless Steel, Gold Plate (Flash)  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)



Refer to page 38 for Mounting Details

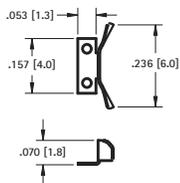


---CONTACT SELECTION GUIDE			
BATTERY DIAMETER	BATTERY REFERENCE	CAT. NO. REFERENCE	MOUNTING DETAIL
Accommodates 12mm to 16mm	CR1212, CR1216, CR1220, CR1612, CR1616, CR1620	<b>120 (Pos) &amp; 118 (Neg)</b>	See page 38
	CR1225, CR1625, CR1632	<b>110 (Pos) &amp; 118 (Neg)</b>	See page 38
Accommodates 20mm to 30mm	CR2012, CR2016, CR2020, CR2320, CR2412	<b>120 (Pos) &amp; 112 (Neg)</b>	See page 38
	CR2025, CR2032, CR2325, CR2330, CR2430, CR3032	<b>110 (Pos) &amp; 112 (Neg)</b>	See page 38
	CR2050, CR2335, CR2354, CR2440, CR2450, CR2477, CR3048	<b>122 (Pos) &amp; 112 (Neg)</b>	See page 38

12mm to 30mm COIN CELL CONTACTS

## POSITIVE

**LOW BATTERY HEIGHT**  
1.2mm to 2.0mm

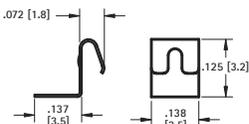
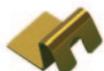


**CAT. NO. 120** Bulk

**CAT. NO. 120TR** Tape & Reel

**Tape & Reel Spec's:** 16mm wide, 8mm pitch, 13 inch reel, 3000 pieces per reel

**MEDIUM BATTERY HEIGHT**  
2.0mm to 3.2mm

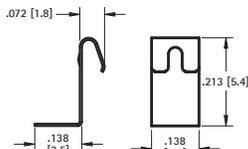


**CAT. NO. 110** Bulk

**CAT. NO. 110TR** Tape & Reel

**Tape & Reel Spec's:** 16mm wide, 8mm pitch, 13 inch reel, 2000 pieces per reel

**TALL BATTERY HEIGHT**  
3.5mm to 7.7mm



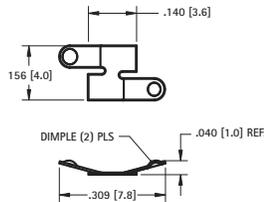
**CAT. NO. 122** Bulk

**CAT. NO. 122TR** Tape & Reel

**Tape & Reel Spec's:** 16mm wide, 8mm pitch, 13 inch reel, 1000 pieces per reel

## NEGATIVE

**BATTERY DIAMETER**  
12mm to 16mm

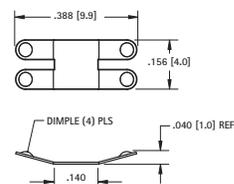


**CAT. NO. 118** Bulk

**CAT. NO. 118TR** Tape & Reel

**Tape & Reel Spec's:** 24mm wide, 8mm pitch, 13 inch reel, 5000 pieces per reel

**BATTERY DIAMETER**  
20mm to 30mm



**CAT. NO. 112** Bulk

**CAT. NO. 112TR** Tape & Reel

**Tape & Reel Spec's:** 24mm wide, 8mm pitch, 13 inch reel, 5000 pieces per reel

# SURFACE MOUNT (SMT) & THRU-HOLE (THM) NEGATIVE BATTERY CONTACTS

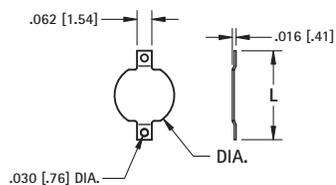
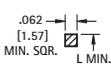
AVAILABLE ON TAPE AND REEL

## SMT COMPACT\*



- Assures proper contact

Pad Layout



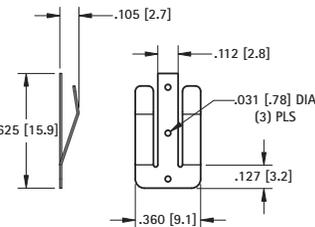
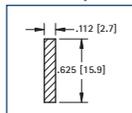
**DWG. 1 MATERIAL:** .008 (.20) Brass

## SMT SPRING CONTACT\*



- Assures proper contact

Pad Layout

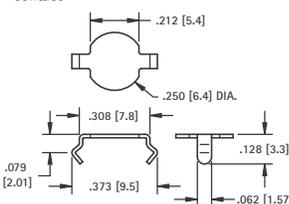


**DWG. 2 MATERIAL:** .010 (.25) Phosphor Bronze

## THM SNAP IN\*



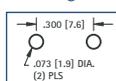
- Assures proper contact



**MATERIAL:** .008 (.20) Phosphor Bronze, Tin-Nickel Plate

**CAT. NO. 2990**

Mounting Detail



TIN-NICKEL PLATE		MATTE TIN PLATE		DWG.	L	DIA.	TAPE & REEL SPECS
CAT. NO. BULK	ON TAPE & REEL	CAT. NO. BULK	ON TAPE & REEL				
2991	2991TR	2981	2981TR	1	.368 (9.4)	.250 (6.4)	16mm wide, 8mm pitch, 1500/7 reel
2992	2992TR	2982	2982TR	1	.289 (7.4)	.186 (4.7)	16mm wide, 12mm pitch, 1000/7 reel
2993	2993TR	2983	2983TR	2	.625 (15.9)	-	24mm wide, 16mm pitch, 1000/13 reel

\*Note: Cannot be used with Cat. No. 3028, 3029, 3032, 3038, 3042, 3026, 3078.

# THRU HOLE MOUNT (THM) BATTERY CLIPS



- Mounts securely to the PC board with advanced Snap-In design for thru hole mounting
- Reliable spring tension assures low contact resistance
- Low profile, economical design
- Retains battery securely to withstand shock and vibration



Refer to page 40 for Battery Contact Layout & Mounting Details

**MATERIAL:** Spring Steel, Tin-Nickel Plate  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

“AAAA” • “A27”

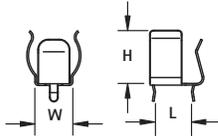


FIG. 1

“AAA” • “N” • “A23” • “AA” • “CR2”

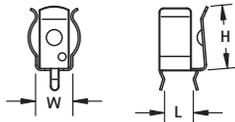


FIG. 2

“A” • “17500” • “18350”  
 • “18650” • “20700” • “21700”

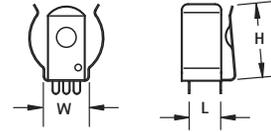


FIG. 3

CAT. NO.	FIG.	BATTERY SIZE	BATTERY DIAMETER	H	L	W
51	1	“AAAA” • “A27”	.300 - .350 (7.6 - 8.9)	.320 (8.1)	.194 (4.9)	.226 (5.7)
82	2	“AAA” • “N” • “A23”	.375 - .460 (9.5 - 11.7)	.525 (13.3)	.228 (5.8)	.296 (7.5)
52*	2	“AA” • “CR2”	No Ears	.525 (13.3)	.228 (5.8)	.250 (6.4)*
92	2	“AA” • “CR2”	.531 - .665 (13.5 - 16.9)	.593 (15.1)	.228 (5.8)	.369 (9.4)
2915**	2	“AA” • “CR2”	.531 - .665 (13.5 - 16.9)	.593 (15.1)	.228 (5.8)	.375 (9.5)
54	3	“A” • 17500 • 18350 • 18650	.630 - 748 (16.0 - 19.0)	.653 (16.6)	.300 (7.6)	.438 (11.1)
247	3	20700 • 21700	.787 - .827 (20.0 - 21.0)	.703 (17.9)	.378 (9.6)	.516 (13.1)

\* No Ears to hold battery  
 \*\* Heavy Duty Clip; .015 (.38) thick material

## SURFACE MOUNT (SMT) BATTERY CLIPS/CONTACTS



Refer to page 39 for Battery Contact Layout & Mounting Details

AVAILABLE ON TAPE AND REEL

- Flow-Hole SMT solder tail design for increased joint strength
- Tin-Nickel plating is ideal for lead free, high temperature soldering
- Matte Tin Plate for lower soldering temperatures ideal where other temperature sensitive components are being used



**MATERIAL:** Spring Steel, Tin-Nickel Plate  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

“AAAA” • “A27”

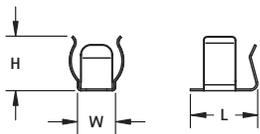


FIG. 4

“AAA” • “N” • “A23” • “AA” • “CR2”

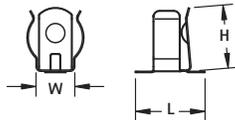


FIG. 5

“A” • “17500” • “18350”  
 • “18650” • “20700” • “21700”

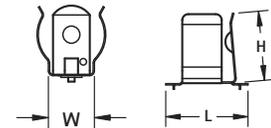


FIG. 6

TIN-NICKEL PLATE		MATTE TIN PLATE		FIG.	BATTERY SIZE	BATTERY DIAMETER	H	L	W
CAT. NO. BULK	ON TAPE & REEL	CAT. NO. BULK	ON TAPE & REEL						
50	50TR	550	550TR	4	“AAAA” • “A27”	.300 - .350 (7.6 - 8.9)	.320 (8.1)	.400 (10.2)	.226 (5.7)
55	55TR	555	555TR	5	“AAA” • “N” • “A23”	.375 - .460 (9.5 - 11.7)	.498 (12.7)	.671 (17.0)	.296 (7.5)
56*	56TR	556	556TR	5	“AAA” • “N” • “A23”	No Ears	.396 (10.1)	.613 (15.6)	.250 (6.4)*
53	53TR	553	553TR	5	“AA” • “CR2”	.531 - .665 (13.5 - 16.9)	.593 (15.1)	.662 (16.8)	.369 (9.4)
57*	57TR	557	557TR	5	“AA” • “CR2”	No Ears	.466 (11.87)	.613 (15.6)	.250 (6.4)*
254	254TR	—	—	6	“A” • 17500 • 18350 • 18650	.630 - 748 (16.0 - 19.0)	.653 (16.6)	.783 (19.9)	.438 (11.1)
246	246TR	—	—	6	20700 • 21700	.787 - .827 (20.0 - 21.0)	.703 (17.9)	.969 (24.6)	.516 (13.1)

\* No Ears to hold battery



# PC BUTTON & SPRING CONTACTS



- Space saving design installs directly onto the PC board
- Suitable for .062 (1.57) to .093 (2.36) PC boards
- Reliable spring tension assures low contact resistance
- Ideal for self-contained battery compartments

Operating Temperature: -50°F to 185°F (-45°C to 85°C)

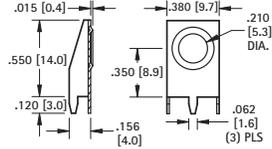


Refer to page 40 for Battery Contact Layout & Mounting Details

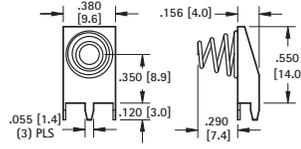
## COIL SPRING

"AA" • "CR2" • "A"

(+) POSITIVE BUTTON



(-) NEGATIVE SPRING



**MATERIAL:**  
Frame: .015 (.38)  
Steel, Tin-Nickel Plate

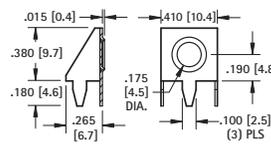
**CAT. NO. 595**

**MATERIAL:**  
Frame: .015 (.38) Steel,  
Matte Tin Plate

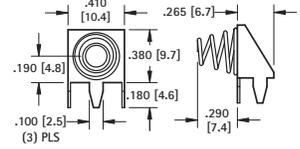
**CAT. NO. 628**

"AAA" • "N" • "A23"

(+) POSITIVE BUTTON



(-) NEGATIVE SPRING



**MATERIAL:**  
Frame: .015 (.38) Steel,  
Tin-Nickel Plate

**CAT. NO. 637**

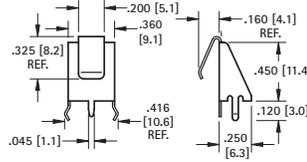
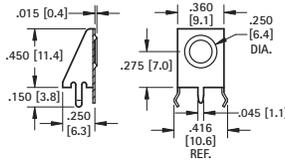
**MATERIAL:**  
Frame: .015 (.38)  
Steel, Matte Tin Plate

**CAT. NO. 629**

## LEAF SPRING

**MATERIAL:** .012 (.30) Spring Steel, Tin-Nickel Plate

"AA" • "CR2" • "A"

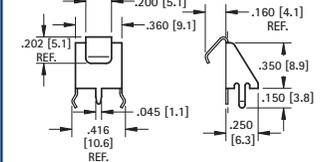
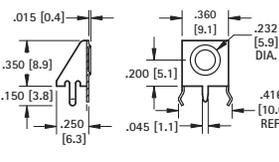


**CAT. NO. 596**

**CAT. NO. 590**

**MATERIAL:** .010 (.25) Spring Steel, Tin-Nickel Plate

"AAA" • "N" • "A23"



**CAT. NO. 597**

**CAT. NO. 591**

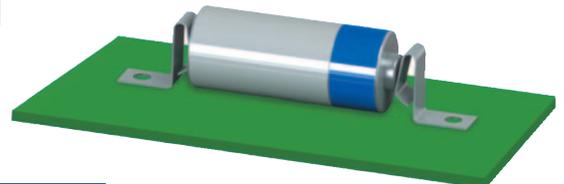
# SURFACE MOUNT LEAF SPRING CONTACTS

AVAILABLE ON TAPE AND REEL

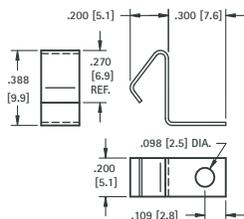
- Economical & reliable contacts are ideal for surface mount applications
- Unique spring tension contacts adjust to variations in battery length
- Reliable spring tension contacts assure low contact resistance
- SMT solder tail with "flow-hole" design for increased joint strength

Operating Temperature: -50°F to 185°F (-45°C to 85°C)

Refer to page 39 for Battery Contact Layout & Mounting Details



"AAA" • "AAAA" • "A23" • "A27" • "N"

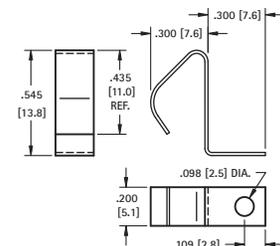


**MATERIAL:** .010 (.25) Spring Steel

TIN-NICKEL PLATE		MATTE TIN PLATE	
CAT. NO.	ON TAPE	CAT. NO.	ON TAPE
BULK	& REEL	BULK	& REEL
5230	5230TR	5330	5330TR

Tape and Reel Spec's: 24mm wide; 12mm pitch; 13 inch reel (400 pieces per reel)

"AA" • "CR2" • "A" • "9V"



**MATERIAL:** .010 (.25) Spring Steel

TIN-NICKEL PLATE		MATTE TIN PLATE	
CAT. NO.	ON TAPE	CAT. NO.	ON TAPE
BULK	& REEL	BULK	& REEL
5231	5231TR	5331	5331TR

Tape and Reel Spec's: 32mm wide; 16mm pitch; 13 inch reel (250 pieces per reel)

# SLIDE-IN PC MOUNT CONTACTS



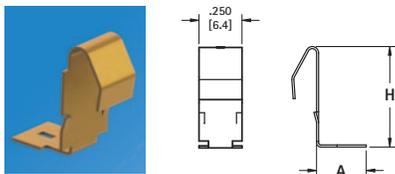
- Reliable spring tension assure low contact resistance and dependable connection
- Symmetrical design allows these contacts to function both as a positive and negative contacts
- Economical and reliable contacts
- Designed for direct placement onto PCB, no wire leads required
- Unique spring tension adjusts to variations in battery length
- Stainless Steel contacts provide superior corrosion resistance

**MATERIAL:** .012 (.30) Stainless Steel  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

Refer to pages 39 & 41 for Battery Contact Layout & Mounting Details

## SURFACE MOUNT

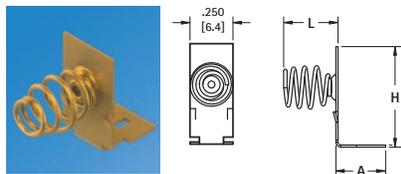
### LEAF SPRING



Finish: Gold Plate (Flash)

CAT. NO.	BATTERY SIZE	H	A
1020-1	"AAA"	.435 (11.1)	.250 (6.4)
1016-1	"AA"	.578 (14.9)	.289 (7.3)

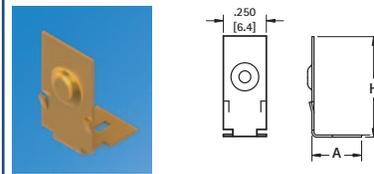
### COIL SPRING



Finish: Gold Plate (Flash)

CAT. NO.	BATTERY SIZE	H	L	A
1076-2	"AAA"	.435 (11.1)	.325 (8.3)	.250 (6.4)
1088-2	"AA"	.578 (14.9)	.313 (8.0)	.289 (7.3)

### BUTTON CONTACT

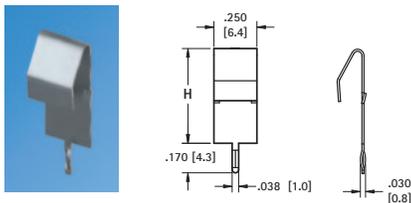


Finish: Gold Plate (Flash)

CAT. NO.	BATTERY SIZE	H	A
1076-1	"AAA"	.435 (11.1)	.250 (6.4)
1088-1	"AA"	.578 (14.9)	.289 (7.3)

## THRU HOLE MOUNT

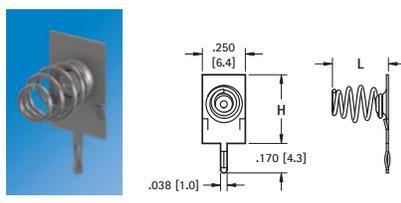
### LEAF SPRING



Finish: Tin-Nickel Plate

CAT. NO.	BATTERY SIZE	H
1021-1	"AAA"	.405 (10.3)
1017-1	"AA"	.545 (13.8)

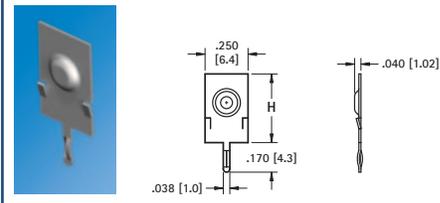
### COIL SPRING



Finish: Tin-Nickel Plate

CAT. NO.	BATTERY SIZE	H	L
1075-2	"AAA"	.395 (10.0)	.326 (8.3)
1087-2	"AA"	.545 (13.8)	.313 (8.0)

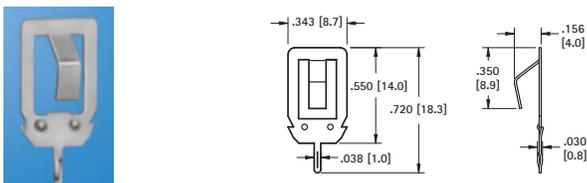
### BUTTON CONTACT



Finish: Tin-Nickel Plate

CAT. NO.	BATTERY SIZE	H
1075-1	"AAA"	.395 (10.0)
1087-1	"AA"	.545 (13.8)

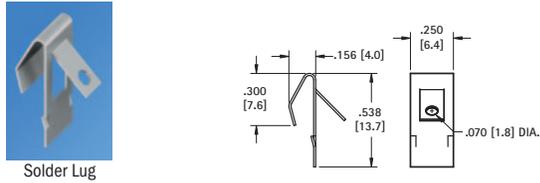
### "AAA" • "N" • "AA" • "CR2" • "A"



Finish: Tin-Nickel Plate

CAT. NO. 108-2

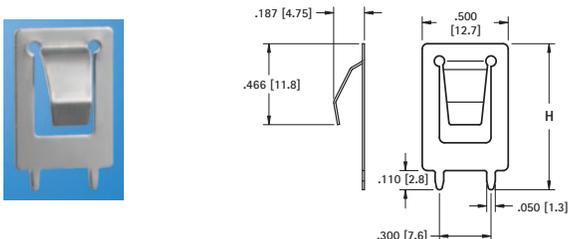
### "AA" • "A" • "17500" • "18350" • "18650" • "C" • "D"



Solder Lug

Finish: Tin-Nickel Plate

CAT. NO. 1107-1

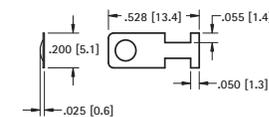


MATERIAL: .012 (.30) Spring Steel, Nickel Plate

CAT. NO.	(H) Height	BATTERY REFERENCE
109-2	.840 (21.3)	"AA" • "A" • "17500" • "18350" • "18650" • "C"
109-3	1.000 (25.4)	"20700" • "21700" • "D"

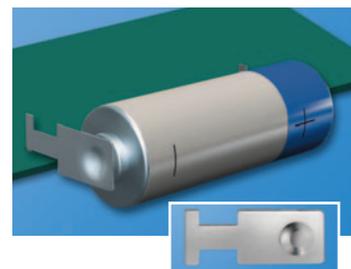
### "AAA" • "AAAA" • "N" • "12V"

"Off-Board" edge mounting design frees up valuable board space



CAT. NO. 230-1

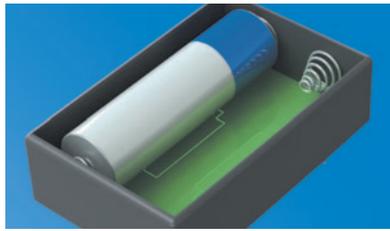
MATERIAL: .008 (.20) Spring Steel, Nickel Plate



SLIDE-IN PC MOUNT CONTACTS

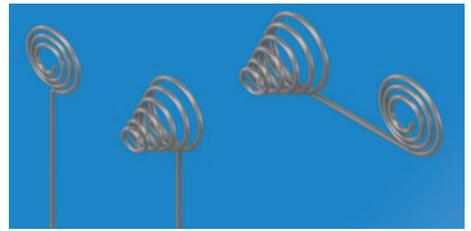


# SLIDE-IN PC MOUNT CONTACTS



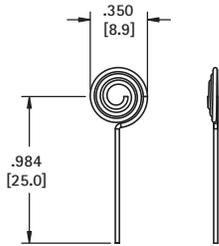
- Economical and reliable contacts
- Designed for direct placement onto PCB, no wire leads required
- Unique spring tension adjusts to variations in battery length
- Reliable spring tension assure low contact resistance and dependable connection

Refer to page 41 for Battery Contact Layout & Mounting Details



# PC COIL SPRING CONTACTS

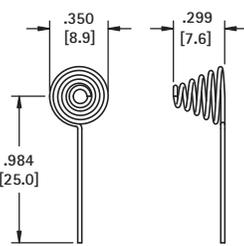
"AA" - "CR2" - "A" - "17500" - "18350" - "18650"



CAT. NO. 242

MATERIAL: .024 (.60) Music Wire, Nickel Plate

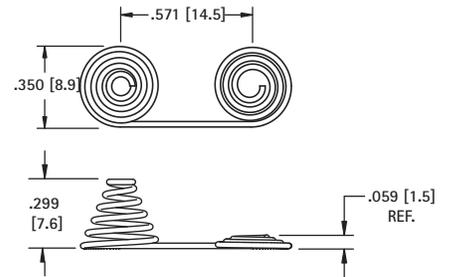
"AA" - "CR2" - "A" - "17500" - "18350" - "18650"



CAT. NO. 243

MATERIAL: .024 (.60) Music Wire, Nickel Plate

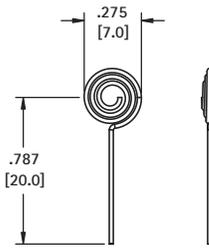
"AA"



CAT. NO. 244

MATERIAL: .024 (.60) Music Wire, Nickel Plate

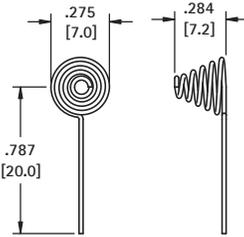
"AAAA" - "A23" - "A27" - "AAA" - "N"



CAT. NO. 179

MATERIAL: .020 (.50) Music Wire, Nickel Plate

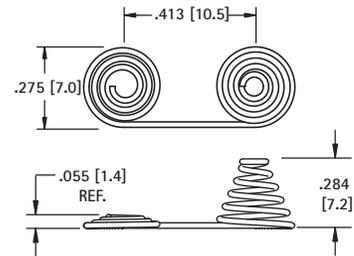
"AAAA" - "A23" - "A27" - "AAA" - "N"



CAT. NO. 180

MATERIAL: .020 (.50) Music Wire, Nickel Plate

"AAA"

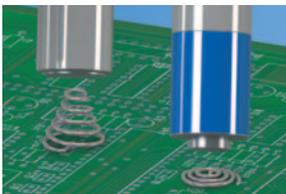


CAT. NO. 181

MATERIAL: .020 (.50) Music Wire, Nickel Plate

## BATTERY SPRING CONTACTS

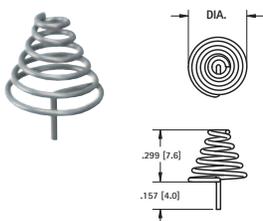
THRU-HOLE MOUNT - "AA" - "CR2" - "AAA" - "N"



Solders directly to PCB, no wiring required

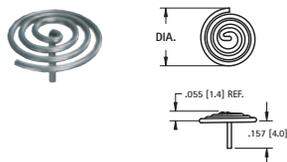
MATERIAL: .024 (.60) Dia Spring Steel, Nickel Plate

NEGATIVE



CAT. NO.	DIA.	BATTERY REFERENCE
249	.275 (7.0)	AAA
240	.350 (8.9)	AA

POSITIVE



CAT. NO.	DIA.	BATTERY REFERENCE
248	.275 (7.0)	AAA
241	.350 (8.9)	AA

RIVET MOUNT

Easy to assemble with eyelets or rivets. Refer to page 142.



CAT. NO.	H	A	B	C	MATERIAL	CELL SIZE
211	.290 (7.4)	.335 (8.5)	.100 (2.5)	.140 (3.6)	.025 (.64) Dia. Spring Steel, Nickel Plate	"2/3 A" - "AA"
211-C	.550 (14.0)	.490 (12.4)	.118 (3.0)	.256 (6.5)	.040 (1.0) Dia. Spring Steel, Nickel Plate	"C"
211-D	.850 (21.6)	.650 (16.5)	.162 (4.1)	.300 (7.6)	.040 (1.0) Dia. Spring Steel, Nickel Plate	"D"

- Economical and reliable contacts are ideal for molded cases with self-contained battery compartments
- "Solder Tab" design for either wire lead or PC mounting
- Unique spring contacts adjust to variations in battery lengths
- Reliable spring contacts assure low contact resistance and a dependable connection
- Space saving, economical, excellent mechanical construction



**MATERIAL:**

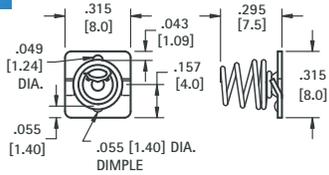
**Plate:** .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate

Refer to page 42 for Battery Contact Layout & Mounting Details

**"AAA" · "AAAA" · "N" · "A23" · "A27"**



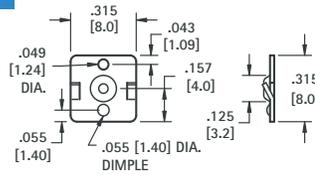
(-) NEGATIVE SPRING



**CAT. NO. 5203**



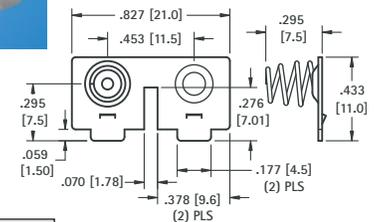
(+) POSITIVE BUTTON



**CAT. NO. 5225**



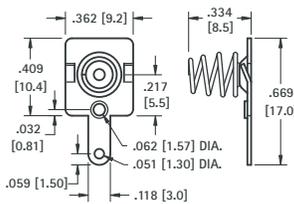
DUAL CONTACT (RIGHT)



**CAT. NO. 5213**



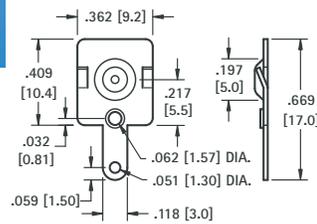
(-) NEGATIVE SPRING WITH TAB



**CAT. NO. 5204**



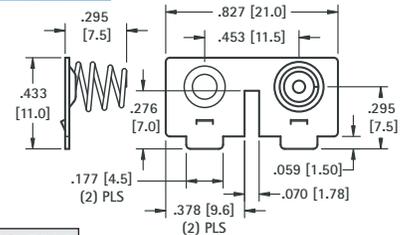
(+) POSITIVE BUTTON WITH TAB



**CAT. NO. 5226**



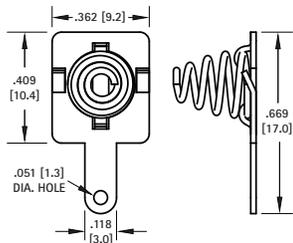
DUAL CONTACT (LEFT)



**CAT. NO. 5214**



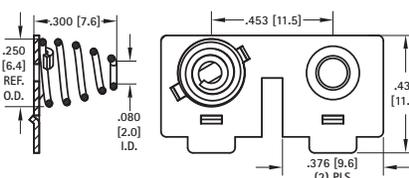
(-) NEGATIVE SPRING WITH TAB



**CAT. NO. 5234**



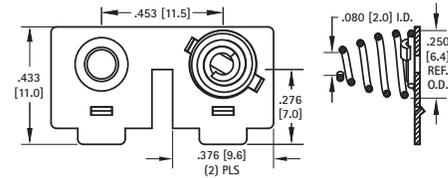
DUAL CONTACT (LEFT)



**CAT. NO. 5254**



DUAL CONTACT (RIGHT)

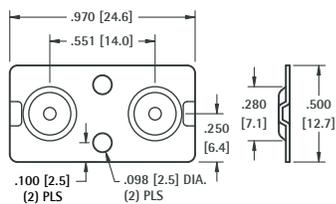


**CAT. NO. 5259**

**"AA"**



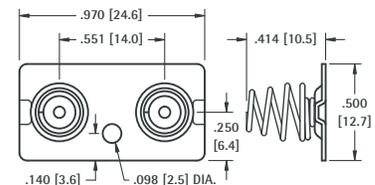
DUAL BUTTON CONTACT



**CAT. NO. 5227**



DUAL SPRING CONTACT



**CAT. NO. 5228**

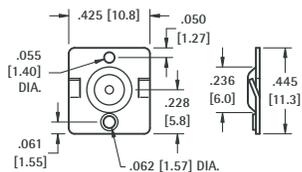


# SPRING & BUTTON CONTACTS

**MATERIAL:** Plate: .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate **Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

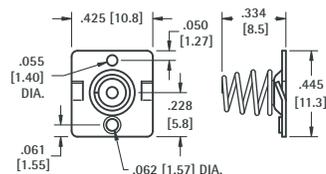
"AA" - "CR2" - "A" - "17500" - "18350" - "18650"

(+) POSITIVE BUTTON



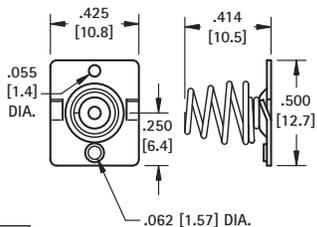
CAT. NO. 5224

(-) NEGATIVE SPRING



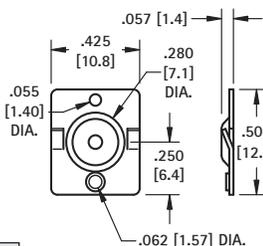
CAT. NO. 5202

(-) NEGATIVE SPRING



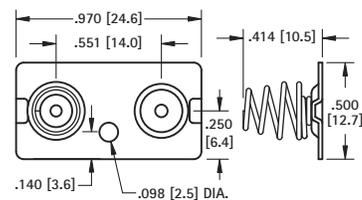
CAT. NO. 5222

(+) POSITIVE BUTTON



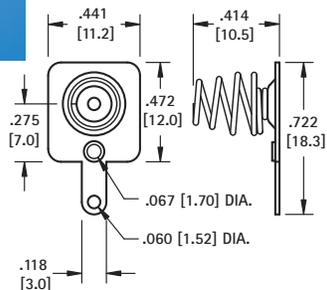
CAT. NO. 5221

DUAL CONTACT ("AA" ONLY)



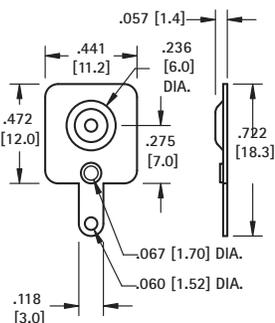
CAT. NO. 5212 Left or Right

(-) NEGATIVE SPRING WITH TAB



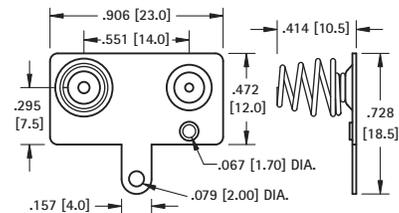
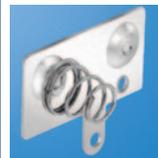
CAT. NO. 5201

(+) POSITIVE BUTTON WITH TAB



CAT. NO. 5223

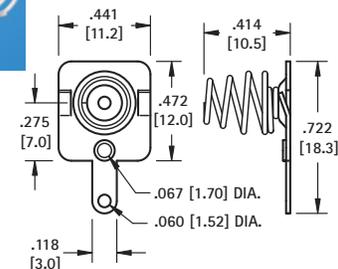
DUAL CONTACT ("AA" ONLY)



CAT. NO. 5210 Left

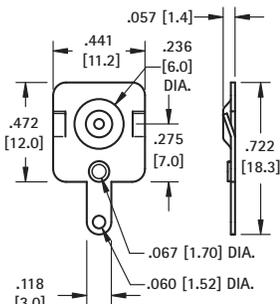
CAT. NO. 5211 Right (Shown)

(-) NEGATIVE SPRING WITH TAB/LANCE



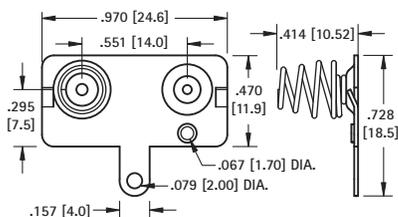
CAT. NO. 5220

(+) POSITIVE BUTTON WITH TAB/LANCE



CAT. NO. 5219

DUAL CONTACT WITH TAB ("AA" ONLY)



CAT. NO. 5218 Left

CAT. NO. 5217 Right (Shown)

BATTERY CONTACTS FOR MOLDED CASES

- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- "Solder Tab" design for either wire lead or PC mounting
- Unique spring contacts adjust to variations in battery lengths
- Reliable spring contacts assure low contact resistance and a dependable connection
- Space saving, economical, excellent mechanical construction

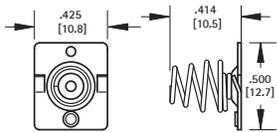


**MATERIAL:**

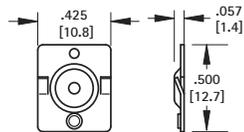
**Plate:** .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

Refer to page 42 for Battery Contact Layout & Mounting Details

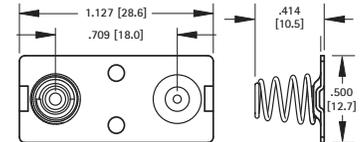
**"A" CELL**



**CAT. NO. 5222**

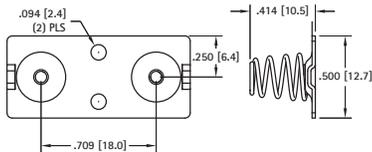


**CAT. NO. 5221**

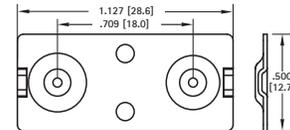


**CAT. NO. 5207**

- Parallel connection



**CAT. NO. 5215**

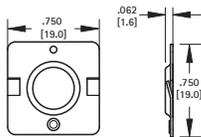


**CAT. NO. 5216**

**"C" CELL**



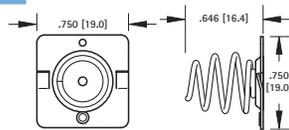
(+) POSITIVE BUTTON



**CAT. NO. 5240**



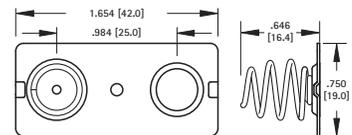
(-) NEGATIVE SPRING



**CAT. NO. 5241**



DUAL CONTACT

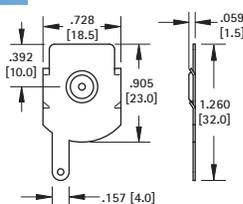


**CAT. NO. 5242**

**"D" CELL**



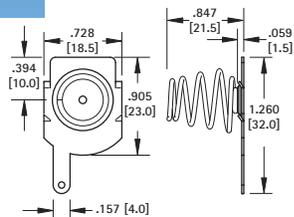
(+) POSITIVE BUTTON



**CAT. NO. 5250**



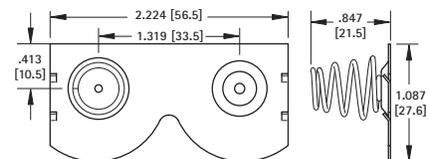
(-) NEGATIVE SPRING



**CAT. NO. 5251**



DUAL CONTACT



**CAT. NO. 5253** Left

**CAT. NO. 5252** Right (Shown)



# SNAP-ON LEAF CONTACTS



- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- Solder "ear" to facilitate soldering of wire lead
- Unique spring tension contact adjusts to variations in battery length
- Reliable spring tension contacts assure low contact resistance
- Clips easily onto .060 (1.52) to .070 (1.78) wall
- Sharp barbs securely anchor contact in place

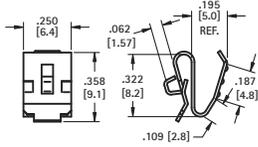
Operating Temperature: -50°F TO 185°F (-45°C TO 85°C)

Refer to page 42 for Battery Contact Layout & Mounting Details

## "AAAA" • "AAA" • "N" • "A23" • "A27"



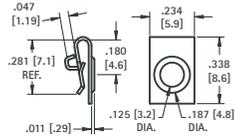
CAT. NO. 204



MATERIAL: .010 (.25) Spring Steel, Nickel Plate



CAT. NO. 238

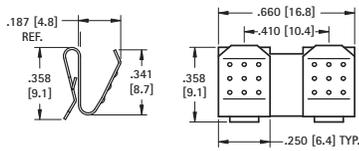


MATERIAL: .010 (.25) Stainless Steel, Nickel Plate

## "AAA"



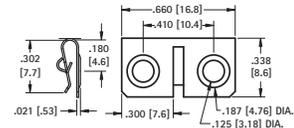
CAT. NO. 202



MATERIAL: .010 (.25) Spring Steel, Nickel Plate



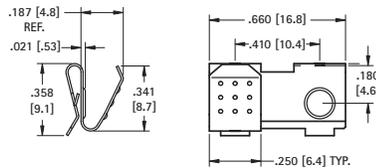
CAT. NO. 294



MATERIAL: .010 (.25) Stainless Steel, Nickel Plate



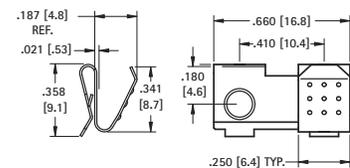
CAT. NO. 295



MATERIAL: .010 (.25) Spring Steel, Nickel Plate



CAT. NO. 296

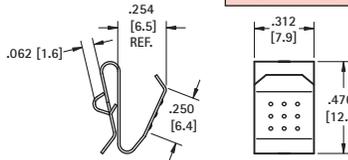


MATERIAL: .010 (.25) Spring Steel, Nickel Plate

## "AA" • "CR2" • "A" • "17500" • "18350" • "18650"



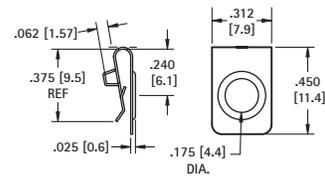
CAT. NO. 209



MATERIAL: 012 (.30) Spring Steel, Nickel Plate



CAT. NO. 228



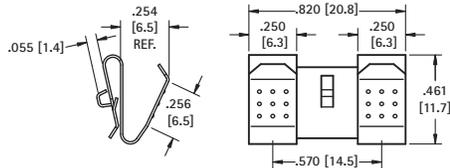
MATERIAL: 010 (.25) Stainless Steel, Nickel Plate

## "AA"

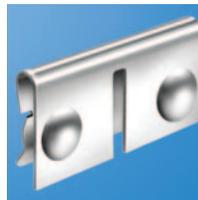


CAT. NO. 288

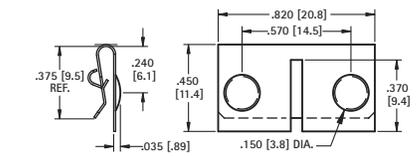
The (2) two leaf contacts are separate, allowing a divider between the batteries.



MATERIAL: 012 (.30) Spring Steel, Nickel Plate



CAT. NO. 292

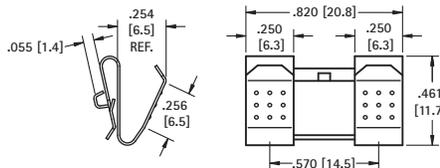


MATERIAL: 010 (.25) Stainless Steel, Nickel Plate



CAT. NO. 210

The (2) two leaf contacts are held together by a web. This design offers greater stability.

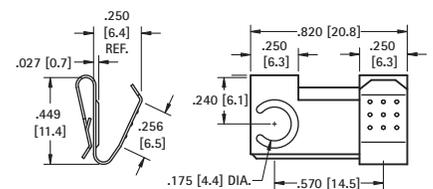


MATERIAL: .012 (.30) Spring Steel, Nickel Plate



CAT. NO. 291 Right

CAT. NO. 290 Left (shown)



MATERIAL: 012 (.30) Spring Steel, Nickel Plate

BATTERY CONTACTS FOR MOLDED CASES

# SNAP-ON COIL SPRING & BUTTON CONTACTS



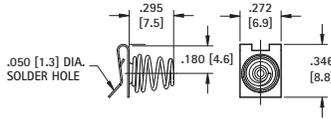
- Ideal for applications that have a self contained battery compartment
- Coil Springs will rebound after drop
- Reliable tension against battery help to assure low contact assistance

- Sharp barbs securely anchor contact in place
- Clips easily over .060 (1.5) to 0.70 (1.8) wall
- Long spring will accommodate variations in battery lengths

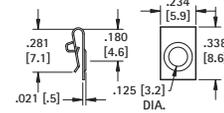
**MATERIAL:** Steel, Nickel Plate  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

Refer to page 42 for Battery Contact Layout & Mounting Details

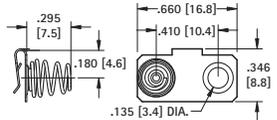
## “AAA”



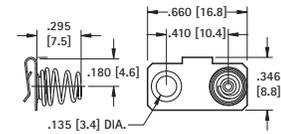
**CAT. NO. 267**



**CAT. NO. 238**

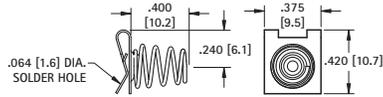


**CAT. NO. 299**

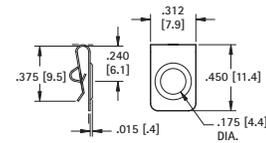


**CAT. NO. 287**

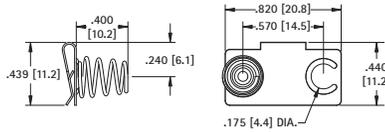
## “AA”



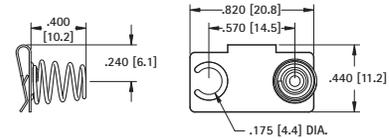
**CAT. NO. 289**



**CAT. NO. 228**



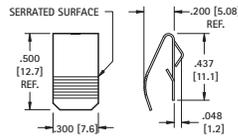
**CAT. NO. 297**



**CAT. NO. 293**

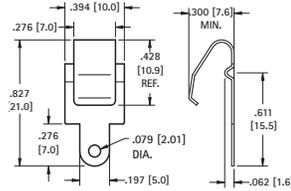
# SLIDE-IN MOUNT CONTACTS

## “AA” • “CR2” • “A” • “9V” • “17500” • “18350” • “18650”



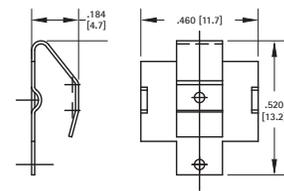
**CAT. NO. 5205**

**MATERIAL:** .012 (.30) Spring Steel, Nickel Plate



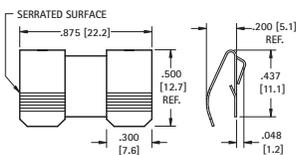
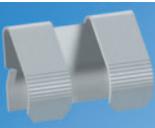
**CAT. NO. 5209**

**MATERIAL:** .012 (.30) Phosphor Bronze, Nickel Plate



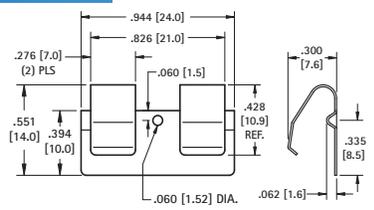
**MATERIAL:** .012 (.30) Spring Steel, Nickel Plate

**CAT. NO. 5233**



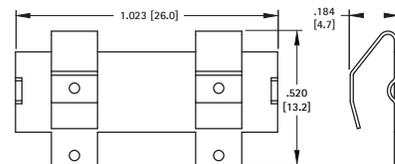
**CAT. NO. 5206**

**MATERIAL:** .012 (.30) Spring Steel, Nickel Plate



**CAT. NO. 5208**

**MATERIAL:** .012 (.30) Phosphor Bronze, Nickel Plate



**MATERIAL:** .012 (.30) Spring Steel, Nickel Plate

**CAT. NO. 5232**



# RUGGED STEEL BATTERY CLIPS

“AA” • “C” • “D”

Refer to page 41 for Battery Contact Layout & Mounting Details



Non-Insulated

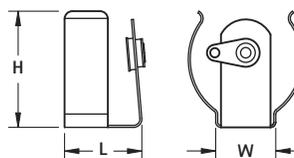
Base: Steel, Nickel Plate  
Contacts: Brass, Nickel Plate

- Available with and without insulated contact
- Non-Insulated contact will ground battery connection
- Insulated Contacts supplied with brass solder lug
- Ideal for creating custom battery holders



Insulated

CAT. NO.	FIGURE	L	W	H	CELL SIZE
99	Non-Insulated	.703 (17.9)	.359 (9.1)	.609 (15.5)	“AA”
100	Insulated				
86	Non-Insulated	.703 (17.9)	.606 (15.4)	.953 (24.2)	“C”
87	Insulated				
89	Non-Insulated	.780 (19.8)	.606 (15.4)	1.160 (29.5)	“D”
88	Insulated				



## ECONOMY CONTACTS

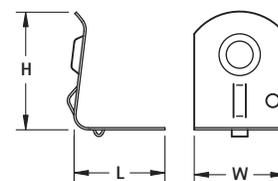
“AA” • “C” • “D”



Refer to page 41 for Battery Contact Layout & Mounting Details

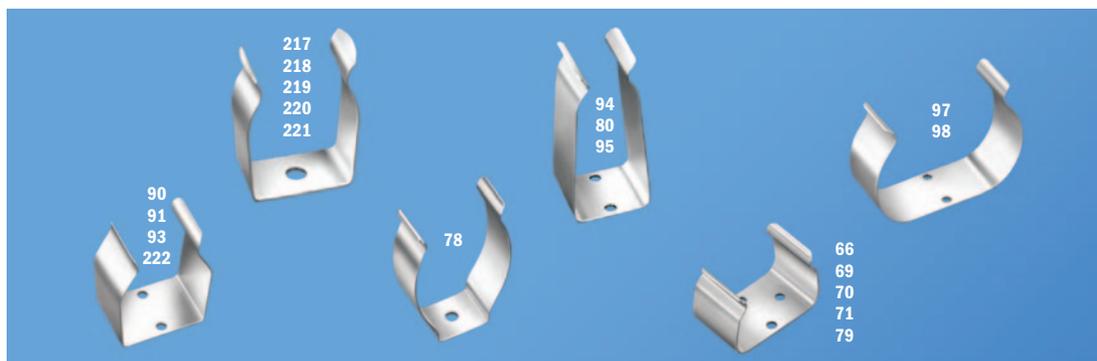
- Designed for mounting in self-contained, non-metallic battery compartments
- Reliable spring tension assures low contact resistance
- Recessed contact holds battery in place
- All clips have anti-rotation tab

CAT. NO.	L	W	H	CELL SIZE
206	.625 (15.9)	.375 (9.5)	.500 (12.7)	“AA”
207	.687 (17.4)	.375 (9.5)	.875 (22.2)	“C”
208	.750 (18.1)	.687 (17.5)	1.260 (32.0)	“D”



MATERIAL: .016 (.41) Spring Steel, Nickel Plate

## ALUMINUM & STEEL CLIPS



MATERIAL: Steel Clips: Spring Steel, Nickel Plate Aluminum Clips: 2024-T3

CAT. NO.	DESCRIPTION	MATERIAL
“AAAA” Cell (7.5 - 8.5mm Dia)		
251	One cell	Steel
“AAA” Cell (9.5 - 12mm Dia)		
90	One cell	Aluminum
“AA”, “CR2” Cell (13.5 - 17.0mm Dia)		
91	One cell	Aluminum
69	Two Cell	Steel
“A” Cell (16.0 - 18.0mm Dia)		
70	Two Cell	Aluminum

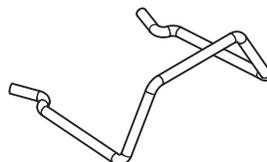
CAT. NO.	DESCRIPTION	MATERIAL
Sub C Cell (22.0 - 23.0mm Dia)		
221	One cell	Steel
C Cell (22.0 - 29.0mm Dia)		
222	One cell	Steel
93	One cell	Aluminum
97	Two Cell	Aluminum
D Cell (30.0 - 35.0mm Dia)		
94	One cell	Aluminum
78	One cell	Steel
98	Two Cell	Aluminum

CAT. NO.	DESCRIPTION	MATERIAL
NiCd Cell		
217	One cell, 35-38mm Dia.	Steel
218	One cell, 36-43mm Dia.	Steel
219	One cell, 51-64mm Dia.	Steel
9V Cell		
71	Horizontal, Low Profile	Steel
79	Horizontal	Steel
80	Vertical	Steel
95	Vertical	Aluminum
66	Horizontal, Lithium-Ion	Steel

## BATTERY RETAINER CLIPS



- Prevents battery from loosening in battery holder
- Retainer clip slips on the ears of the battery holder clip



CAT. NO.	CELL	CAN BE USED WITH CAT. NO.s
61	“AA”, “CR2”	91, 92, 95, 99, 100, 2915
62	“C”	86, 87, 93, 222
63	“D”	78, 88, 89, 94

# RUGGED BATTERY HOLDERS



An established design that has gained wide acceptance for commercial and military applications. Batteries are held under constant spring tension assuring low contact resistance. Retainer clips are available to lock batteries in place and prevent shifting or loosening. Refer to page 22. Recommended for use where shock or severe vibration is encountered. Special fabrication for more than four batteries or variations from standard stock parts can be assembled to meet your requirements.

### SPECIFICATIONS:

**Base:** Stainless Steel, Phenolic, Aluminum  
**Contacts:** Brass, Nickel Plate  
**Solder Lugs:** Brass, Tin Plate

## STEEL



FIG. 1 STEEL BASE



FIG. 2 STEEL, PHENOLIC BASE

## ALUMINUM



FIG. 1 ALUMINUM BASE



FIG. 2 ALUMINUM BASE

## CONNECTED IN SERIES

Features pre-connected jumper strap insulated from the Aluminum base. Batteries held in series circuit without need of additional wiring.

### SPECIFICATIONS:

**Base:** Aluminum  
**Contacts:** Brass, Nickel Plate  
**Solder Lugs:** Brass, Tin Plated Jumper, Brass, Nickel Plate



2 CELL



3 CELL

CAT. NO.	HOLDS NO. OF CELLS
<b>"AA" CELL</b>	
146	2
147	3
148	4
<b>"C" CELL</b>	
149	2
150	3
151	4
<b>"D" CELL</b>	
152	2
153	3
158	4
DL223A - 6 Volt	
223	1

## WITH PC PINS

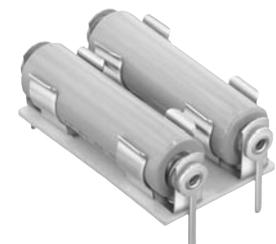
For printed circuitry we have standardized our most popular holders with PC Lugs. Choice of single or multiple holders "AA" assembled with PC solder lugs.

### SPECIFICATIONS:

**Base:** Steel, Phenolic or Aluminum  
**Contacts:** Brass, Nickel Plate  
**Solder Lugs:** Brass, Tin Plate Jumper, Brass, Nickel Plate



ALUMINUM



STEEL

ALUMINUM HOLDERS	HOLDS NO. OF CELLS	STEEL HOLDERS
CAT. NO.		CAT. NO.
<b>"AA" CELL</b>		
2222	1	2228
2223	2	2229
<b>"C" CELL</b>		
2224	1	2230
2225	2	2231
<b>"D" CELL</b>		
2226	1	2232
2227	2	2233
<b>"1/2AA" CELL</b>		
—	1	2103
<b>"2/3A" CELL</b>		
131	1	—
DL223A - 6 Volt		
224	1	—

\*Dual cell, Steel holders will have Phenolic base

STEEL HOLDERS		HOLDS NO. OF CELLS	FIG. NO.	ALUMINUM HOLDERS	
ONE CONTACT INSULATED CAT. NO.	ALL CONTACTS INSULATED CAT. NO.			ALL CONTACTS INSULATED CAT. NO.	
<b>"AAA" CELL</b>					
—	—	1	1	—	137
—	—	2	1	—	138
—	—	3	1	—	169
—	—	4	1	—	170
<b>"AA" CELL</b>					
1139	2139	1	1	—	139
1189	2189	2	1	—	140
—	2140*	2	2	—	189
1191	2191	3	1	—	171
—	2171*	3	2	—	—
1194	2194	4	1	—	182
—	2182*	4	2	—	192
—	—	6	2	—	193
<b>"C" CELL</b>					
1173	2173	1	1	—	173
1185	2185	2	1	—	174
—	2174*	2	2	—	185
1195	2195	3	1	—	187
—	2187*	3	2	—	—
1198	2198	4	1	—	—
—	2188*	4	2	—	196
—	—	6	2	—	197
<b>"D" CELL</b>					
1175	2175	1	1	—	175
1186	2186	2	1	—	176
—	2176*	2	2	—	186
1199	2199	3	1	—	190
—	2190*	3	2	—	—
1162	2162	4	1	—	—
—	2192*	4	2	—	200
—	—	6	2	—	201
<b>"1/2 AA" LITHIUM CELL</b>					
—	1103	1	1	—	—
<b>LITHIUM "2/3 A" OR "CR123" BATTERY</b>					
—	—	1	1	—	132

# THM LOW PROFILE LITHIUM-ION & ALKALINE CELL HOLDERS

"1/3N" · "AAA" · "1/2AA" · "CR2" · "AA" · "2/3A"

## FEATURES

- Snap-In PC contact holds firmly in position for wave soldering
- Tin Nickel contacts for excellent solderability and durability
- Polarity clearly marked for orientation
- Snap-on retainer cover (optional) retains battery securely to withstand shock and vibration. Helps protect against shorting

## APPLICATIONS

- Computer memory, power backup systems
- Telecommunications
- Residential, industrial and commercial security systems
- PLC and industrial controls

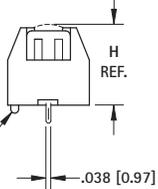
RETAINER COVERS



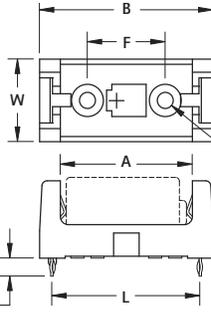
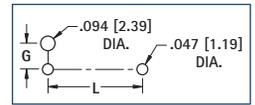
## THM LOW PROFILE



108C  
1028C  
1029LC  
RETAINER COVERS



Mounting Detail

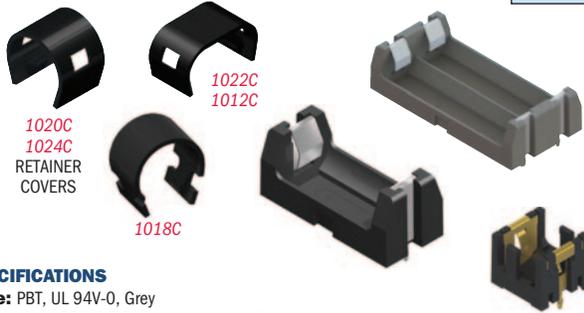


## SPECIFICATIONS

Base/Retainer Cover: PBT, UL 94V-0  
Contacts: .012 (.30) Stainless Steel, Tin-Nickel Plate  
Operating Temp Range: -60°F to +293°F (-50°C to +145°C)

HOLDER	COVER								CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
CAT. NO.	CAT. NO.	L	W	H (Ref. Dim)	A	B	F	G			
108	108C	1.160 (29.5)	.640 (16.3)	.633 (16.1)	1.030 (26.2)	1.360 (34.5)	.610 (15.5)	.279 (7.1)	"1/2 AA" "CR2"	50 pieces per tray Energizer 544, CR2, Duracell PX28L, CR2, Kodak K28A & KS28, CR2, Panasonic CR14250, CR2, Saft LCP3, Maxell 4LR44, CR2, Sanyo CR14250SE, CR2	
1028	1024C 1028C	2.160 (54.9)	.640 (16.3)	.633 (16.1)	2.040 (51.8)	2.360 (59.9)	1.610 (40.9)	.279 (7.1)	"AA"	50 pieces per tray Energizer, Duracell, Panasonic, Sanyo, Varta, Rayovac, Tadiran	
1029	1029C 1029LC	1.500 (38.1)	.720 (18.3)	.712 (18.1)	1.375 (34.9)	1.700 (43.2)	.950 (24.1)	.320 (8.1)	"2/3 A"	50 pieces per tray Duracell DL2/3A, Kodak K123L, Panasonic CR123A, Saft 450SC & VR0450, Sanyo CR17335SE	

## THM ULTRA LOW PROFILE



1020C  
1024C  
RETAINER COVERS

1022C  
1012C

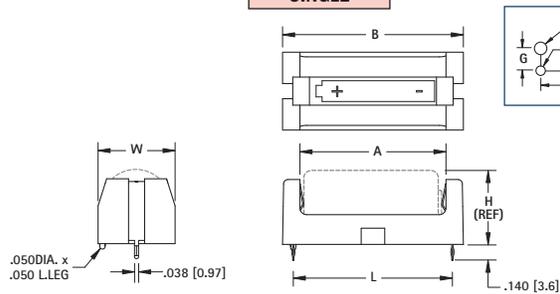
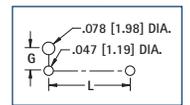
1018C

## SPECIFICATIONS

Base: PBT, UL 94V-0, Grey  
Contacts: .012 (.30) Stainless Steel, Tin-Nickel Plate  
Operating Temp Range: -60°F to +293°F (-50°C to +145°C)

## SINGLE

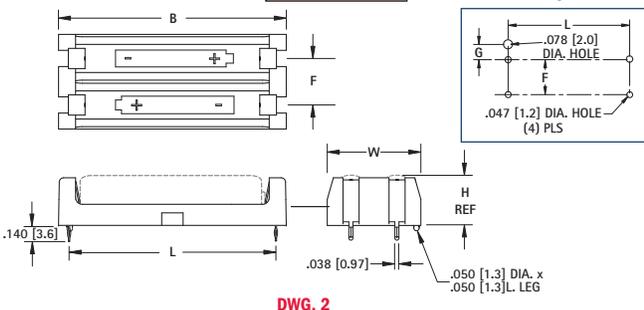
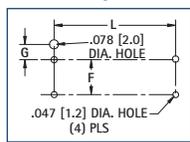
Mounting Detail



DWG. 1

## DUAL

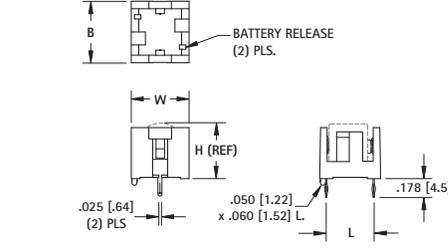
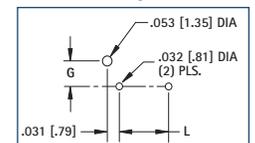
Mounting Detail



DWG. 2

## "1/3N"

Mounting Detail



Contacts: .012 (.30) Phosphor Bronze, Gold Plate

DWG. 3

HOLDER	COVER								CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
CAT. NO.	CAT. NO.	DWG NO.	L	W	H (Ref. Dim)	B	F	G			
1021	1020C	1	1.933 (49.1)	.500 (12.7)	.445 (11.3)	2.140 (54.4)	-	.209 (5.3)	"AAA"	50 pieces per tray	
1023	1022C	2	1.933 (49.1)	.875 (22.2)	.445 (11.3)	2.140 (54.4)	.430 (10.9)	.182 (4.6)	"AAA"	25 pieces per tray	
1015	1024C	1	2.161 (54.9)	.612 (15.5)	.603 (15.3)	2.359 (59.9)	-	.265 (6.7)	"AA"	50 pieces per tray	
1013*	1012C	2	2.161 (54.9)	1.180 (30.0)	.603 (15.3)	2.359 (59.9)	.568 (14.4)	.265 (6.7)	"AA"	25 pieces per tray	
1017	1024C	1	1.156 (29.4)	.612 (15.5)	.603 (15.3)	1.360 (34.5)	-	.265 (6.7)	"1/2 AA"	50 pieces per tray	
1019*	1018C	1	1.487 (37.8)	.720 (18.3)	.682 (17.3)	1.690 (42.9)	-	.319 (8.1)	"2/3 A"	50 pieces per tray	
1099*	-	2	1.487 (37.8)	1.440 (36.6)	.682 (17.3)	1.690 (42.9)	.720 (18.3)	.319 (8.1)	"2/3 A"	25 pieces per tray	
503	-	3	.450 (11.4)	.540 (13.7)	.506 (12.9)	.570 (14.5)	-	.240 (6.1)	"1/3 N"	300 pieces per tray	

# SMT LOW PROFILE LITHIUM-ION & ALKALINE CELL HOLDERS



"1/3N" · "AAA" · "1/2AA" · "AA" · "2/3A"

## FEATURES

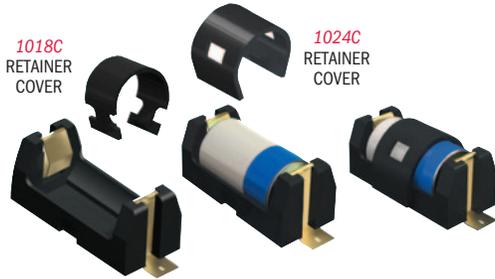
- Low profile surface mount holders for Cylindrical Lithium and Alkaline batteries
- UL 94V-0 Heat resistant Nylon Housings well suited for reflow soldering
- Designed for vacuum pick and place assembly
- Gold-plated Phosphor Bronze contacts assure low contact resistance and are readily solderable

- Ideal for both lead free solder and traditional solder process
- Battery installation and removal does not require tools
- Securely holds battery in place
- Polarity clearly marked for orientation
- Operating temp range: -60°F to +293°F (-50°C to +145°C)

## APPLICATIONS

- Computer memory, power backup systems
- Telecommunications
- Residential, industrial and commercial security systems
- PLC and industrial controls

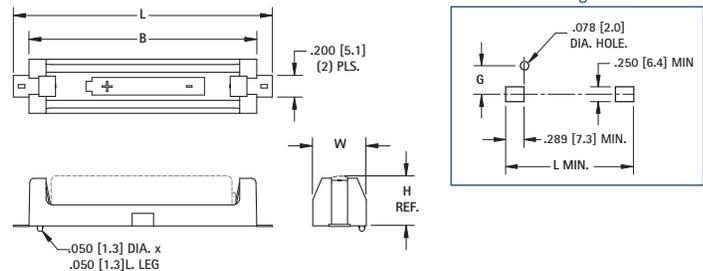
### SMT ULTRA LOW PROFILE



## SPECIFICATIONS

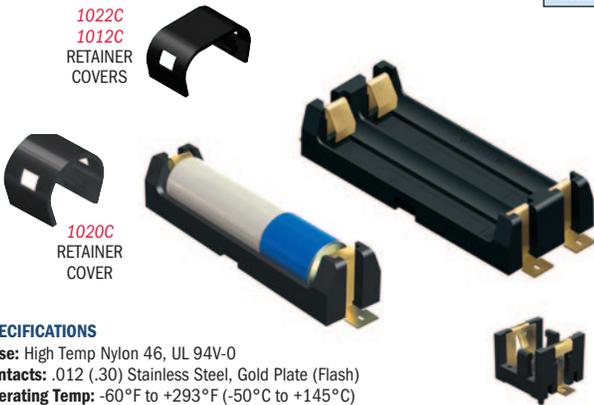
Base: High Temp Nylon 46, UL 94V-0

Contacts: .012 (.30) Stainless Steel, Gold Plate (Flash)



CAT. NO.	COVER	L	W	H (REF)	B	G	CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
1016	1024C	1.723 (43.8)	.612 (15.5)	.603 (15.3)	1.360 (34.5)	.265 (6.7)	"1/2AA"	50 pieces per tray	Energizer 544, Duracell PX28L, Kodak K28A & KS28, Panasonic CR14250, Saft LCP3, Maxell
1024	1024C	2.711 (68.9)	.612 (15.5)	.603 (15.3)	2.359 (59.9)	.265 (6.7)	"AA"	50 pieces per tray	Energizer, Duracell, Panasonic, Sanyo, Varta, Rayovac, Tadiran,
1018	1018C	2.062 (52.3)	.720 (18.3)	.682 (17.3)	1.690 (42.9)	.319 (8.1)	"2/3A"	50 pieces per tray	Duracell DL2/3A, Kodak K123L, Saft 450SC & VR0450, Sanyo CR17335SE

### SMT ULTRA LOW PROFILE



## SPECIFICATIONS

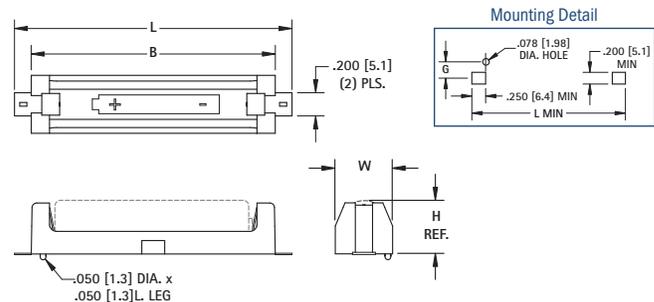
Base: High Temp Nylon 46, UL 94V-0

Contacts: .012 (.30) Stainless Steel, Gold Plate (Flash)

Operating Temp: -60°F to +293°F (-50°C to +145°C)

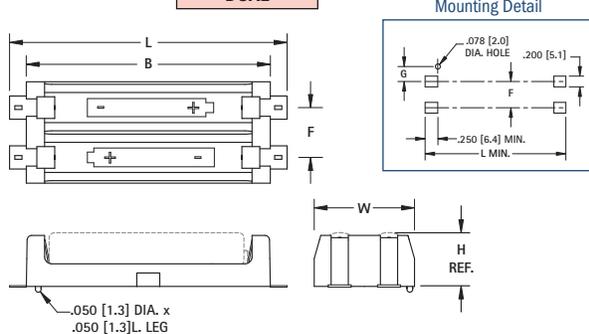
Packaging Spec's: Supplied in trays

### SINGLE



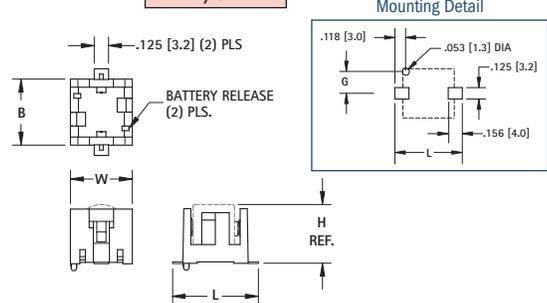
DWG 1

### DUAL



DWG 2

### "1/3N"



Contacts: .012 (.30) Phosphor Bronze, Gold Plate (Flash)

DWG 3

CAT. NO.	COVER	DWG NO.	L	W	H (REF)	B	F	G	CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
1020	1020C	1	2.421 (61.5)	.500 (12.7)	.445 (11.3)	2.140 (54.4)	-	.209 (5.3)	"AAA"	50 pieces per tray	All Major Manufacturers
1022	1022C	2	2.421 (61.5)	.875 (22.2)	.445 (11.3)	2.140 (54.4)	.430 (10.9)	.182 (4.6)	"AAA"	25 pieces per tray	
1024	1024C	1	2.711 (68.9)	.612 (15.5)	.603 (15.3)	2.359 (59.9)	-	.265 (6.7)	"AA"	50 pieces per tray	All Major Manufacturers
1012	1012C	2	2.711 (68.9)	1.180 (30.0)	.603 (15.3)	2.359 (59.9)	.568 (14.4)	.265 (6.7)	"AA"	25 pieces per tray	
1018	1018C	1	2.062 (52.3)	.720 (18.3)	.682 (17.3)	1.690 (42.9)	-	.319 (8.1)	"2/3A"	50 pieces per tray	Duracell DL2/3A, Kodak K123L, Saft 450SC & VR0450 Sanyo CR17335SE
1100	-	2	2.062 (52.3)	1.440 (36.6)	.682 (17.3)	1.690 (42.9)	.720 (18.3)	.319 (8.1)	"2/3A"	25 pieces per tray	
498	-	3	.748 (19.0)	.540 (13.7)	.506 (12.9)	.570 (14.5)	-	.240 (6.1)	"1/3N"	300 pieces per tray	Duracell DL1/3N, Sanyo K58L, Energizer CR1/3N



# SMT & THM POLARIZED LITHIUM-ION & ALKALINE CELL HOLDERS

RETAINER  
COVERS



## FEATURES

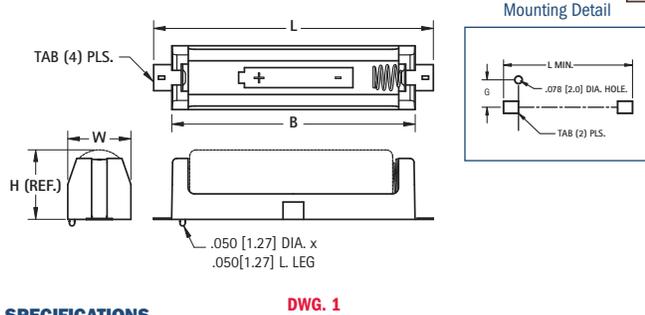
- UL 94V-0 Heat resistant nylon housing well suited for reflow and wave soldering operations
- Coil Spring will rebound after severe shock load
- Polarized holder offers circuit protection against improper battery installation
- Ideal for both lead free and traditional solder processes
- Operating temp range: -60°F to 293°F (-50°C to 145°C)

## APPLICATIONS:

- Computer memory, power backup systems
- Telecommunications
- Residential, Industrial and commercial security systems
- PLC and industrial controls

SMT & THM COIL SPRING BATTERY HOLDERS

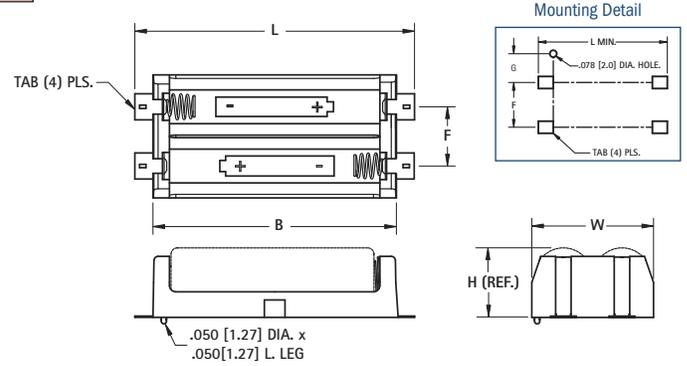
## SMT



DWG. 1

## SPECIFICATIONS

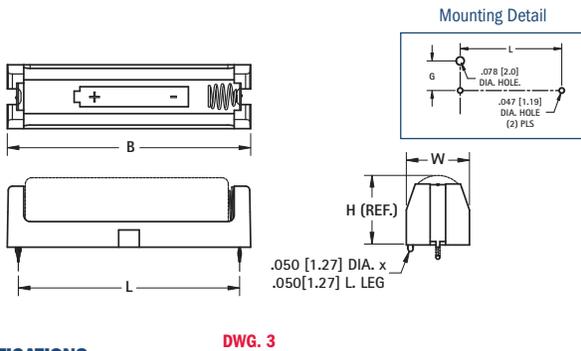
**Base:** High Temp Nylon 46 - UL94V-0  
**Contacts:** .012 (.30) Stainless Steel .020 (0.50) Dia. Music Wire - Gold Plate (Flash)  
**Operating Temp Range:** -60°F to 293°F (-50°C to 145°C)  
**Packaging Spec's:** Supplied in trays



DWG. 2

HOLDER	COVER								CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
CAT. NO.	COVER	DWG NO.	L	W	H (Ref. Dim)	B	F	G			
1076	1020C	1	2.421 (61.5)	.500 (12.7)	.445 (11.3)	2.140 (54.4)	-	.209 (5.3)	"AAA"	50 pieces per tray	All Major Manufacturers
1078	1022C	2	2.421 (61.5)	.875 (22.2)	.445 (11.3)	2.140 (54.4)	.430 (10.9)	.182 (4.6)	"AAA"	25 pieces per tray	All Major Manufacturers
1088	1024C	1	2.711 (68.9)	.612 (15.5)	.603 (15.3)	2.359 (59.9)	-	.265 (6.7)	"AA"	50 pieces per tray	All Major Manufacturers
1090	1012C	2	2.711 (68.9)	1.180 (30.0)	.603 (15.3)	2.359 (59.9)	.568 (14.4)	.265 (6.7)	"AA"	25 pieces per tray	All Major Manufacturers
1126	1024C	1	1.723 (43.8)	.612 (15.5)	.603 (15.3)	1.360 (34.5)	-	.265 (6.7)	"1/2 AA"	50 pieces per tray	Energizer 544, Duracell PX28L, Kodak K28A & KS28, Saft LCP3, Maxell 4LR44, Sanyo CR14250SE
1128	1018C	1	2.062 (52.3)	.720 (18.3)	.682 (17.3)	1.690 (42.9)	-	.319 (8.1)	"CR123A"	50 pieces per tray	Duracell DL2/3A, Kodak K123L, Panasonic CR123A, Saft 450SC & VR0450
1014	-	2	2.062 (52.3)	1.440 (36.6)	.682 (17.3)	1.690 (42.9)	.720 (18.3)	.319 (8.1)	"CR123A"	25 pieces per tray	Sanyo CR17335SE

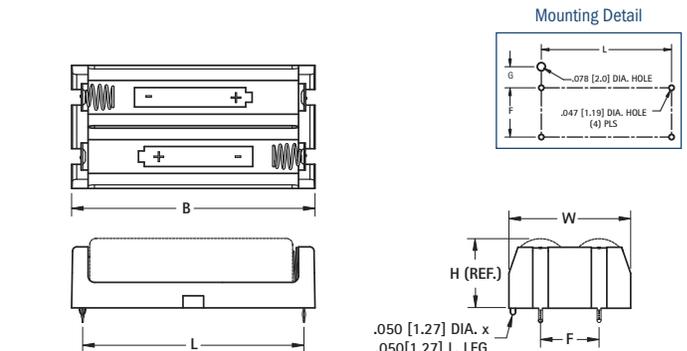
## THM



DWG. 3

## SPECIFICATIONS

**Base:** PBT - UL94V-0, Grey  
**Contacts:** .012 (.30) Stainless Steel .020 (0.50) Dia. Music Wire - Nickel Plate  
**Packaging Spec's:** Supplied in trays



DWG. 4

HOLDER	COVER								CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
CAT. NO.	COVER	DWG NO.	L	W	H (Ref. Dim)	B	F	G			
1075	1020C	3	1.933 (49.1)	.500 (12.7)	.445 (11.3)	2.140 (54.4)	-	.209 (5.3)	"AAA"	50 pieces per tray	All Major Manufacturers
1077	1022C	4	1.933 (49.1)	.875 (22.2)	.445 (11.3)	2.140 (54.4)	.430 (10.9)	.182 (4.6)	"AAA"	25 pieces per tray	All Major Manufacturers
1087	1024C	3	2.145 (54.5)	.612 (15.5)	.603 (15.3)	2.359 (59.9)	-	.265 (6.7)	"AA"	50 pieces per tray	All Major Manufacturers
1089*	1012C	4	2.145 (54.5)	1.180 (30.0)	.603 (15.3)	2.359 (59.9)	.568 (14.4)	.265 (6.7)	"AA"	25 pieces per tray	All Major Manufacturers
1127	1024C	3	1.156 (29.4)	.612 (15.5)	.603 (15.3)	1.360 (34.5)	-	.265 (6.7)	"1/2 AA"	50 pieces per tray	Energizer 544, Duracell PX28L, Kodak K28A & KS28, Saft LCP3, Maxell 4LR44, Sanyo CR14250SE
1129*	1018C	3	1.487 (37.8)	.720 (18.3)	.682 (17.3)	1.690 (42.9)	-	.319 (8.1)	CR123A	50 pieces per tray	Duracell DL123A, Kodak K123LA, Panasonic CR123A, Varta CR1213A, Sanyo CR123A
1055*	-	4	1.487 (37.8)	1.440 (36.6)	.682 (17.3)	1.690 (42.9)	.720 (18.3)	.319 (8.1)	CR123A	25 pieces per tray	Varta CR1213A, Sanyo CR123A

# THM & SMT POLARIZED "CR2" • "CR123A" CELL HOLDERS



## FEATURES

- Battery installation and removal does not require tools
- UL 94V-0 Heat resistant Nylon Housings well suited for reflow or wave soldering
- Securely holds battery in place
- Polarized holder offers circuit protection against improper battery installation

## APPLICATIONS

- Computer memory, power backup systems
- Telecommunications/Security Systems
- PLC and industrial controls

## SPECIFICATIONS

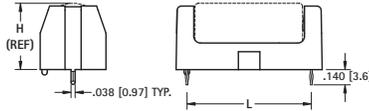
Base: THM, PBT, UL94V-0; SMT, High Temp Nylon 46, UL94V-0  
 Operating Temp Range: -60°F to 293°F (-50°C to 145°C)

Contacts: .012 (.30) Stainless Steel, Gold Plate (Flash) - SMT  
 Contacts: .012 (.30) Stainless Steel, Tin-Nickel Plate - THM

### THM



Thru-Hole Mount (THM)

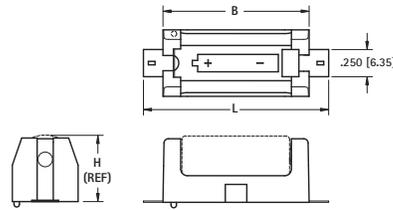


1018C  
RETAINER  
COVER  
FITS ALL  
HOLDERS

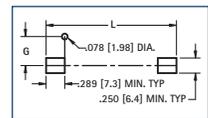
### SMT



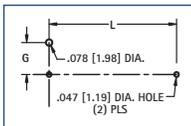
Surface Mount (SMT)



Mounting Detail



Mounting Detail



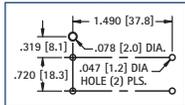
CAT. NO.	COVER	MOUNTING STYLE	L	W	H (Ref)	B	G	CELL SIZE	PACKAGING SPEC'S
1010	1024C	SMT	1.723 (43.8)	.612 (15.5)	.661 (16.8)	1.360 (34.5)	.265 (6.7)	CR2	50 pieces per tray
1011	1024C	THM	1.156 (29.4)						
1050	1018C	SMT	2.062 (52.4)	.720 (18.3)	.712 (18.1)	1.690 (42.9)	.319 (8.1)	CR123A	
1051*	1018C	THM	1.487 (37.8)						

\*Base material: PBT UL 94V-0

### THM DUAL CR123A



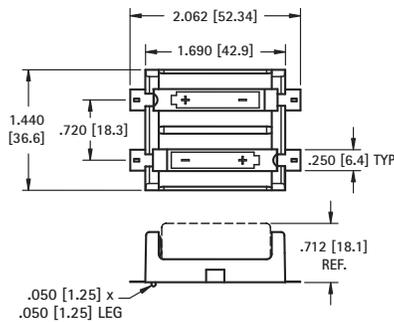
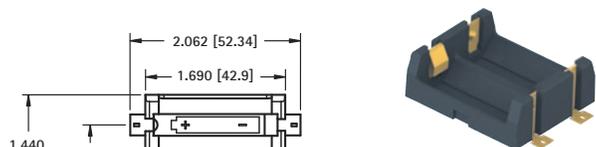
Mounting Detail



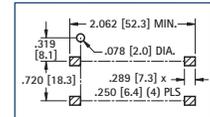
CAT. NO. 1079\*

\*Base material: PBT UL 94V-0 Grey

### SMT DUAL CR123A



Mounting Detail



CAT. NO. 1080

Packaging Spec's: 25 pieces per tray

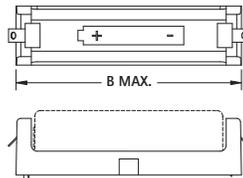
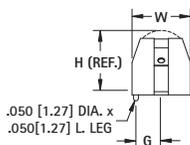
## IN-LINE LITHIUM-ION & ALKALINE HOLDERS

### SINGLE

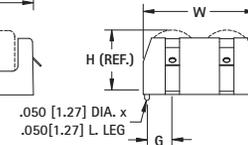
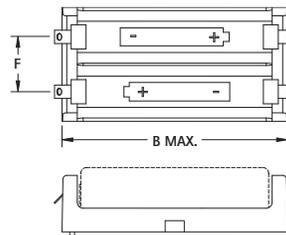
## SPECIFICATIONS

Contacts: .012 (.30) Phosphor Bronze, Tin-Nickel Plate  
 Base: PBT, UL Rated 94V-0, Grey

### DUAL



DWG. 1



DWG. 2

HOLDER	COVER	DWG NO.	W	H	B	F	G	CELL SIZE	BATTERY CROSS REFERENCE
1115	1024C	1	.612 (15.5)	.603 (15.3)	2.359 (59.9)		.265 (6.7)	"AA"	Energizer, Duracell, Panasonic, Sanyo, Varta, Rayovac, Tadiran
1114	1012C	2	1.180 (30.0)	.603 (15.3)	2.359 (59.9)	.568 (14.4)	.265 (6.7)	"AA"	Energizer, Duracell, Panasonic, Sanyo, Varta, Rayovac, Tadiran
1117	1024C	1	.612 (15.5)	.603 (15.3)	1.360 (34.5)		.265 (6.7)	"1/2 AA"	Energizer 544, Duracell PX28L, Kodak K28A & KS28, Saft LCP3, Maxell 4LR44, Sanyo CR14250SE
1119	1018C	1	.720 (18.3)	.682 (17.3)	1.690 (42.9)		.319 (8.1)	"2/3 A"	Duracell DL2/3A, Kodak K123L, Saft 450SC & VR0450
1120	—	2	1.440 (36.6)	.682 (17.3)	1.690 (42.9)	.720 (18.3)	.319 (8.1)	"2/3 A"	Sanyo CR17335SE



# "18350" LITHIUM-ION BATTERY HOLDERS

Leaf Springs



1095\*

Leaf Spring Polarized



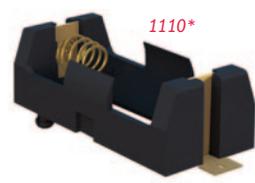
1095P\*

Leaf Spring Solder Lugs



1101\*

Coil Spring Polarized



1110\*

## FEATURES

- Low profile surface mount holder for Cylindrical Lithium and alkaline batteries
- UL 94V-0 heat resistant nylon housing well suited for reflow soldering
- Battery installation and removal does not require tools
- Securely holds battery in place

- Accommodates cells with or without built-in PCB protection circuits
- Polarity clearly marked for orientation
- Polarized holders available for protection against improper battery installation

\*Dual Cell Not Shown

## SPECIFICATIONS

**Operating Temp Range:**  
-60°F to +293°F (-50°C to +145°C)  
**Base:** High Temp Nylon 46, UL 94V-0  
**Contacts:** Stainless Steel/Music Wire  
SMT - Gold Plate (Flash)  
THM - Tin-Nickel Plate

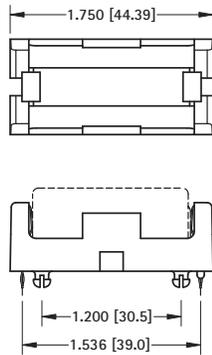
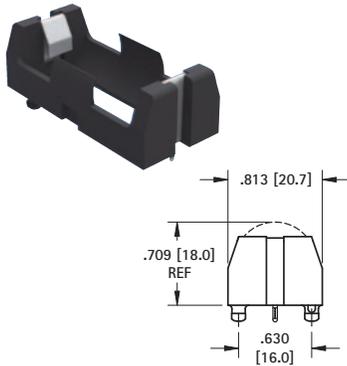


PC Battery Clip Available See Page 13.

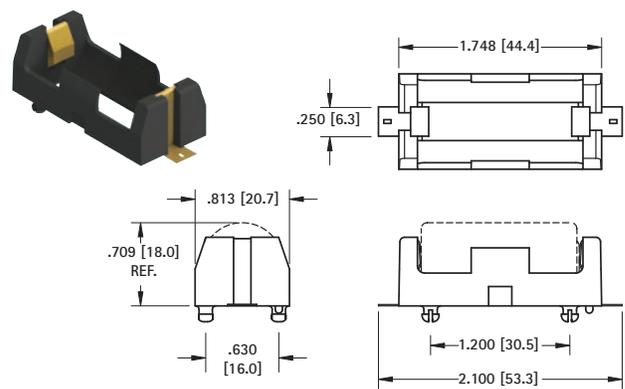
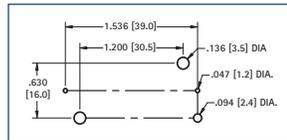
## THRU HOLE MOUNT

## SURFACE MOUNT

### SINGLE CELL



Mounting Detail

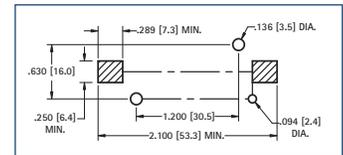


## SPECIFICATIONS

**Base:** High Temp Nylon 46, UL 94V-0  
**Contacts:** .012 (.30) Stainless Steel, Gold Plate (Flash)

- CAT. NO. 1096** Leaf Springs
  - CAT. NO. 1096P** Leaf Spring Polarized
  - CAT. NO. 1110** Coil Spring Polarized
- Packaging Spec's: 50 pieces per tray

Pad Layout

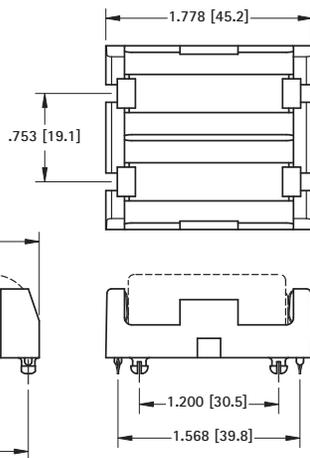
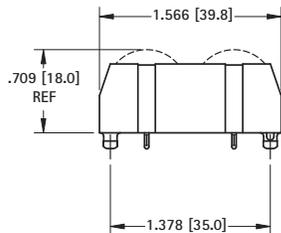


## SPECIFICATIONS

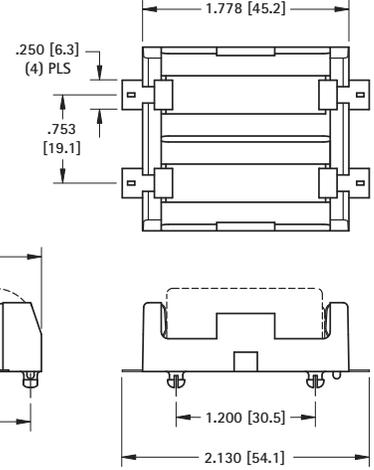
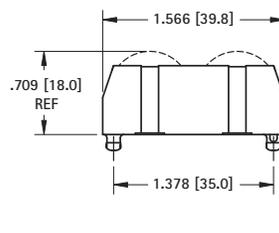
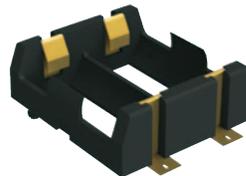
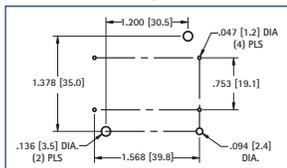
**Base:** PBT, UL 94V-0, Grey  
**Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

- CAT. NO. 1095** Leaf Springs
  - CAT. NO. 1095P** Leaf Spring Polarized
  - CAT. NO. 1111** Coil Spring Polarized
  - CAT. NO. 1101** Solder Lugs
- Packaging Spec's: 50 pieces per tray

### DUAL CELL



Mounting Detail

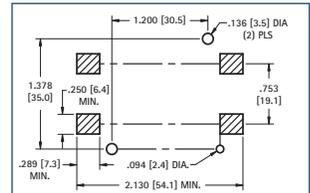


## SPECIFICATIONS

**Base:** High Temp Nylon 46, UL 94V-0  
**Contacts:** .012 (.30) Stainless Steel, Gold Plate (Flash)

- CAT. NO. 1098** Leaf Springs
  - CAT. NO. 1098P** Leaf Spring Polarized
  - CAT. NO. 1136** Coil Spring Polarized
- Packaging Spec's: 25 pieces per tray

Pad Layout



## SPECIFICATIONS

**Base:** PBT, UL 94V-0, Grey  
**Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

- CAT. NO. 1097** Leaf Springs
  - CAT. NO. 1097P** Leaf Spring Polarized
  - CAT. NO. 1137** Coil Spring Polarized
  - CAT. NO. 1102** Solder Lugs
- Packaging Spec's: 25 pieces per tray

"18350" LITHIUM-ION BATTERY HOLDERS

# "18650" LITHIUM-ION BATTERY HOLDERS



## Leaf Springs



1043\*

## Leaf Spring Polarized



1043P\*

## Leaf Spring Solder Lugs



1044\*

## Coil Spring Polarized



1130\*

### FEATURES

- Low profile surface mount holder for Cylindrical Lithium and alkaline batteries
- UL 94V-0 heat resistant nylon housing well suited for reflow soldering
- Battery installation and removal does not require tools
- Securely holds battery in place

- Accommodates cells with or without built-in PCB protection circuits
- Polarity clearly marked for orientation
- Polarized holders available for protection against improper battery installation

\*Dual Cell Not Shown

### SPECIFICATIONS

- Operating Temp Range:** -60°F to +293°F (-50°C to +145°C)
- Base:** High Temp Nylon 46, UL 94V-0
- Contacts:** Stainless Steel/Music Wire  
SMT - Gold Plate (Flash)  
THM - Tin-Nickel Plate

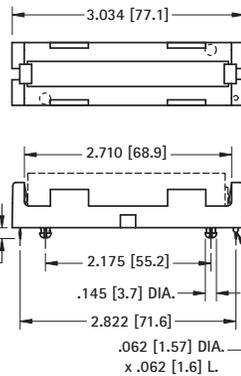
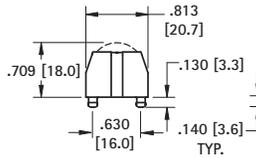


PC Battery Clip Available See Page 13.

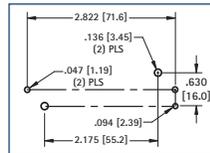
## THRU HOLE MOUNT

## SURFACE MOUNT

### SINGLE CELL



#### Mounting Detail



### SPECIFICATIONS

- Base:** PBT, UL 94V-0, Grey
- Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

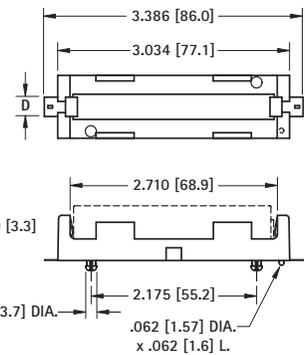
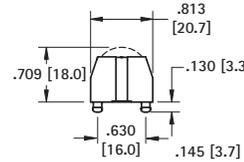
**CAT. NO. 1043** Leaf Springs

**CAT. NO. 1043P** Leaf Spring Polarized

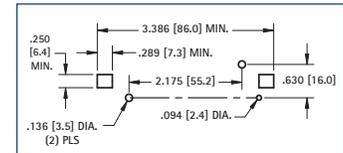
**CAT. NO. 1131** Coil Spring Polarized

**CAT. NO. 1044** Solder Lugs

**Packaging Spec's:** 50 pieces per tray



#### Pad Layout



### SPECIFICATIONS

- Base:** High Temp Nylon 46, UL 94V-0
- Contacts:** .012 (.30) Stainless Steel, Gold Plate (Flash)

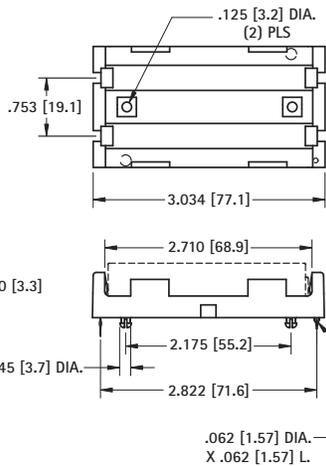
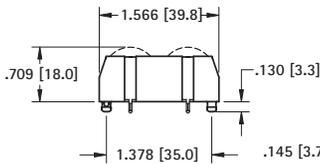
**CAT. NO. 1042** Leaf Springs

**CAT. NO. 1042P** Leaf Spring Polarized

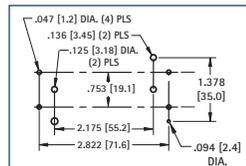
**CAT. NO. 1130** Coil Spring Polarized

**Packaging Spec's:** 50 pieces per tray

### DUAL CELL



#### Mounting Detail



### SPECIFICATIONS

- Base:** PBT, UL 94V-0, Grey
- Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

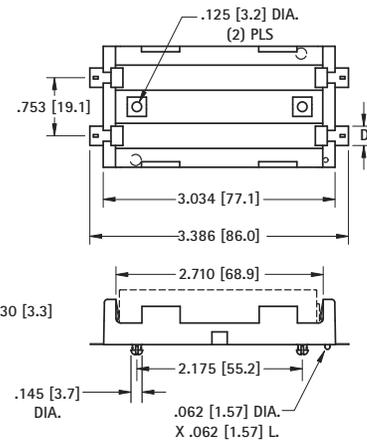
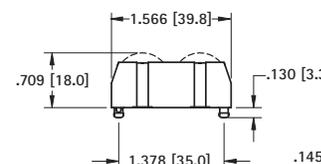
**CAT. NO. 1049** Dual Springs

**CAT. NO. 1049P** Leaf Spring Polarized

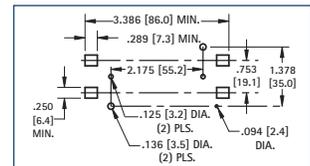
**CAT. NO. 1135** Coil Spring Polarized

**CAT. NO. 1047** Solder Lugs

**Packaging Spec's:** 25 pieces per tray



#### Pad Layout



### SPECIFICATIONS

- Base:** High Temp Nylon 46, UL 94V-0
- Contacts:** .012 (.30) Stainless Steel, Gold Plate (Flash)

**CAT. NO. 1048** Dual Springs

**CAT. NO. 1048P** Leaf Spring Polarized

**CAT. NO. 1134** Coil Spring Polarized

**Packaging Spec's:** 25 pieces per tray



# 20700 & 21700 CELL HOLDERS

## FEATURES

- Battery installation and removal does not require tools
- UL 94V-0 Heat resistant Nylon Housings well suited for reflow or wave soldering
- Securely holds battery in place

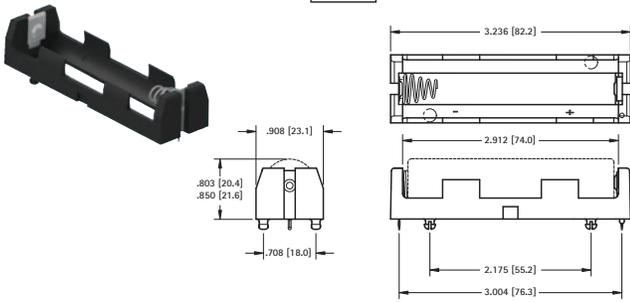
## APPLICATIONS

- Computer memory, power backup systems
- Telecommunications/Security Systems
- PLC and industrial controls

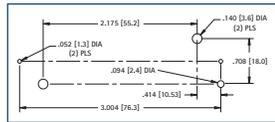
## SPECIFICATIONS

**Base:** High Temp Nylon 46, UL Rated 94V-0  
**Operating Temp Range:** -60°F to 293°F (-50°C to 145°C)  
**Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

THM

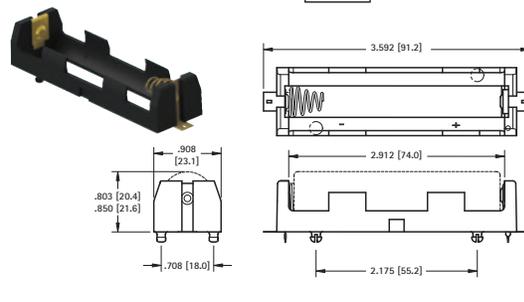


Mounting Detail

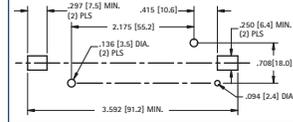


CAT. NO. 1121 Polarized

SMT

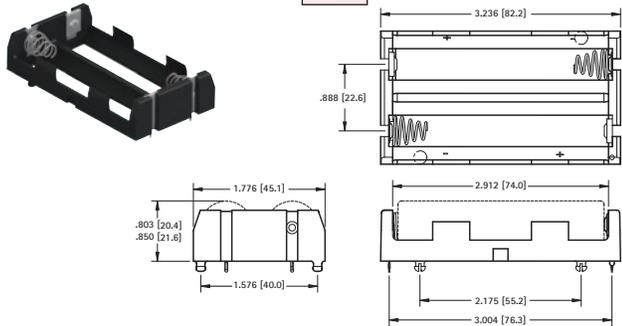


Mounting Detail

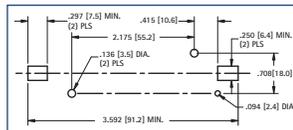


CAT. NO. 1122 Polarized

THM

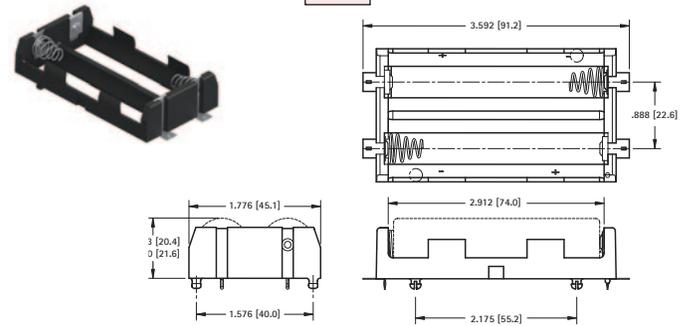


Mounting Detail

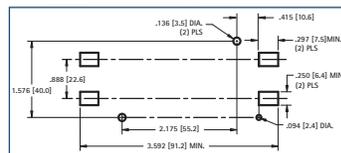


CAT. NO. 1123 Polarized

SMT



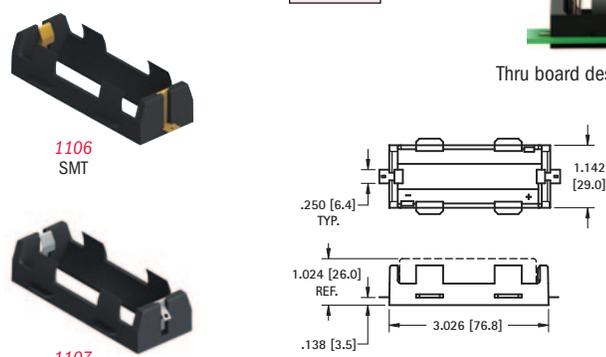
Mounting Detail



CAT. NO. 1124 Polarized

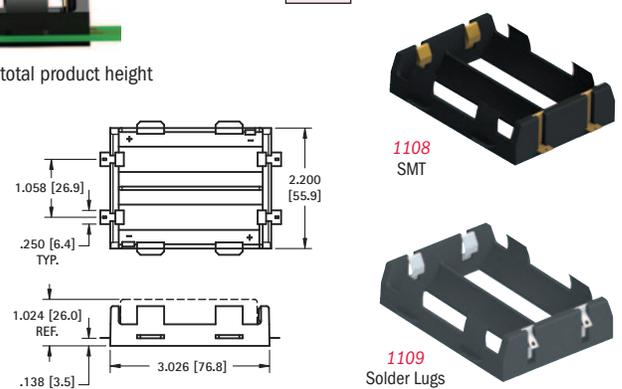
# SMT & IN-LINE "26650" LITHIUM-ION HOLDERS

SINGLE



Thru board design saves on total product height

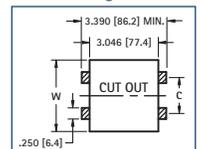
DUAL



DWG. 1 SMT version shown

DWG. 2 SMT version shown

Mounting Detail



## SPECIFICATIONS

**SMT Base:** High Temperature Nylon 46, UL Rated 94V-0  
**SMT Contacts:** .012 (03) Stainless Steel, Gold Plate (Flash)  
**Inline Base:** PBT, UL Rated 94V-0  
**Inline Solder Lugs:** .012 (.3) Stainless Steel, Nickel Plate

CAT. NO.	MTG.	DWG. NO.	HOLDS NO. OF CELLS	SMT MOUNTING PAD LAYOUT	
				W	C
1107	Solder Lugs	1	1	-	-
1109		2	2	-	-
1106	SMT	1	1	1.142 (29.0)	On Center
1108		2	2	2.200 (55.9)	1.058 (26.9)

LITHIUM-ION BATTERY HOLDERS

# IP65 WATER & DUST RESISTANT DENSI-PAK® BATTERY HOLDERS



- Water and dust resistant to IP65 standards
- Sealed on/off switch included
- Ideal for outdoor use such as holiday lighting or automotive emergency markers or harsh manufacturing environments
- Batteries securely held in place to assure a positive connection and low contact resistance
- Coil springs accommodate variations in battery lengths
- Withstands shock and vibration

SUPPLIED WITH ON/OFF SWITCH



## SPECIFICATIONS

Holder: ABS Plastic

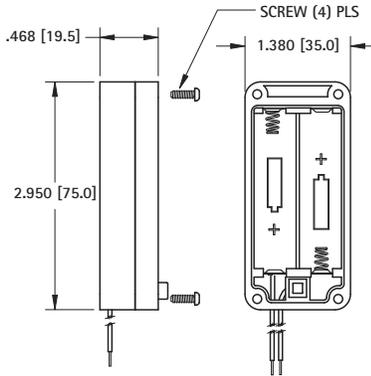
Springs: Spring Steel, Nickel Plate

Wires: 6.0 (152) long, #26 AWG Stripped and pretinned ends, UL/CSA 1007

Temperature Range: 0°F to 175°F (-20°C to 80°C)

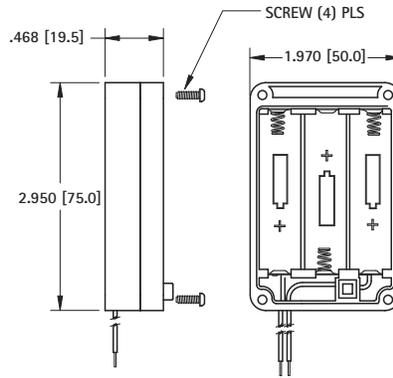
“AA”

### Two (2) Cells - In Series



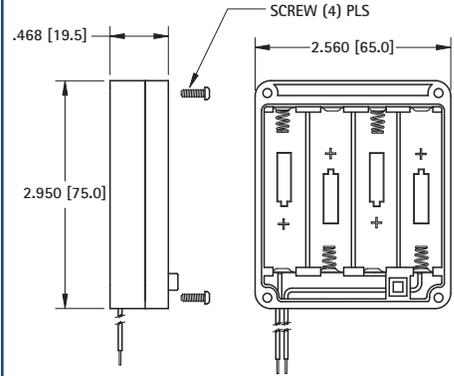
CAT. NO. 2438 Wire Leads with On/Off Switch

### Three (3) Cells - In Series



CAT. NO. 2439 Wire Leads with On/Off Switch

### Four (4) Cells - In Series

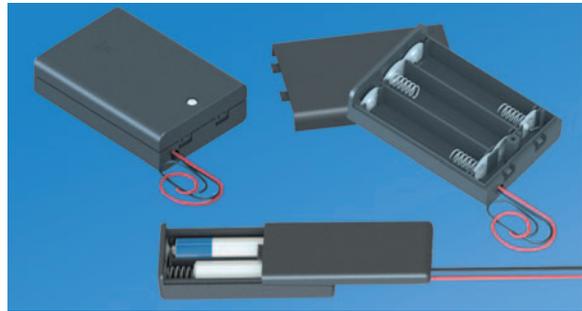


CAT. NO. 2440 Wire Leads with On/Off Switch

## DENSI-PAK® BATTERY HOLDERS

- Supports high density packaging
- Batteries securely held in place to assure a positive connection and maintain a low contact resistance
- Contact springs self-adjust to variations in battery length
- Snap-on cover protects and secures batteries
- Withstands shock and vibration

ON/OFF SWITCH OPTIONAL



See page 33 for Mating PC Jacks

## SPECIFICATIONS

Holder: ABS

Springs: Spring Steel, Nickel Plate

Wires (Red & Black): 6.0 (152) long, #26 AWG, Stripped and pretinned ends, UL/CSA1007

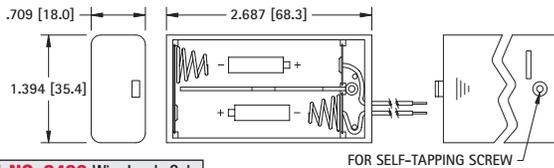
3 Pin Locking PC Connector:

Housing: Nylon 6/6

Contacts: Phosphor Bronze, Tin Plate

“AA”

### Two (2) Cells - In Series

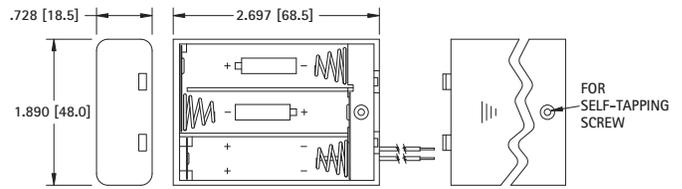


CAT. NO. 2490 Wire Leads Only

CAT. NO. 2490CN Wire Leads w/PC Connector

CAT. NO. 2490SW Wire Leads with On/Off Switch

### Three (3) Cells - In Series



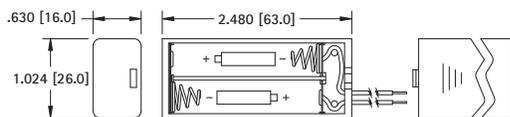
CAT. NO. 2487 Wire Leads Only

CAT. NO. 2487CN Wire Leads w/PC Connector

CAT. NO. 2487SW Wire Leads with On/Off Switch

“AAA”

### Two (2) Cells - In Series

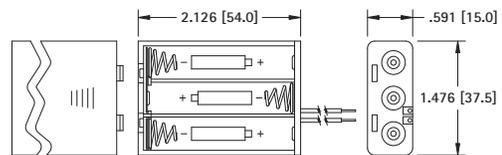


CAT. NO. 2489 Wire Leads Only

CAT. NO. 2489CN Wire Leads w/PC Connector

CAT. NO. 2489SW Wire Leads with On/Off Switch

### Three (3) Cells - In Series



CAT. NO. 2484 Wire Leads Only

CAT. NO. 2484CN Wire Leads w/PC Connector

CAT. NO. 2484SW Wire Leads with On/Off Switch



# ECONOMICAL PLASTIC BATTERY HOLDERS



### PC Mount

PC pins eliminate wiring. Solders directly to PC for compact applications.



### PC Mount with Ribbon (RB)

Ribbon wraps under batteries during battery installation. For easy battery removal, pulling up on ribbon will dislodge batteries from holder.



### 6" Wire Leads

Allows battery holder to be placed remotely from PC freeing up valuable board space.



### 6" Wire Leads with 3 Pin Locking PC Connector (CN)

PC connector eliminates hand soldering of wire leads to PC. Battery holder can be quickly added or removed from PC.

- Coil spring contacts will adjust to different battery lengths
- Batteries securely held in place to assure a positive connection and low contact resistance
- Withstands shock and vibration
- Holders for multiple cell are prewired in series
- Custom designs welcome, Ex: Parallel wiring, custom wiring, combing any of the available options

### SPECIFICATIONS

**Base:** Polypropylene

**Spring:** Spring Steel, Nickel Plate

**PC Pins:** Brass, Nickel Plate

**Wire Leads:** 6.0 (152), #26 AWG Stripped and Tinned, UL/CSA 1007

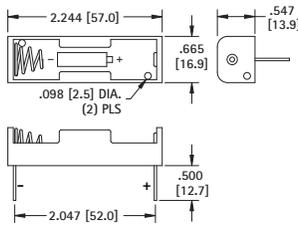
**Ribbon:** Woven Nylon, Red

**PC Connector:** Nylon 6/6, Phosphor Bronze, Tin Plate

PLASTIC BATTERY HOLDERS

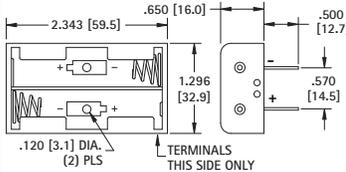
## "AA"

### One (1) Cell



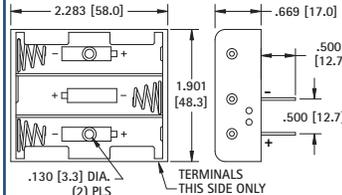
<b>CAT. NO. 2460</b>	PC Mount
<b>CAT. NO. 2460RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2461</b>	Wire Leads Only
<b>CAT. NO. 2461CN</b>	Leads w/PC Connector

### Two (2) Cells - In Series



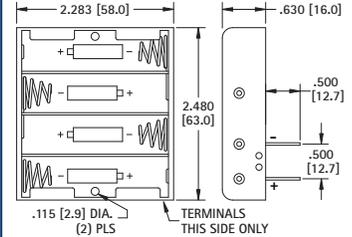
<b>CAT. NO. 2462</b>	PC Mount
<b>CAT. NO. 2462RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2463</b>	Wire Leads Only
<b>CAT. NO. 2463CN</b>	Leads w/PC Connector

### Three (3) Cells - In Series



<b>CAT. NO. 2464</b>	PC Mount
<b>CAT. NO. 2464RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2465</b>	Wire Leads Only
<b>CAT. NO. 2465CN</b>	Leads w/PC Connector

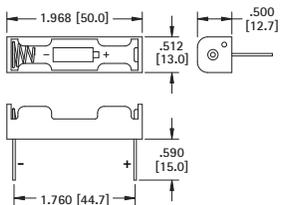
### Four (4) Cells - In Series



<b>CAT. NO. 2477</b>	PC Mount
<b>CAT. NO. 2477RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2478</b>	Wire Leads Only
<b>CAT. NO. 2478CN</b>	Leads w/PC Connector

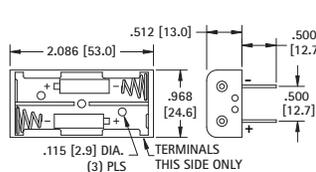
## "AAA"

### One (1) Cell



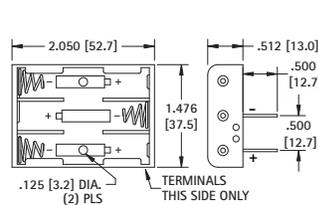
<b>CAT. NO. 2466</b>	PC Mount
<b>CAT. NO. 2466RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2467</b>	Wire Leads Only
<b>CAT. NO. 2467CN</b>	Leads w/PC Connector

### Two (2) Cells - In Series



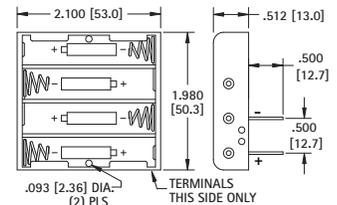
<b>CAT. NO. 2468</b>	PC Mount
<b>CAT. NO. 2468RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2469</b>	Wire Leads Only
<b>CAT. NO. 2469CN</b>	Leads w/PC Connector

### Three (3) "AAA" Cells - In Series



<b>CAT. NO. 2479</b>	PC Mount
<b>CAT. NO. 2479RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2480</b>	Wire Leads Only
<b>CAT. NO. 2480CN</b>	Leads w/PC Connector

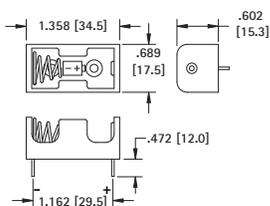
### Four (4) Cells - In Series



<b>CAT. NO. 2481</b>	PC Mount
<b>CAT. NO. 2481RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2482</b>	Wire Leads Only
<b>CAT. NO. 2482CN</b>	Leads w/PC Connector



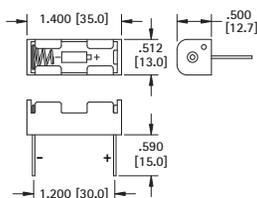
## "1/2 AA" Cell -or- "CR2" Cell



<b>CAT. NO. 2485</b>	PC Mount
<b>CAT. NO. 2485RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2486</b>	6" Wire Leads
<b>CAT. NO. 2486CN</b>	Wire Leads w/PC Connector

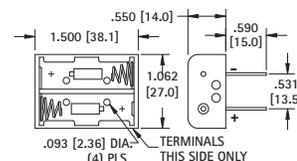
## "1/2AA" - "CR2" - "N" - "12V"

### "N" Cell - 1.5V or "12V" Cell



<b>CAT. NO. 2470</b>	PC Mount
<b>CAT. NO. 2470RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2471</b>	6" Wire Leads
<b>CAT. NO. 2471CN</b>	Wire Leads w/PC Connector

### Two (2) "N" or Two (2) "12V" Cells - In Series



<b>CAT. NO. 2472</b>	PC Mount
<b>CAT. NO. 2472RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2473</b>	6" Wire Leads
<b>CAT. NO. 2473CN</b>	Wire Leads w/PC Connector

## PLASTIC BATTERY HOLDERS WITH SNAP-ON CONNECTORS

- Same quality features as our wired & PC mount battery holders
- Features separable "Snap-On/Snap-Off" battery connector (9 Volt type) to assure reliable connections
- Easily disconnect battery holder from your device - no tools required
- Batteries securely held in place to maintain a positive contact and a low contact resistance

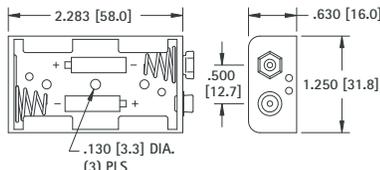
- Battery contact springs self adjust to variations in battery length
- Mates with Keystone 9 Volt battery straps and connectors (Refer to pages 36)

### SPECIFICATIONS

**Holder:** Polypropylene  
**Male/Female Contacts:** Brass, Nickel Plate  
**Springs:** Spring Steel, Nickel Plate

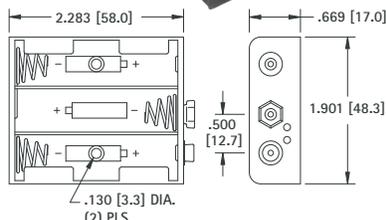
### "AA"

#### Two Cells - in Series



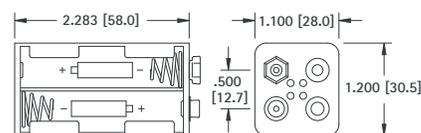
**CAT. NO. 2474**

#### Three (3) Cells - in Series



**CAT. NO. 2475**

#### Four (4) Cells - in Series



**CAT. NO. 2476**

## PC BATTERY HOLDER CONNECTOR JACKS

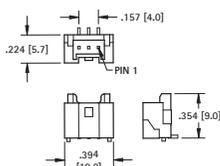
- Available in SMT and THM versions
- Vertical and horizontal entry options
- SMT version supplied on tape and reel for vacuum pick and place assembly
- Used to connect any battery holder with PC connector (CN suffix)
- Wiring harness locks onto jack for assured connectivity

### SPECIFICATIONS

**Body:** Nylon 6/6, UL94V-0  
**Pins:** Brass, Tin Plate  
**Current Rating:** 3 Amps, 100V max  
**Temperature Range:** -10°F to 185°F (25°C to 85°C)

### SMT

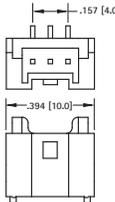
#### VERTICAL



**CAT. NO. 974**

**Tape and Reel Spec's:**  
 13 inch reel (500 pieces per reel)

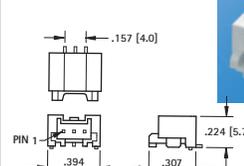
#### SUPPLIED ON TAPE AND REEL



**CAT. NO. 964**

**Tape and Reel Spec's:**  
 15 inch reel (1000 pieces per reel)

#### HORIZONTAL



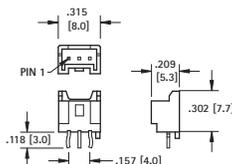
**CAT. NO. 966**

**Tape and Reel Spec's:**  
 13 inch reel (1000 pieces per reel)

**CAT. NO. 976**

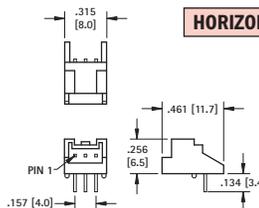
### THM

#### VERTICAL



**CAT. NO. 975**

#### HORIZONTAL



**CAT. NO. 977**

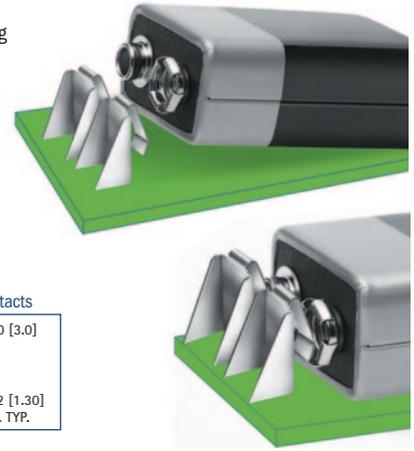
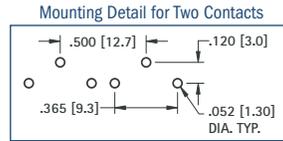
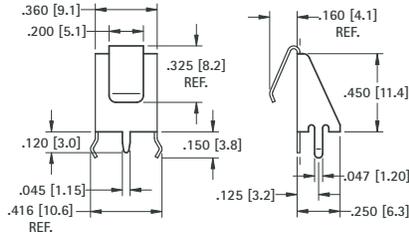


# HORIZONTAL 9 VOLT PC LEAF-SPRING CONTACT

- Ideal "Slide-In" contact for easy installation and removal of 9 Volt batteries
- Space saving design installs directly onto the PC board
- Suitable for .062 (1.57) to .093 (2.36) PC boards
- Reliable leaf-spring assures low contact resistance
- Ideal for self-contained battery compartments
- Snap-in mounting legs holds contact secure during wave soldering



**MATERIAL:** .012 (.30) Spring Steel, Tin-Nickel Plate  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)



**CAT. NO. 590**

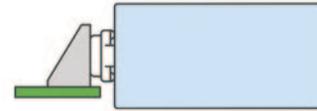
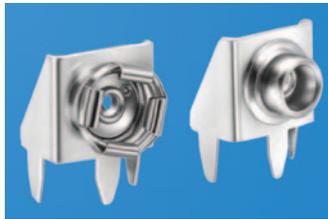
# HORIZONTAL 9 VOLT PC SNAP-ON CONNECTORS

**Mounts Directly to Printed Circuit Board**

- Space saving design installs directly onto the PC board
- Suitable for .062 (1.57) to .093 (2.36) PC boards
- Ideal for self-contained battery compartments



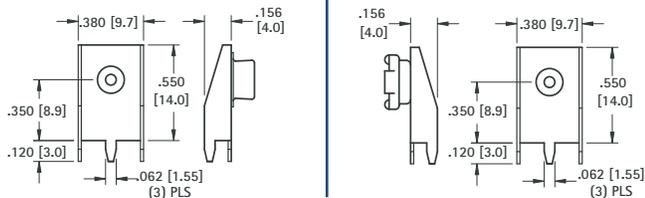
To Mount Battery "On" PC Board  
 Use Cat. No. 593 and Cat. No. 594



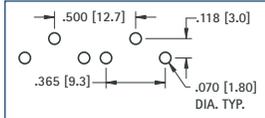
To Mount Battery "Off" PC Board  
 Use Cat. No. 635 and Cat. No. 636

**MATERIAL: Frame:** .015 (.38) Steel, Tin Plate; **Contacts:** Steel, Nickel Plate  
**Operating Temperature:** -50°F to 185°F (-45°C to 85°C)

**"On-Board"**



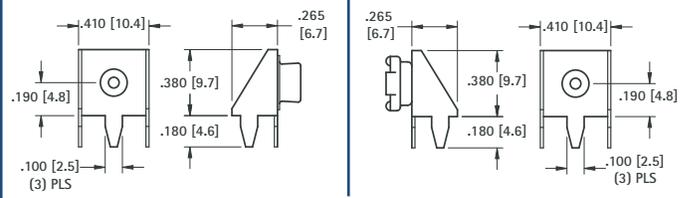
Mounting Detail for Two Contacts



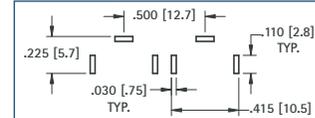
**CAT. NO. 593 (Male)**

**CAT. NO. 594 (Female)**

**"Off-Board"**



Mounting Detail for Two Contacts



**CAT. NO. 635 (Male)**

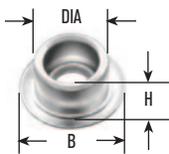
**CAT. NO. 636 (Female)**

# 9 VOLT BATTERY SNAP-ON

For most electronic applications requiring a quick connect and disconnect of circuit. Commonly used with 9 Volt or other batteries designed with snap fasteners. Ideal for temporary or permanent means of connecting without soldering. Can be cascaded together for multiple connections.

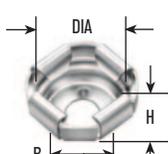
**STUD & SOCKET ONLY**

**FIG. 1**



Stud only

**FIG. 2**



Socket only

**STUD & SOCKET W/CRIMP LUG**

**FIG. 3**



Stud w/Crimp Lug

**FIG. 4**



Socket w/Crimp Lug

CAT. NO.	FIG. NO.	DIA	H	B	HOLE	SIZE	MATERIAL
261*	1	.224 (5.7)	.135 (3.4)	.312 (7.9)	.097 (2.5)	Junior*	Steel, Nickel Plate
269*	2	.210 (5.3)	.150 (3.8)	.250 (6.4)	.096 (2.4)		
262	1	.283 (7.2)	.143 (3.6)	.423 (10.7)	.125 (3.2)	Senior	Brass, Nickel Plate
270	2	.261 (6.6)	.145 (3.7)	.312 (7.9)	.125 (3.2)		

CAT. NO.	FIG. NO.	DIA	H	L	SIZE	MATERIAL
263*	3	.225 (5.7)	.170 (4.3)	.790 (20.1)	Junior*	Stud: Steel, Nickel Plate Lug: Brass, Tin Plate
271*	4	.205 (5.2)	.200 (5.1)	.790 (20.1)		
264	3	.283 (7.2)	.185 (4.7)	.840 (21.3)	Senior	Stud: Brass, Nickel Plate Lug: Brass, Tin Plate
272	4	.265 (6.7)	.185 (4.7)	.835 (21.2)		

\*Use Jr. Socket and stud for standard 9 Volt Battery

DIMENSIONS ARE FOR REFERENCE ONLY

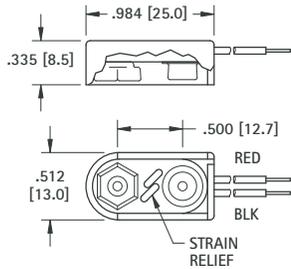
\*Use Jr. Socket and stud for standard 9 Volt Battery

9 VOLT BATTERY CONTACTS

## SHIELDED 9 VOLT BATTERY STRAPS

- Insulates and shields 9 Volt battery snap-on connector contacts
- Assures safe secure use, reduces the potential of short circuits and prevents tampering with battery contacts
- Protects circuits, prevents unwanted electrical discharge due to unintended grounding
- Protects battery contacts from dust, dirt, and physical damage
- Ideal for rugged applications, made of high impact molded plastic with integral wire lead strain relief

84-4  
84-6  
84-8

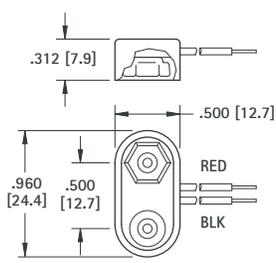


Modifications available with different wire lengths.

### SPECIFICATIONS

**Base:** ABS  
**Male/Female Contacts:** Brass, Nickel Plate  
**Wires (Red & Black):** #26 AWG, Tinned, .187 (4.8) end strip, UL/CSA 1007  
**Operating Temp Range:** 0°F to 175°F (-20°C to 80°C)  
 \*Tolerance on lead length +/- .250 (6.4)

I STYLE MOLDED		T STYLE MOLDED	
CAT. NO.	*LEAD LENGTH	CAT. NO.	*LEAD LENGTH
84-4	4.00 (102)	81-4	4.00 (102)
84-6	6.00 (152)	81-6	6.00 (152)
84-8	8.00 (203)	81-8	8.00 (203)



81-4  
81-6  
81-8



## PREMIUM 9 VOLT BATTERY STRAPS

- Fully Assembled • Rigid Assembly • Ideal for rugged applications, made of high impact molded plastic with integral wire lead strain relief
- Rigidly constructed. Nickel plate, male and female contacts. Female contacts are spring temper. Accepts numerous insertions to meet U.L. approved standards. Provides excellent mechanical strength and low contact resistance. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection. Wires are rated to +176°F (+80°C) and 300V and meet UL/CSA 1007 requirements.

2238  
2239  
2240



**Base Size:**  
1.062 (27.0) x .512 (13.0)

Modifications available with different wire lengths.

### SPECIFICATIONS

**Contacts:** Phosphor Bronze, Nickel Plate  
**Wire:** #26 AWG, UL/CSA 1007  
**End Strip:** .250 (6.4) Long, Tinned

**Base:** Polyethylene  
**Operating Temp Range:** -4°F to 212°F (-20°C to 100°C)  
 \*Tolerance on lead length +/- .250 (6.4)

I STYLE MOLDED		T STYLE MOLDED	
CAT. NO.	*LEAD LENGTH	CAT. NO.	*LEAD LENGTH
2238	4.00 (102)	2241	4.00 (102)
2239	6.00 (152)	2242	6.00 (152)
2240	8.00 (203)	2243	8.00 (203)

**Base Size:**  
1.00 (25.4) x .512 (13.0)



2241  
2242  
2243

## ECONOMY 9 VOLT BATTERY STRAPS

- Fully Assembled • Rigid Assembly

When product cost is of the utmost importance these economy battery straps will suit your needs. Brass contacts, nickel plated with vinyl or ABS covering. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection. Wires meet UL/CSA 1007 requirements.



232-M  
233-M  
234-M

**Molded ABS Base Size:**  
.984 (25.0) x .469 (11.9)  
(Strain Relief)

Modifications available with different wire lengths.

### SPECIFICATIONS

**Contacts:** Brass, Nickel Plate  
**Wire:** #26 AWG, UL/CSA 1007  
**End Strip:** .250 (6.4) Long, Tinned  
**Operating Temp Range:** 14°F to 150°F (-10°C to 65°C)  
 \*Tolerance on lead length +/- .250 (6.4)

I STYLE			T STYLE		
MOLDED	VINYL	*LEAD LENGTH	MOLDED	VINYL	CAT. NO.
CAT. NO.	CAT. NO.		CAT. NO.	CAT. NO.	
232-M	232	4.00 (102)	235-M	235	235 236 237
233-M	233	6.00 (152)	236-M	236	
234-M	234	8.00 (203)	237-M	237	

**Molded ABS Base Size:**  
.965 (25.0) x .528 (13.4)  
(Strain Relief)



232  
233  
234

**Vinyl Base Size:**  
1.125 (28.6) x .531 (13.5)



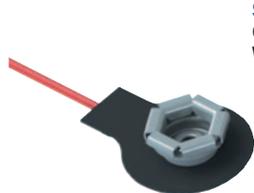
235-M  
236-M  
237-M

**Vinyl Base Size:**  
1.000 (24.5) x .532 (13.5)

### SINGLE 9 VOLT BATTERY STRAPS

#### SPECIFICATIONS

**Contacts:** Brass, Nickel Plate  
**Wire:** #26 AWG, 7/34



CAT. NO. 260



CAT. NO. 268

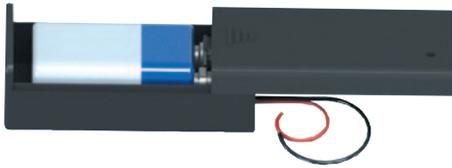
### CUSTOM BATTERY CONNECTORS

Custom Battery connectivity products can be produced to your exact specifications. Standard items can be modified to accommodate your design requirements.

Please go to the contact us page on our website:  
[www.keyelco.com](http://www.keyelco.com) or email our engineering team [KEC@keyelco.com](mailto:KEC@keyelco.com)



## DENSI-PAK® 9 VOLT BATTERY HOLDER

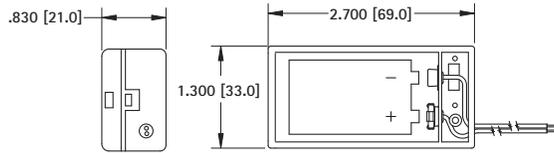


- Positions anywhere for easy access to battery
- Battery held securely in place
- Snap-on cover protects and secures battery against shorting
- Economical design
- Battery contacts provide reliable low resistance connection



### Materials:

**Body:** ABS plastic  
**Contacts:** Brass, Nickel Plate  
**Wire Leads:** 6.0 (152), #26 AWG, Tinned and stripped, UL/CSA 1007  
**Operating Temperature:** 0°F to 175°F (-20°C to 80°C)

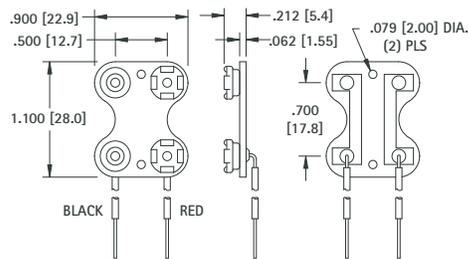


**CAT. NO. 245**

## DUAL 9 VOLT BATTERY STRAP

This dual battery strap is pre-wired for connecting two 9 Volt batteries. Base made from fibre material with steel, nickel plated contacts. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection. Wires meet UL/CSA #1061 requirements.

### PARALLEL



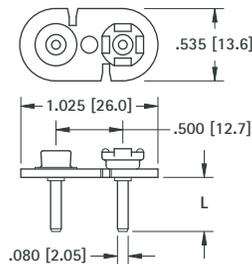
### SPECIFICATIONS

**Contacts:** Steel, Nickel Plate  
**Wire:** #22 AWG, UL/CSA #1061  
**End Strip:** .375 (9.5) Long, Tinned

CAT. NO.	WIRE LENGTH
227	7.00 (178)
227-2	2.00 (51)

## VERTICAL 9 VOLT PC SNAP-ON CONNECTOR

- Space saving, economical
- Excellent mechanical strength
- Low contact resistance
- Durable fibre base
- Wave solderable
- Anti-Wicking Design

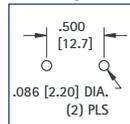


### SPECIFICATIONS

**Base:** .062 (1.57) Fibre  
**Contacts:** Steel, Nickel Plate  
**Pins:** Brass, Tin Plate

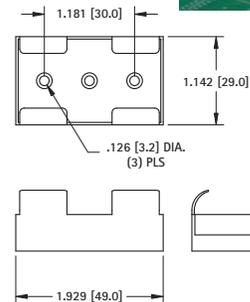
CAT. NO.	L LENGTH
967 (with PC Pins)	.120 (3.0)
968 (with PC Pins)	.400 (10.2)
68 (without PC Pins)	-

### Mounting Detail



## 9 VOLT BATTERY RETAINER

- Holds battery securely in place
- Positions anywhere for easy access to battery
- Clearance on end for 9 Volt battery strap



**CAT. NO. 239**

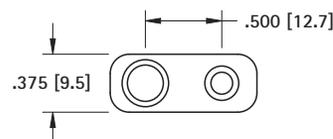
**MATERIAL:** Polypropylene

## PROTECTIVE BATTERY CAP

- Protects 9 Volt batteries and battery packs when they are not in use
- Snap-fits onto battery contacts
- Protects the battery contacts from damage due to dust, dirt and contamination

### MATERIAL:

Impact Resistant Polypropylene, Black



**CAT. NO. 96**

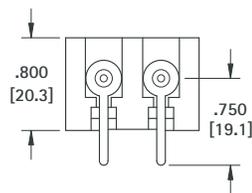
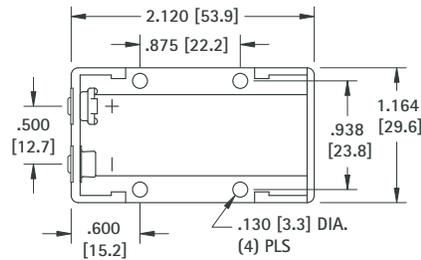
# MOLDED 9 VOLT BATTERY HOLDERS

## SPECIFICATIONS

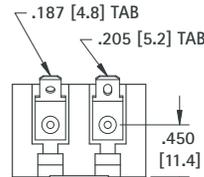
**Body:** Molded from high impact, Glass Filled Nylon  
**Terminals:** Brass, Tin Plate  
**Contacts:** Steel, Nickel Plate  
**Operating temperature range:** -40°F to +266°F (-40°C to +130°C)

Holds any size, any shape, standard 9 Volt battery. Eliminates need to specify an exact battery brand, size or shape. Ideal for power source or memory back-up use in PLC, telecommunications, data processing, security systems, clocks, radios, toys and appliances.

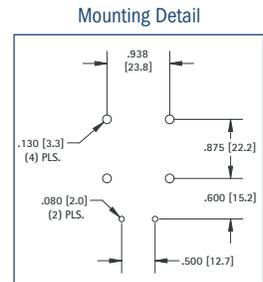
- Male-female snap-in terminals assure positive contact and proper polarity
- Durable, rugged construction
- Excellent spring retention – holds battery in place
- Withstands severe shock and vibration
- Impervious to most industrial solvents



**CAT. NO. 1294**  
PC Terminals

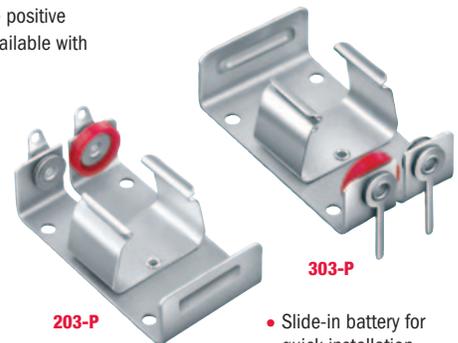
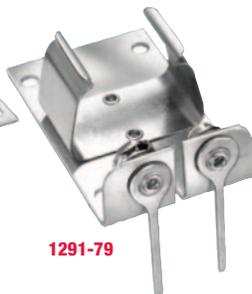


**CAT. NO. 1295**  
Quick-Fit Terminals



# ALUMINUM 9 VOLT BATTERY HOLDERS

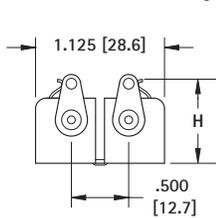
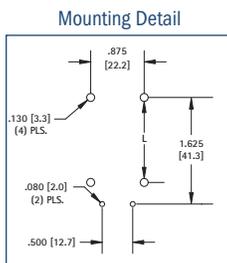
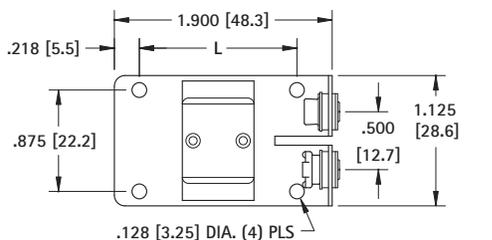
For use with standard 9 Volt battery. Battery snaps in place to insure positive contact. Ideal where severe shock and vibration are encountered. Available with standard solder lugs or printed circuit lugs.



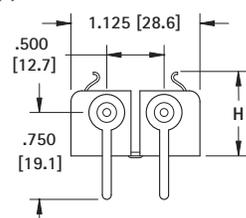
## SPECIFICATIONS

**Frame:** Aluminum  
**Solder Terminals:** Brass, Tin Plate  
**PC Terminals:** Brass, Tin Plate  
**Contacts & Clips:** Steel, Nickel Plate  
**Insulation:** Resin Impregnated  
**Polarizing Washer:** Polyethylene

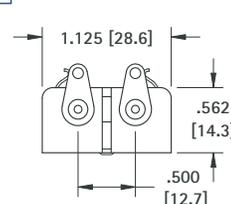
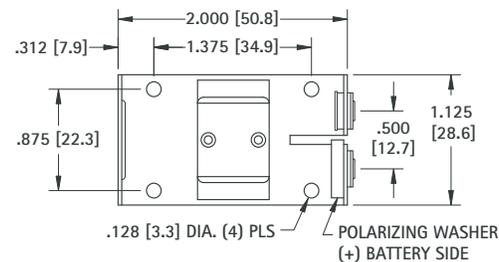
- Slide-in battery for quick installation and replacement
- Polarity clearly marked



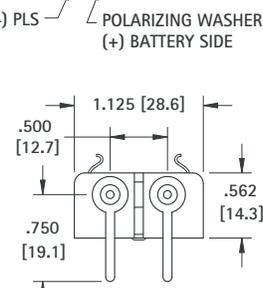
**1290**



**1291**



**CAT. NO. 203-P**  
Solder Terminals

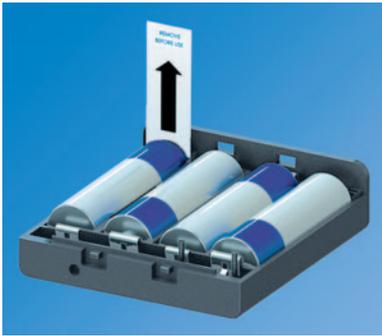


**CAT. NO. 303-P**  
PC Terminals

CAT. NO.	CAT. NO.	H	L	BATTERY REFERENCE	DESCRIPTION
1291	1290	.718 (18.2)	1.375 (34.9)	Alkaline	Low Profile
1291-79	1290-79	.812 (20.6)	1.375 (34.9)	Alkaline	Snap Fit
1291-66	1290-66	.857 (21.8)	1.250 (31.8)	Lithium-Ion	Snap Fit



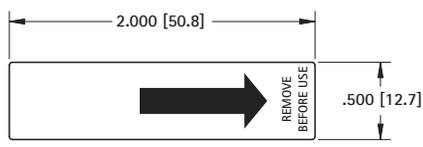
# BATTERY INSULATORS (PULL TABS)



- Battery insulator will protect battery and circuitry during shipping and storage
- Insulator to be pulled out from product when it is time to activate

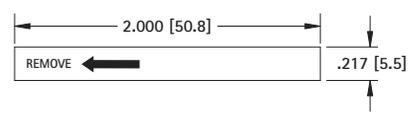
- Lettering and arrow provide intuitive markings for proper use
- Thin, flexible, strong insulator can be pulled from battery compartment even if the battery compartment is closed

### "AA" & LARGER

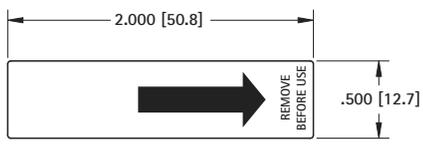


**MATERIAL:** .007 Mineral Reinforced Polypropylene, white  
**CAT. NO. 117** 1000 pieces per roll

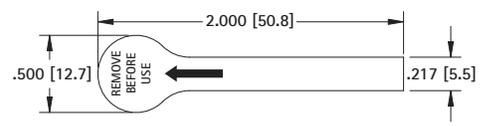
### BUTTON CELL & "AAA"



**MATERIAL:** .007 Mineral Reinforced Polypropylene, white  
**CAT. NO. 111** 1000 pieces per roll



**MATERIAL:** .005 Polyester, clear  
**CAT. NO. 121** (Bulk)

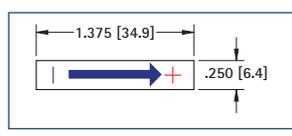


**MATERIAL:** .005 Polyester, clear  
**CAT. NO. 119** (Bulk)

## POLARITY INDICATING LABEL



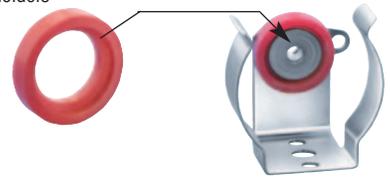
- No gluing or wetting needed
- Pressure sensitive adhesive back
- Economical
- Adheres to all surfaces



**CAT. NO. 58**

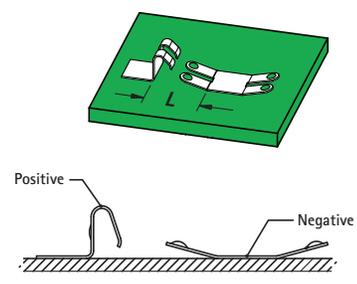
## INSULATED POLARIZING WASHERS

- Prevents improper connection of battery which may cause damage to electronic equipment
- Washers hold securely when snapped over eyelets
- Used on our standardized battery holders
- For "AA", "C" & "D" cells.



**MATERIAL:** Molded Polyethylene  
**CAT. NO. 59** (RED)  
**CAT. NO. 60** (BLACK)

## COIN CELL ENCLOSURE CONTACT LAYOUTS



Refer to page 12 for Part Details

**CAT. NO. 112 & 118**

CAT. NO.	BATTERY REFERENCE	L
120 & 118	CR1216, CR1220	.178 (4.5)
	CR1612, CR1616, CR1620	.256 (635)

**CAT. NO. 110 & 118**

CAT. NO.	BATTERY REFERENCE	L
110 & 118	CR1225	.213 (5.4)
	CR1632	.291 (7.4)

**CAT. NO. 120 & 112**

CAT. NO.	BATTERY REFERENCE	L
120 & 112	CR2012, CR2016, CR2020	.336 (8.5)
	CR2320	.395 (10.0)
	CR2412	.414 (10.5)

**CAT. NO. 110 & 112**

CAT. NO.	BATTERY REFERENCE	L
110 & 112	CR2025, CR2032	.370 (9.4)
	CR2325, CR2330	.429 (10.9)
	CR2430	.448 (11.4)
	CR2032	.567 (14.4)

**CAT. NO. 122 & 112**

CAT. NO.	BATTERY REFERENCE	L
122 & 112	CR2354	.429 (10.9)
	CR2450, CR2477	.448 (11.4)
	CR3032	.567 (14.4)

# SMT BATTERY CONTACT & PAD LAYOUTS

NOTE: ALL MOUNTING DIMENSIONS ARE FOR REFERENCE ONLY. PLEASE VERIFY YOUR BATTERY LAYOUT PRIOR TO FABRICATION.



BATTERY CONTACT LAYOUTS & MOUNTING DETAILS

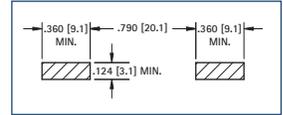


50  
550

CAT. NO.	"L" DIMENSION	
	For "AAAA" 0.33 (8.4) × 1.67 (42.4)	For "A27" 0.30 (7.6) × 1.10 (28.0)
50	0.89 (22.6)	0.32 (8.1)
550		

Refer to page 13 for Part Details

Pad Layout

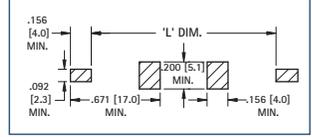


55  
555

CAT. NO.	"L" DIMENSION		
	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)	For "A23" 0.40 (10.2) × 1.10 (27.9)
55	1.76 (44.7)	1.15 (29.2)	1.11 (28.2)
555			

Refer to page 13 for Part Details

Pad Layout

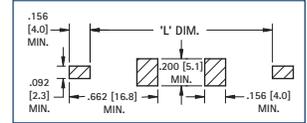


53  
553

CAT. NO.	"L" DIMENSION		
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "CR2" 0.60 (15.2) × 1.05 (26.7)
53	2.05 (52.1)	1.38 (35.1)	1.04 (26.4)
553			

Refer to page 13 for Part Details

Pad Layout



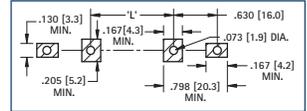
254  
246

CAT. NO.	"L" DIMENSION		
	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "18350" 0.71 (18.0) × 1.38 (35.0)	For "18650" 0.71 (18.0) × 2.56 (65.0)
254	.270 (6.9)	.324 (8.2)	1.58 (40.2)

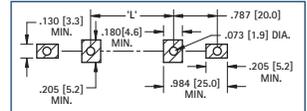
CAT. NO.	"L" DIMENSION		
	For "20600" 0.79 (20.0) × 2.36 (60.0)	For "20700" 0.79 (20.0) × 2.76 (70.0)	For "21700" 0.83 (21.0) × 2.76 (70.0)
246	1.10 (28.0)	1.50 (38.0)	1.49 (38.0)

Refer to page 13 for Part Details

Pad Layout



Pad Layout



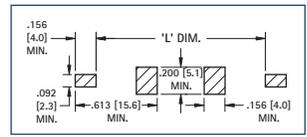
56  
556  
57  
557

CAT. NO.	"L" DIMENSION		
	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)	For "A23" 0.4 (10.2) × 1.10 (27.9)
56	1.67 (42.4)	1.07 (27.2)	1.02 (25.9)
556			

CAT. NO.	"L" DIMENSION		
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "CR2" 0.60 (15.2) × 1.05 (26.7)
57	1.90 (48.3)	1.23 (31.2)	0.97 (24.6)
557			

Refer to page 13 for Part Details

Pad Layout



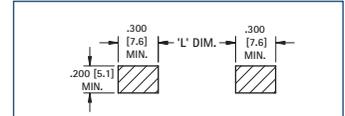
5231  
5331  
5230  
5330

CAT. NO.	"L" DIMENSION		
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "CR2" 0.60 (15.2) × 1.05 (26.7)
5231	2.38 (60.5)	1.71 (43.4)	1.53 (24.6)
5331			

Refer to page 14 for Part Details

CAT. NO.	"L" DIMENSION				
	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)	For "A23" 0.40 (10.2) × 1.10 (27.9)	For "A27" 0.30 (7.6) × 1.10 (27.9)	For "AAAA" 0.33 (8.4) × 1.67 (42.4)
5230	1.96 (49.8)	1.35 (34.3)	1.31 (33.3)	1.31 (33.3)	1.86 (47.2)
5330					

Pad Layout



"L" dimensions reflect initial insertion deflection.

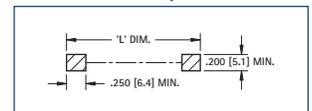


1016-1  
1020-1

CAT. NO.	"L" DIMENSION				
	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)	For "A27" 0.30 (7.6) × 1.10 (27.9)	For "A23" 0.33 (8.4) × 1.67 (42.4)	For "AAAA" 0.33 (8.4) × 1.67 (42.4)
1020-1	2.42 (61.5)	1.81 (46.0)	1.77 (44.9)	2.34 (59.4)	2.34 (59.4)
1076-1					
1076-2					

Refer to page 15 for Part Details

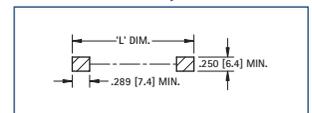
Pad Layout



1076-2  
1088-2

CAT. NO.	"L" DIMENSION		
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "CR2" 0.60 (14.2) × 1.05 (26.7)
1016-1	2.72 (69.1)	2.10 (53.3)	1.79 (45.5)
1088-1			
1088-2			

Pad Layout





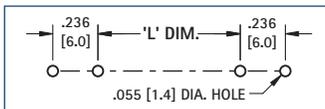
# THM BATTERY CLIP & CONTACT LAYOUTS AND MOUNTING DETAILS

NOTE: ALL MOUNTING DIMENSIONS ARE FOR REFERENCE ONLY. VERIFY YOUR BATTERY LAYOUT PRIOR TO FABRICATION.

## BATTERY CONTACT LAYOUTS & MOUNTING DETAILS

Refer to page 13 for Part Details

Mounting Detail



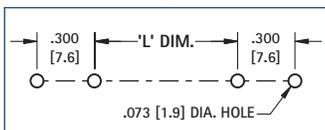
CAT. NO.	"L" DIMENSION	
	For "AAAA"	For "A27"
<b>51</b>	0.33 (8.4) × 1.67 (42.4)	0.300 (7.6) × 1.10 (27.9)



51

Refer to page 13 for Part Details

Mounting Detail



CAT. NO.	"L" DIMENSION		
	For "AAA"	For "N"	For "A23"
<b>82</b>	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)	0.40 (10.2) × 1.10 (27.9)



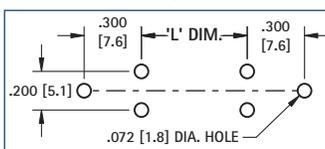
82  
92  
2915



52

Refer to page 13 for Part Details

Mounting Detail



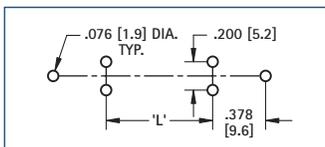
CAT. NO.	"L" DIMENSION			
	For "18650"	For "18350"	For "2/3 A"	For "17500"
<b>54</b>	0.71 (18.4) × 2.56 (65.0)	0.73 (18.5) × 1.38 (35.0)	0.67 (17.0) × 1.36 (34.5)	0.67 (17.0) × 1.97 (50.0)



54

Refer to page 13 for Part Details

Mounting Detail



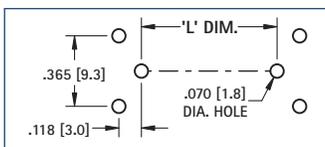
CAT. NO.	"L" DIMENSION		
	For "20600 A"	For "20700"	For "21700"
<b>247</b>	0.79 (20.0) × 2.36 (60.0)	0.79 (20.0) × 2.76 (70.0)	0.83 (21.0) × 2.76 (70.0)



247

Refer to page 14 for Part Details

Mounting Detail



CAT. NO.	"L" DIMENSION		
	For "2/3 A"	For "CR2"	For "AA"
<b>595 with 628</b>	0.67 (17.0) × 1.36 (34.5)	0.60 (15.2) × 1.05(26.7)	0.56 (14.2) × 1.98 (50.3)



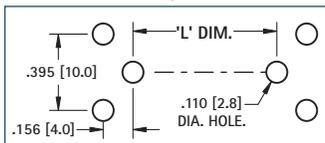
595



628

Refer to page 14 for Part Details

Mounting Detail



CAT. NO.	"L" DIMENSION		
	For "AAA"	For "N"	For "A23"
<b>637 with 629</b>	0.41 (10.4) × 1.75 (44.5)	0.45(11.4) × 1.14(29.0)	0.40 (10.2) × 1.10(27.9)



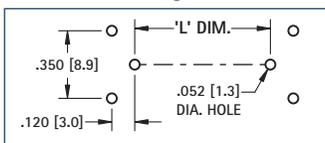
637



629

Refer to page 14 for Part Details

Mounting Detail



"L" dimensions reflect initial insertion deflection.

CAT. NO.	"L" DIMENSION		
	For "AA"	For "2/3 A"	For "CR2"
<b>596 with 590</b>	0.56(14.2) × 1.98(50.3)	0.67 (17.0) × 1.36(34.5)	0.60 (15.2) × 1.05(26.7)
<b>590 with 590</b>	2.07 (52.6)	N/A	1.14 (29.0)



596  
597



590  
591

CAT. NO.	"L" DIMENSION		
	For "AAA"	For "N"	For "A23"
<b>597 with 591</b>	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)	0.40 (10.2) × 1.10 (27.9)
<b>591 with 591</b>	1.83 (46.5)	1.22 (31.0)	1.18 (30.0)

# BATTERY CONTACT LAYOUTS AND MOUNTING DETAILS

NOTE: ALL MOUNTING DIMENSIONS ARE FOR REFERENCE ONLY. PLEASE VERIFY YOUR BATTERY LAYOUT PRIOR TO FABRICATION.



BATTERY CONTACT LAYOUTS & MOUNTING DETAILS

Refer to page 15 & 21 for Part Details



CAT. NO.	FIG. NO.	L DIMENSION					
		For "AA" 0.56 (14.2) × 1.98 (50.3)	For "CR2" 0.60 (15.2) × 1.05 (26.7)	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "17500"* 0.67 (17.0) × 1.97 (50.0)	For "18350"* 0.71 (18.0) × 1.38 (35.0)	For "18650"* 0.71 (18.0) × 2.56 (65.0)
5205	3	2.28 (57.9)	1.35 (34.3)	1.66 (42.1)	2.27 (57.7)	1.68 (42.7)	2.86 (72.6)
5205 with 5206	3	2.28 (57.9)	N/A	N/A	N/A	N/A	N/A
5209	3	2.34 (59.4)	1.41 (35.8)	1.72 (43.6)	2.33 (59.2)	1.74 (44.2)	2.92 (74.2)
5209 with 5208	3	2.34 (59.4)	N/A	N/A	N/A	N/A	N/A
1017-1 1087-1 1087-2	3	2.19 (55.6)	1.26 (32.0)	1.57 (39.8)	2.18 (55.4)	1.59 (40.4)	2.77 (70.4)
5232 with 5233	3	2.28 (57.9)	N/A	N/A	N/A	N/A	N/A

\*Built in circuit protection may increase length of battery, check battery specifications for exact battery length

CAT. NO.	FIG. NO.	L DIMENSION				
		For "AAAA" 0.33 (8.4) × 1.67 (42.4)	For "A27" 0.30 (7.6) × 1.10 (27.9)	For "A23" 0.40 (10.2) × 1.10 (27.9)	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)
1021-1 1075-1 1075-2	3	1.88 (47.8)	1.31 (33.3)	1.31 (33.3)	1.96 (49.8)	1.35 (34.3)

CAT. NO.	FIG. NO.	L DIMENSION				
		For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "CR2" 0.60 (15.2) × 1.05 (26.7)	For "2/3A" 0.67 (17.0) × 1.24 (31.5)
108-2	3	1.99 (50.5)	1.38 (35.0)	2.22 (56.4)	1.29 (32.8)	1.55 (39.4)

CAT. NO.	FIG. NO.	L DIMENSION									
		For "AA" 0.56 (14.2) × 1.98 (50.3)	For "CR2" 0.60 (15.2) × 1.05 (26.7)	For "2/3 A" 0.67 (17.0) × 1.24 (31.5)	For "17500"* 0.67 (17.0) × 1.97 (50.0)	For "18350"* 0.71 (18.0) × 1.38 (35.0)	For "18650"* 0.71 (18.0) × 2.56 (65.0)	For "C" 0.99 (25.0) × 1.97 (50.0)	For "26650" 1.02 (26.0) × 2.56 (65.0)	For "D" 1.30 (33.0) × 2.24 (56.9)	
1107-1	3	2.19 (55.6)	1.26 (32.0)	1.52 (38.6)	2.18 (55.4)	1.59 (40.4)	2.77 (70.4)	2.45 (62.2)	2.45 (62.2)		
109-2	3	2.22 (56.4)	1.29 (32.8)	1.55 (39.4)	2.21 (56.1)	1.62 (41.1)	2.80 (71.1)	N/A	N/A		
109-3	3	N/A	N/A	N/A	N/A	N/A	N/A	2.21 (56.1)	2.80 (71.1)		

\*Built in circuit protection may increase length of battery, check battery specifications for exact battery length

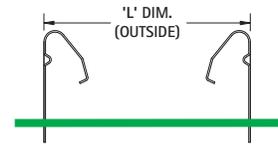


Fig. 3 PC Mount  
L dimensions reflect initial insertion deflection.

Refer to page 15 for Part Details



CAT. NO.	FIG. NO.	L DIMENSION				
		For "AAAA" 0.33 (8.4) × 1.67 (42.4)	For "A27" 0.30 (7.6) × 1.10 (27.9)	For "A23" 0.40 (10.2) × 1.10 (27.9)	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)
230-1	5	1.67 (42.4)	1.10 (27.9)	1.10 (27.9)	1.73 (43.9)	1.14 (29.0)

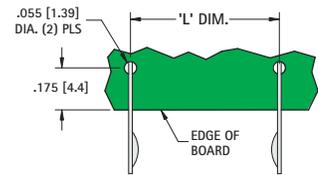
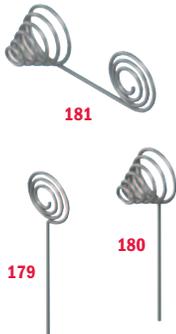


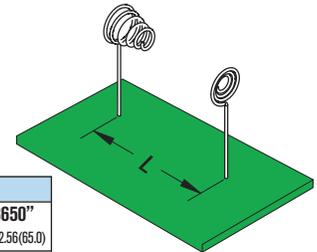
Fig. 5 Off-Board Mount

Refer to page 16 for Part Details



CAT. NO.	L DIMENSION				
	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)	For "A27" 0.30 (7.6) × 1.10 (27.9)	For "A23" 0.39 (10.0) × 1.10 (28.0)	For "AAAA" 0.33 (8.4) × 1.67 (42.4)
179	1.88 (47.8)	1.27 (32.3)	1.23 (31.2)	1.23 (31.2)	1.80 (45.7)

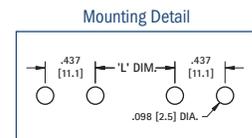
CAT. NO.	L DIMENSION					
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For 2/3 "A" 0.67 (17.0) × 1.36 (34.5)	For "CR2" 0.60 (14.2) × 1.05 (26.7)	For "17500" 0.67 (17.0) × 1.97 (50.0)	For "18350" 0.71 (18.0) × 1.38 (35.0)	For "18650" 0.71 (18.0) × 2.56 (65.0)
242	2.12 (53.8)	1.50 (38.1)	1.19 (30.2)	2.12 (53.8)	1.52 (38.6)	2.70 (68.6)
243						
244						



Refer to page 22 for Part Details



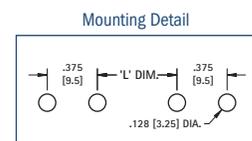
CAT. NO.	"L" DIMENSION		
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "C" 1.00 (25.4) × 1.97 (50.0)	For "D" 1.30 (33.0) × 2.42 (61.5)
99	0.91 (23.0)	-	-
100			
86		0.91 (23.0)	-
87			
88			
89			1.19 (30.2)



Refer to page 22 for Part Details



CAT. NO.	"L" DIMENSION		
	For "AA" 0.56 (14.2) × 1.98 (50.3)	For "C" 1.00 (25.4) × 1.97 (50.0)	For "D" 1.30 (33.0) × 2.42 (61.5)
206	1.10 (27.9)	-	-
207		0.81 (20.6)	-
208			1.25 (31.8)





# BATTERY LAYOUTS FOR MOLDED CASE CONTACTS

NOTE: ALL MOUNTING DIMENSIONS ARE FOR REFERENCE ONLY. VERIFY YOUR BATTERY LAYOUT PRIOR TO FABRICATION.

Refer to pages 20 & 21 for Part Details

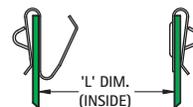


Fig. 1 Spring-Button

L dimensions reflect initial insertion deflection.

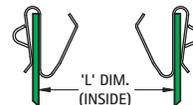


Fig. 2 Spring-Spring

L dimensions reflect initial insertion deflection.

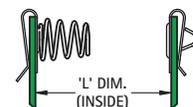


Fig. 3 Spring-Button

L dimensions reflect initial insertion deflection.

CAT. NO.	FIG. NO.	L DIMENSION				
		For "AAAA" 0.33 (8.4) × 1.67 (42.4)	For "A 27" 0.30 (7.7) × 1.10 (28.0)	For "A23" 0.39 (10.0) × 1.10 (28.0)	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)
204 with 238	1	1.79 (45.5)	1.22 (31.0)	1.22 (31.0)	1.87 (47.5)	1.26 (32.0)
204,238 with 295, 296	1	N/A	N/A	N/A	1.87 (47.5)	N/A
202 with 294	1	N/A	N/A	N/A	1.87 (47.5)	N/A
204 with 204	2	1.89 (48.0)	1.32 (33.5)	1.32 (33.5)	1.97 (50.0)	1.36 (34.5)
204 with 202	2	N/A	N/A	N/A	1.97 (50.0)	N/A
267 with 238	3	1.86 (47.2)	1.29 (32.8)	1.29 (32.8)	1.94 (49.3)	1.33 (33.8)
267, 238 with 299, 287	3	N/A	N/A	N/A	1.94 (49.3)	N/A

CAT. NO.	FIG. NO.	L DIMENSION					
		For "AA" 0.56 (14.2) × 1.98 (50.3)	For "CR2" 0.60 (14.2) × 1.05 (26.7)	For "2/3 A" 0.67 (17.0) × 1.34 (34.5)	For "17500" 0.671 (17.0) × 1.97 (50.0)	For "18350" 0.71 (18.0) × 1.38 (35.0)	For "18650" 0.71 (18.0) × 2.56 (65.0)
209 with 228	1	2.13 (54.1)	1.20 (30.5)	1.46 (37.1)	2.12 (53.8)	1.53 (38.8)	2.71 (68.8)
209, 228 with 290, 291	1	2.13 (54.1)	N/A	N/A	N/A	N/A	N/A
288, 210 with 292	1	2.13 (54.1)	N/A	N/A	N/A	N/A	N/A
209 with 209	2	2.27 (57.7)	1.34 (34.0)	1.60 (40.6)	2.26 (57.4)	1.67 (42.3)	2.85 (72.3)
209 with 288, 210	2	2.27 (57.7)	N/A	N/A	N/A	N/A	N/A
289 with 228	3	2.24 (56.9)	1.31 (33.3)	1.62 (41.1)	2.23 (56.6)	1.64 (41.6)	2.82 (71.6)
289, 228 with 293, 297	3	2.24 (56.9)	N/A	N/A	N/A	N/A	N/A

\*Built in circuit protection may increase length of battery, check battery specifications for exact battery length

Refer to pages 17 thru 19 for Part Details



Fig. 4

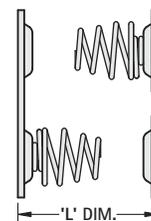


Fig. 5

CAT. NO.	FIG. NO.	"L" DIMENSION				
		For "AAAA" 0.33 (8.4) × 1.67 (42.4)	For "A27" 0.30 (7.6) × 1.10 (27.9)	For "A23" 0.40 (10.2) × 1.10 (27.9)	For "AAA" 0.41 (10.4) × 1.75 (44.5)	For "N" 0.45 (11.4) × 1.14 (29.0)
5203 with 5225	4	1.87 (47.5)	1.30 (33.0)	1.30 (33.0)	1.95 (49.5)	1.34 (34.0)
5204 with 5226	4	1.87 (47.5)	1.30 (33.0)	1.30 (33.0)	1.95 (49.5)	1.34 (34.0)
5214,5213 with 5203, 5225	5	N/A	N/A	N/A	1.95 (49.5)	N/A
5254, 5259 with 5234, 5225	5	N/A	N/A	N/A	1.95 (49.5)	N/A

CAT. NO.	FIG. NO.	"L" DIMENSION					
		For "AA" 0.56 (14.2) × 1.98 (50.3)	For "CR2" 0.60 (15.2) × 1.05 (26.7)	For "2/3 A" 0.67 (17.0) × 1.36 (34.5)	For "17500" 0.67 (17.0) × 1.97 (50.0)	For "18350" 0.71 (18.0) × 1.38 (35.0)	For "18650" 0.71 (18.0) × 2.56 (65.0)
5202 with 5224	4	2.23 (56.6)	1.30 (33.0)	1.61 (40.9)	2.22 (56.5)	1.63 (41.4)	2.81 (71.4)
5222 with 5221	4	2.24 (56.9)	1.31 (33.3)	1.62 (41.1)	2.23 (56.6)	1.64 (41.7)	2.82 (71.6)
5201 with 5223	4	2.24 (56.9)	1.31 (33.3)	1.62 (41.1)	2.23 (56.6)	1.64 (41.7)	2.82 (71.6)
5220 with 5219	4	2.24 (56.9)	1.31 (33.3)	1.62 (41.1)	2.23 (56.6)	1.64 (41.7)	2.82 (71.6)
5201, 5223 with 5210, 5211	5	2.24 (56.9)	N/A	N/A	N/A	N/A	N/A
5222, 5221 with 5212	5	2.24 (56.9)	N/A	N/A	N/A	N/A	N/A
5220, 5219 with 5217, 5218	5	2.24 (56.9)	N/A	N/A	N/A	N/A	N/A
5227 with 5228	5	2.24 (56.9)	N/A	N/A	N/A	N/A	N/A

CAT. NO.	FIG. NO.	"L" DIMENSION		
		For "C" 0.99 (25.0) × 1.97 (50.0)	For "26650" 1.02 (26.0) × 2.56 (65.0)	For "D" 1.30 (33.0) × 2.24 (56.9)
5240 with 5241	4	2.25 (57.2)	3.07 (78.0)	N/A
5250 with 5251	4	N/A	N/A	2.75 (69.9)
5240, 5241 with 5242	5	2.25 (57.2)	N/A	N/A
5250, 5251 with 5252, 5253	5	N/A	N/A	2.75 (69.9)

\*Built in circuit protection may increase length of battery, check battery specifications for exact battery length

BATTERY CONTACT LAYOUTS & MOUNTING DETAILS



A large grid of graph paper for taking notes, consisting of a uniform pattern of small squares.