

## SECTION 1 CONTENTS

### COIN/BUTTON CELL RETAINERS

Button Cell.....	8
Coin Cell.....	8-11
Insulated.....	9
Locking.....	9
Positive & Negative Contacts.....	12

### CLIPS/CONTACTS

Alkaline & Lithium Battery Clips, Rivet Mount.....	22
Alkaline & Lithium Clip, THM & SMT.....	13
PC Battery Contacts.....	14-16
Molded Case Contacts, Alkaline.....	17-21
Molded Case Contacts, Coin Cell.....	12

### HOLDERS

Aluminum & Steel.....	23
Coin Cell.....	2-7
Lithium Cell.....	24-30
IP65 Water & Dust Resistant.....	31
PC Mount – SMT & THM.....	24-26
Plastic Economical.....	32-33

### 9 VOLT BATTERY

9 Volt Snaps & Contacts.....	34-35
9 Volt Holders.....	35-37
9 Volt Battery Straps.....	35-36

MOUNTING DETAILS.....	39-42
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# THRU-HOLE (THM) & SURFACE MOUNT (SMT) COIN CELL HOLDERS

## DESIGN ADVANTAGES...

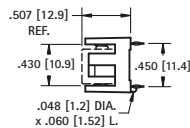
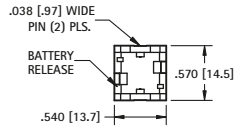
- Reliable spring tension assures low contact resistance
- Retains battery securely to withstand shock and vibration
- Base material UL Rated 94V-0. Impervious to most industrial solvents
- Operating temperature range: -60°F to +293°F (-51°C to +145°C)

## IDEALLY SUITED FOR...

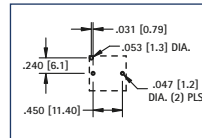
- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up
- Microprocessors and Microcomputer memory hold (desktop and laptop applications)
- Industrial and commercial security and alarm systems
- PC 104 application



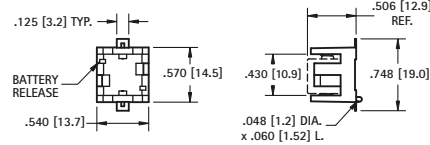
THRU HOLE MOUNT



Mounting Detail

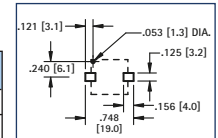


## AVAILABLE ON TAPE AND REEL



SURFACE MOUNT

Pad Layout



## 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

## MATERIAL:

Base: High Temperature Nylon 46, UL Rated 94V-0

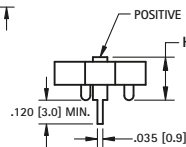
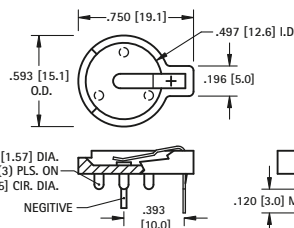
Contacts: .012 (.30) Phosphor Bronze, Gold Plate (Flash)

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

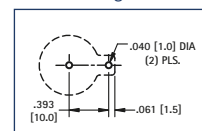
Tape & Reel Spec's: 44mm wide; 20mm pitch; 13 inch reel (200 pieces per reel)



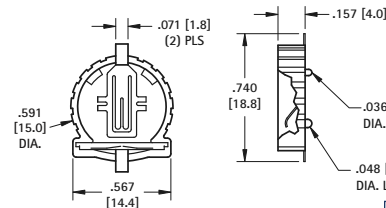
THRU HOLE MOUNT



Mounting Detail

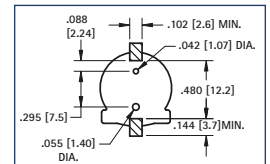


## AVAILABLE ON TAPE AND REEL



SURFACE MOUNT

Pad Layout



## 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	BR1212, CR1216, CL1220, CR1225

## MATERIAL:

Base: Glass Filled PPS, UL Rated 94V-0

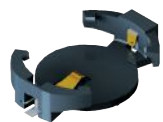
Contacts: .008 (.20) Phosphor Bronze, Gold Plate (Flash)

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

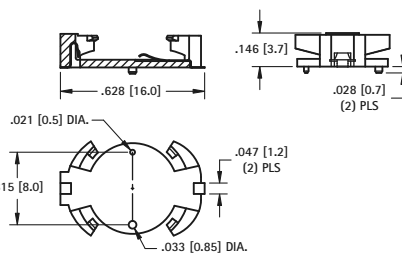
Tape & Reel Spec's: 32mm wide; 20mm pitch; 13 inch reel (500 per reel)

## 12mm AUTO-IN

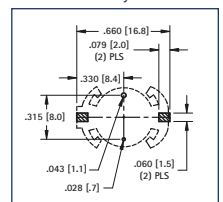
## AVAILABLE ON TAPE AND REEL



SURFACE MOUNT



Pad Layout



## MATERIAL:

Base: PA9T, Black

Contacts: .004 (.10) Phosphor Bronze

Contact Area: Gold Plate (Flash)

Solder Tails: Matte Tin Plate

CAT. NO.	ON TAPE & REEL	CELLS	BATTERY REFERENCE
1072	1072TR	1	CR1220, BR1220, CL1225

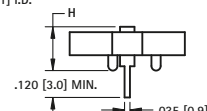
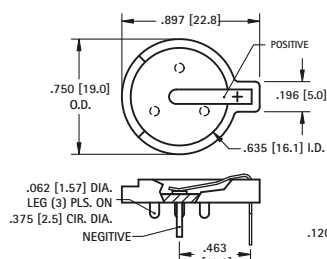
Tape & Reel Spec's: 44mm wide; 24mm pitch; 13 inch reel (450 per reel)

## 16mm

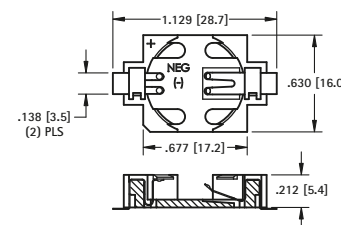
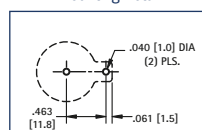
## AVAILABLE ON TAPE AND REEL



THRU HOLE MOUNT

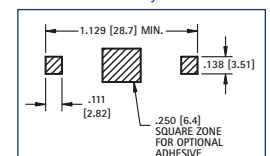


Mounting Detail



SURFACE MOUNT

Pad Layout



## MATERIAL:

Base: Glass Filled LCP, 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

## MATERIAL:

Base: Glass Filled LCP, UL Rated 94V-0

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

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

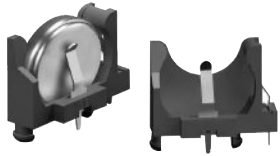
Tape & Reel Spec's: 44mm wide; 24mm pitch; 13 inch reel (450 per reel)

12mm to 16mm COIN CELL HOLDERS

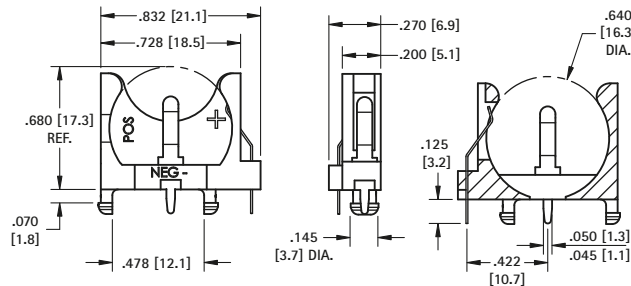
# THRU-HOLE MOUNT (THM) VERTICAL VIBRA-FIT CELL HOLDERS

- 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 (-51°C to 145°C)

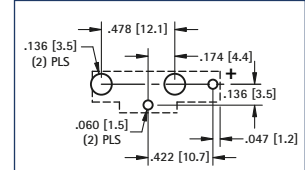
## 16mm VERTICAL



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



Pad Layout



### MATERIAL:

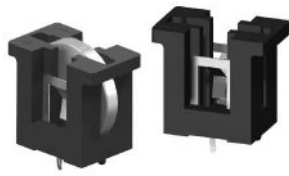
Base: PBT, UL Rated 94V-0

Contacts: .010 (.25) Steel, Tin-Nickel Plate

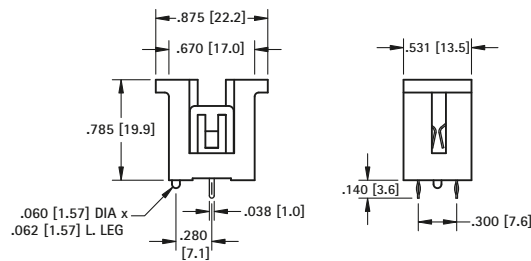
Battery Reference: (1) cell: BR1612, CR1616, CL1620, CR1625, BR1632

CAT. NO. 1069

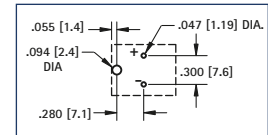
## 20mm COMPACT



- Molded notch prevents improper insertion of 2032 size cells



Mounting Detail



### MATERIAL:

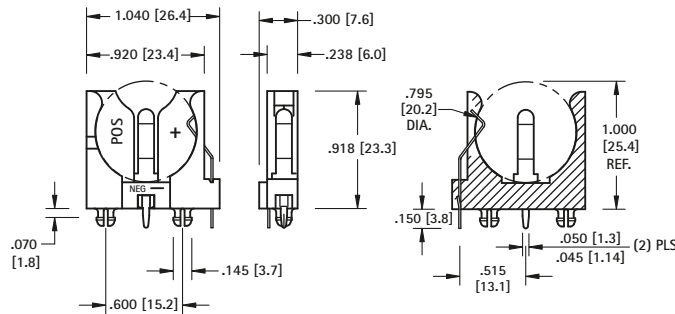
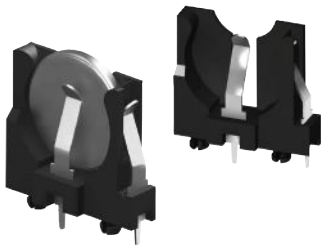
Contacts: .012 (.30) Spring Steel, Tin-Nickel Plate

Base: PBT, UL Rated 94V-0

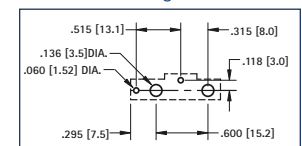
CAT. NO.	BATTERY REFERENCE
1067	CR2016, DL2020, CL2025, CR2032

## 20mm SLIM-LINE

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



Mounting Detail



### MATERIAL:

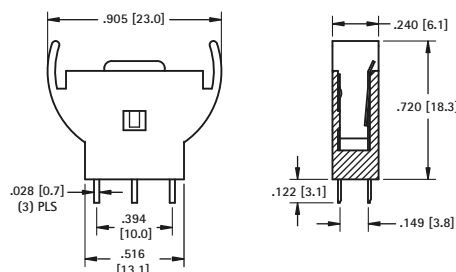
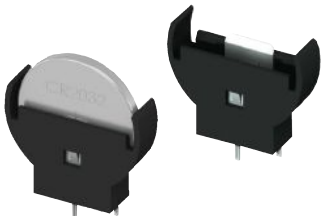
Contacts: .016 (.41) Spring Steel, Tin-Nickel Plate

Base: PBT, UL Rated 94V-0

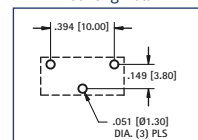
CAT. NO.	BATTERY REFERENCE
1065	BR2012, CR2016, DL2020, CL2025, CR2032

## 20mm SLIM-LINE

- Top loading.



Mounting Detail



### MATERIAL:

Contacts: .010 (.25) Brass, Tin Plate

Base: Nylon 6/6, Black

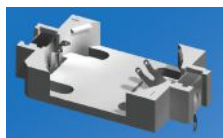
CAT. NO.	BATTERY REFERENCE
1074	CR2032



# 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 (-51°C to 145°C)

## 2025 / 2032 THRU HOLE MOUNT HOLDER



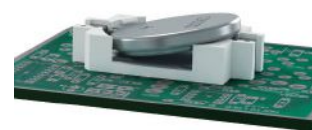
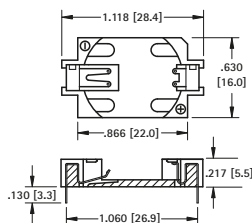
Thru Hole Mount

### MATERIAL:

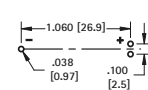
**Contacts:** .006 (.15) Phosphor Bronze, Tin Plate  
**Base:** Glass Filled LCP, UL Rated 94V-0

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:

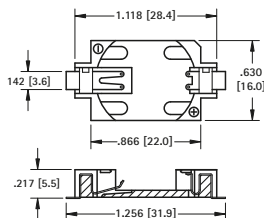
**Contacts:** .006 (.15) Phosphor Bronze, Gold Plate (Flash)  
**Base:** Glass Filled LCP, UL Rated 94V-0

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

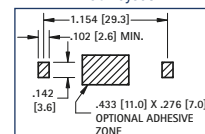
**Tape & Reel Spec's:** 44mm wide; 20mm pitch; 13 inch reel (500 pieces per reel)

### 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



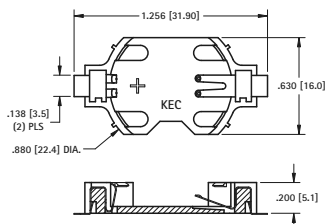
Surface Mount

### MATERIAL:

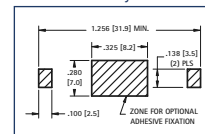
**Contacts:** .006 (.15) Phosphor Bronze, Gold Plate (Flash)  
**Base:** Glass Filled LCP, UL Rated 94V-0

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

### AVAILABLE ON TAPE AND REEL



Pad Layout



## 2032 ULTRA LOW PROFILE HOLDER

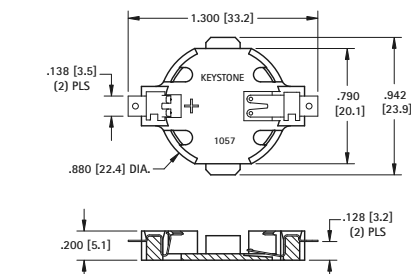


### MATERIAL:

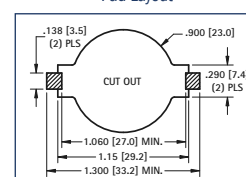
**Contacts:** .009 (.23) Phosphor Bronze, Gold Plate (Flash)  
**Base:** Glass filled LCP, UL Rated 94V-0

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

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



Pad Layout



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

## DESIGN ADVANTAGES...

- Reliable spring tension assures low contact resistance
- Retains battery securely to withstand shock and vibration
- All conductive polystyrene carrier tape meets ANSI/EIA - 481 standard

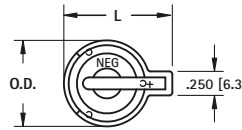
- Base material UL Rated 94V-0. Impervious to most industrial solvents
- Operating temperature range: -60°F to +293°F (-51°C to +145°C)

## IDEALLY SUITED FOR...

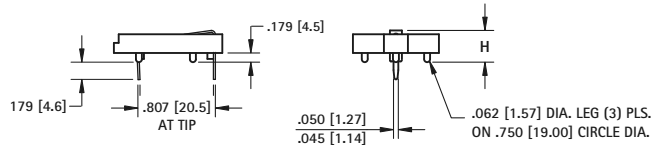
- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up
- Microprocessors and Microcomputer memory hold (desktop and laptop applications)

- Industrial and commercial security and alarm systems
- Communications power sources
- PC 104 applications

### 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



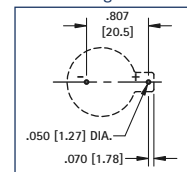
## MATERIAL:

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

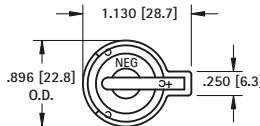
Base: PBT, UL Rated 94V-0

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

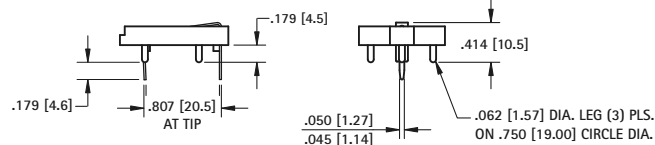
## Mounting Detail



### 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 applications



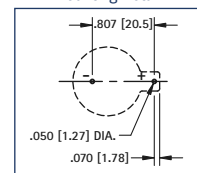
## MATERIAL:

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

Base: PBT, UL Rated 94V-0

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

## Mounting Detail

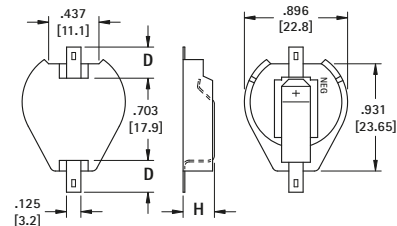


### 20mm SURFACE MOUNT COIN CELL HOLDER

#### AVAILABLE ON TAPE AND REEL



- 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



## MATERIAL:

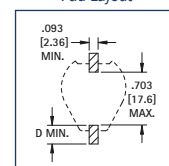
Contacts: .015 (.38) Steel

Base: High Temperature, Nylon 46, UL Rated 94V-0

Tin-Nickel Plate		Gold Plate (Flash)		D	H	NO. OF CELLS	BATTERY REFERENCE
CAT. NO.	ON TAPE & REEL	CAT. NO.	ON TAPE & REEL	PAD SIZE	HIEGHT		
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)			
1062	1062TR	1082	1082TR	.156 (4.0)	.406 (10.3)	(2) 2020, (2) 2025, (2) 2032	
1064	1064TR	1094	1094TR	.278 (7.1)		(3) 2012, (3) 2016	

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

## Pad Layout



# 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 Range: -60°F to 293°F (-51°C to 145°C)

## THM EZ-OUT COIN CELL HOLDER

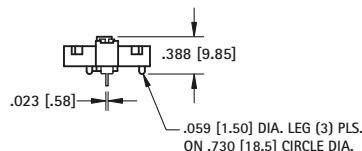
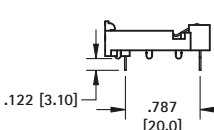
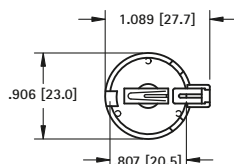


- Designed for manual insertion of battery.
- Mounts securely for wave soldering

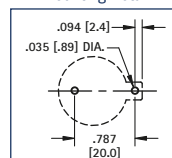
### MATERIAL:

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

CAT. NO.	BATTERY REFERENCE
1066	BR2025, CR2032

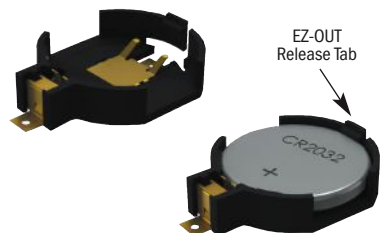


### Mounting Detail



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

### AVAILABLE ON TAPE AND REEL



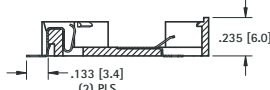
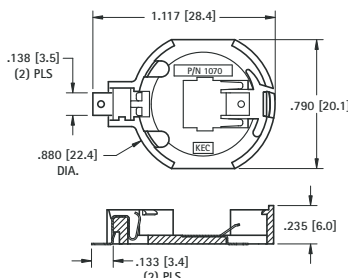
### MATERIAL:

**Contacts:** .009 (.23) Phosphor Bronze, Gold Plate (Flash)  
**Base:** High temperature Nylon 4/6, UL Rated 94V-0

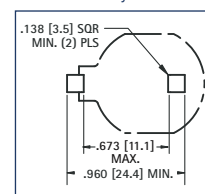
CAT. NO.	ON TAPE & REEL	BATTERY REFERENCE
1070	1070TR	CR2032

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

- 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



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



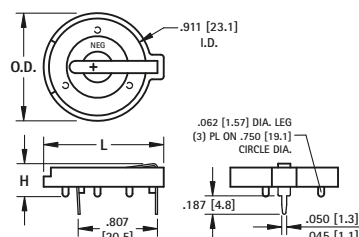
Thru Hole Mount

### MATERIAL:

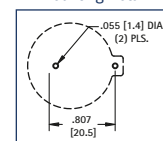
**Contacts:** .020 (.50) Spring Steel, Tin-Nickel Plate  
**Base:** PBT, UL Rated 94V-0  
**Operating Temperature:** -60°F to +293°F (-51°C to +145°C)

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 (Any 23mm)	BR2320, CR2320, CL2325, DL2330, CL2354, CR2335
107	.335 (8.5)	1.219 (31.0)	1.093 (27.8)	(1) Cell (Any 23mm)	
1027	.452 (11.5)	1.219 (31.0)	1.093 (27.8)	(1) 2354 (2) 2320, (2) 2325, (2) 2330	

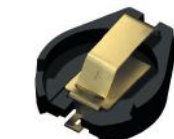
- Advanced air-flow design enhances air circulation around battery
- Unique notched slots assure quick and easy battery insertion and replacement



### Mounting Detail



### AVAILABLE ON TAPE AND REEL



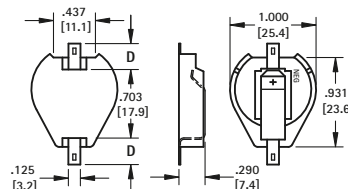
Surface Mount

### MATERIAL:

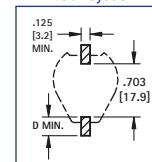
**Contacts:** .015 (.38) Steel  
**Base:** High Temp Nylon 46, UL Rated 94V-0  
**Operating Temperature:** -60°F to +293°F (-51°C to +145°C)

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

- 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



### Pad Layout



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

## 24mm



Thru Hole Mount

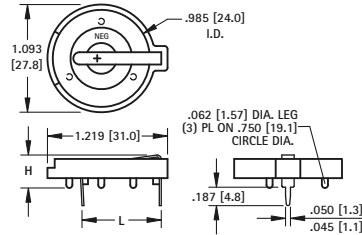
### MATERIAL:

Base: PBT, UL Rated 94V-0

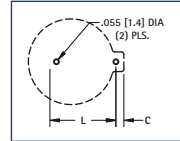
Contacts: .020 (.50) Spring Steel, Tin-Nickel Plate

Operating Temperature: -60°F to +293°F (-51°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)	(2) 2430	
1025-7	.074 (1.9)	.503 (12.8)	.805 (20.5)	(1) 2477	
				(2) 2430	



Mounting Detail



## 24mm VERTICAL



Thru Hole Mount

### MATERIAL:

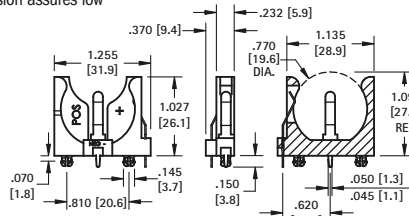
Base: PBT, UL Rated 94V-0

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

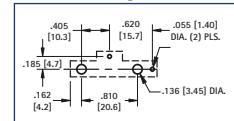
Operating Temperature: -60°F to +293°F (-51°C to +145°C)

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

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



Mounting Detail



## 24mm TOP Loading



Surface Mount

### MATERIAL:

Base: LCP, UL Rated 94V-0

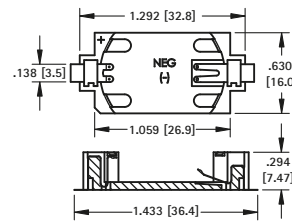
Contacts: .006 (.15) Phosphor Bronze, Gold Plate (Flash)

Operating Temperature: -60°F to +293°F (-51°C to +145°C)

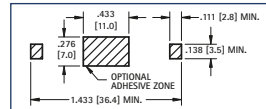
CAT. NO.	ON TAPE & REEL	BATTERY REFERENCE
1052	1052TR	(1) CR2450

### AVAILABLE ON TAPE AND REEL

- 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



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

## 24mm AUTO-IN/EZ-OUT



Thru Hole Mount

### MATERIAL:

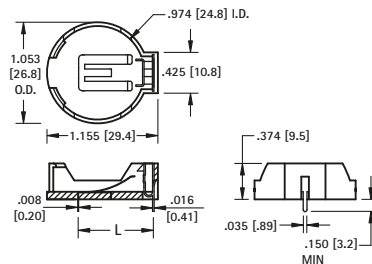
Contacts: .008 (.20) Phosphor Bronze, Nickel Plate

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

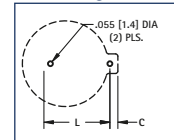
Operating Temperature: -60°F to +293°F (-51°C to +145°C)

CAT. NO.	L	C	BATTERY REFERENCE
1053	.788 (20.0)	.048 (1.2)	(1) CR2450

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



Mounting Detail



## 30mm



Thru Hole Mount

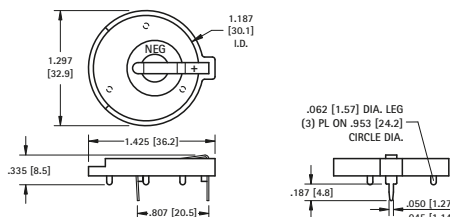
### MATERIAL:

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

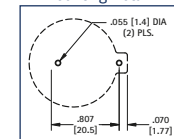
Base: PBT, UL Rated 94V-0

Operating Temperature: -60°F to +293°F (-51°C to +145°C)

CAT. NO.	BATTERY REFERENCE
301	BR3032



Mounting Detail





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

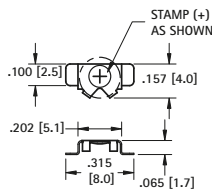
Economical and reliable SMT and THM coin cell retainers specifically designed for miniature electronic applications with limited board space.

- 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

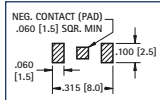


Surface Mount

AVAILABLE ON TAPE AND REEL



Mounting Detail



4.8mm

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

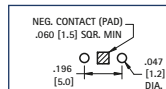
CAT. NO.	ON TAPE & REEL	BATTERY REFERENCE
2994	2994TR	ML414

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



Thru Hole Mount

Mounting Detail



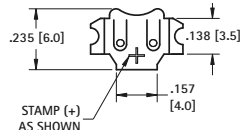
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2995	ML414

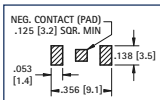


Surface Mount

AVAILABLE ON TAPE AND REEL



Mounting Detail



5.8mm

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

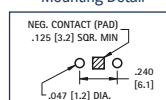
CAT. NO.	ON TAPE & REEL	BATTERY REFERENCE
2986	2986TR	379, 317

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



Thru Hole Mount

Mounting Detail



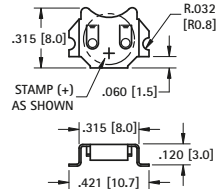
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2987	379, 317

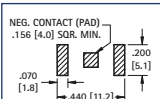


Surface Mount

AVAILABLE ON TAPE AND REEL



Mounting Detail

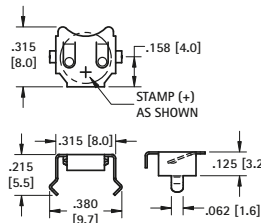


6.8mm

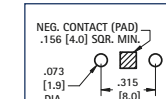
MATERIAL: .010 (.25) Phosphor Bronze

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

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

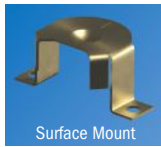


Mounting Detail



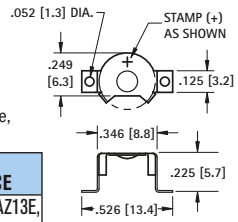
MATERIAL: .010 (.25) Phosphor Bronze, Tin-Nickel Plate

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

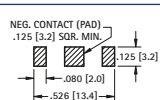


Surface Mount

AVAILABLE ON TAPE AND REEL



Mounting Detail

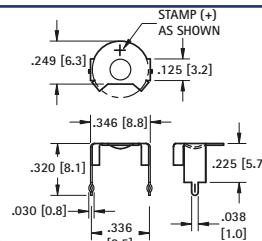


7.9mm

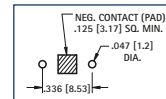
MATERIAL: .010 (.25) Phosphor Bronze, Gold Plate (Flash)

CAT. NO.	ON TAPE & REEL	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)

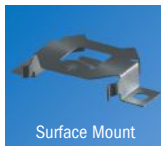


Mounting Detail



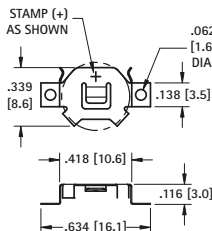
MATERIAL: .010 (.25) Phosphor Bronze, Tin-Nickel Plate

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

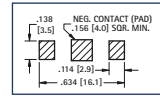


Surface Mount

AVAILABLE ON TAPE AND REEL



Mounting Detail

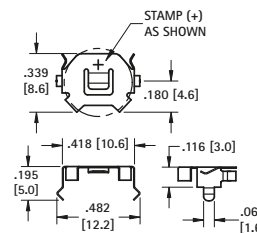


9 - 10mm

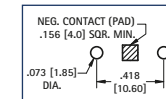
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

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

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



Mounting Detail



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

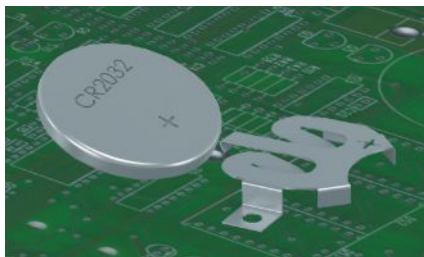
CAT. NO.	BATTERY REFERENCE
3031	CR927, CR1025



# 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

- 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

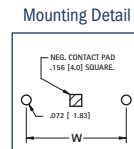
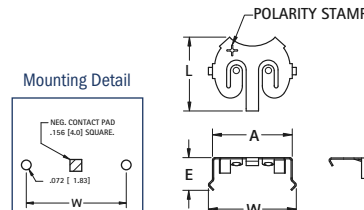
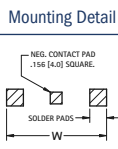
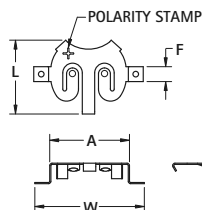
### THM

- 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						Thru Hole Mount		
CAT. NO.	ON TAPE	A	H	L	W	CELL DIA.	BATTERY REFERENCE	CAT. NO.
BULK	& REEL							BULK
2894	2894TR	.520 (13.2)	.106 (2.7)	.494 (12.5)	.700 (17.8)	12mm	CR1220	2895
2896	2896TR	.670 (17.0)	.171 (4.3)	.620 (15.8)	.920 (23.4)	16mm	BR1632	2897
2898	2898TR	.830 (21.1)	.171 (4.3)	.771 (19.6)	1.210 (30.7)	20mm	CR2032	2899

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



Surface Mount

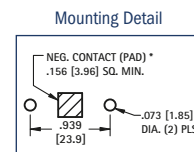
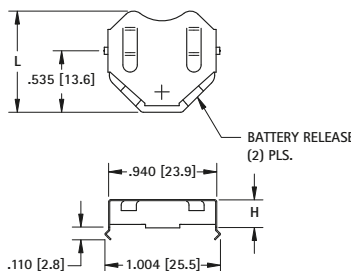
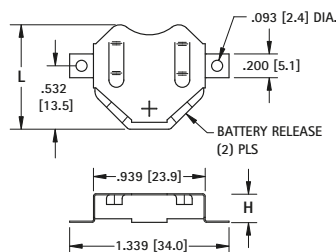
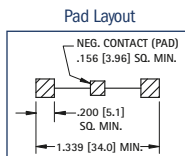
### 20mm CELLS

- 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						Thru Hole Mount			
Tin-Nickel Plate			Matte Tin Plate			6 VOLT (2) CELLS		3 VOLT (1) CELL	
CAT. NO.	CAT. NO.	ON TAPE	CAT. NO.	CAT. NO.	ON TAPE	L	H	L	H
LOOSE*	BULK	& REEL	LOOSE*	BULK	& REEL				
3020-2	3020	3020TR	3070-2	3070	3070TR	.890 (22.6)	.156 (4.0)	.890 (22.6)	.156 (4.0)
3022-2	3022	3022TR	3072-2	3072	3072TR	.877 (22.3)	.240 (6.1)	.877 (22.3)	.240 (6.1)
3024-2	3024	3024TR	3074-2	3074	3074TR	.877 (22.3)	.295 (7.5)	.877 (22.3)	.295 (7.5)

\* Supplied Unassembled

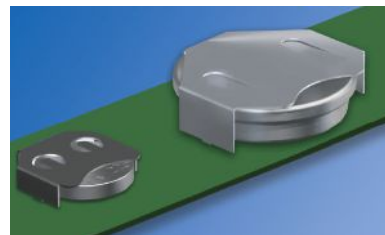
**Tape & Reel Spec's:** 56mm wide; 28mm pitch; 13 inch reel: 3020TR, 3070TR 400 pieces per reel; 3022TR, 3072TR 250 pieces per reel; 3024TR, 3074TR 250 pieces per reel

## THRU HOLE (THM) COIN CELL RETAINERS

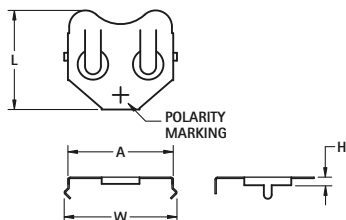
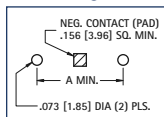


- Snap-In legs maintain relative positioning prior and during soldering
- Compatible with wave soldering processes
- Thru hole solder legs provides excellent mechanical strength
- Lowest profile mounting as compared to coin cell holders
- Economical design allows for PCB pads to be used as negative contacts
- 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

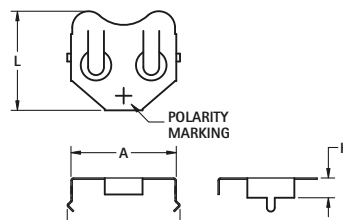
**MATERIAL:** .010 (.25) Phosphor Bronze, Tin-Nickel Plate



Mounting Detail

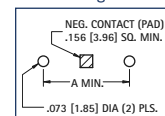


**FIG. 1 - Compact**



**FIG. 2 - Low Profile**

Mounting Detail



\*Negative pad can be replaced with THM negative contact. See page 12.

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	BR2320, CL2330, CR2320, BR2325, CR2325, DL2325
<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

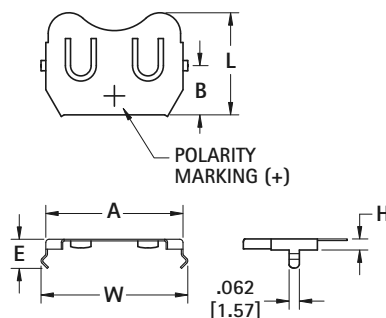
## THRU HOLE (THM) ULTRA LOW PROFILE COIN CELL RETAINER



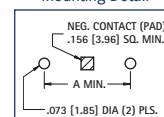
The Ultra Low Profile Coin Cell retainers are designed specifically for the most popular 20mm & 24mm coin cells. It will provide reliable contact as well as retain the coin cell with the minimum space needed. Ideal for small applications such as remote controls or active RFID tags.

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

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



Mounting Detail



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 also CR2025, CR2020
<b>3033</b>	1.000 (25.4)	.067 (1.7)	.681 (17.3)	1.055 (26.8)	24mm	CR2412, BR2412

\* Nickel Plate

11.6mm to 30mm COIN CELL RETAINERS

# 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 ANSA/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

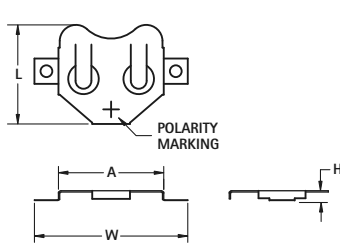
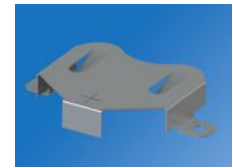
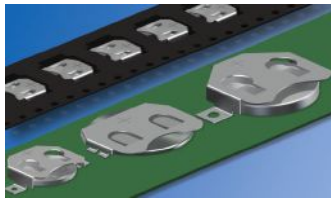
- Tin Nickel plating provides low contact resistance and will hold up to high temperature lead free soldering
- Dual spring contact assures battery will have proper contact with PCB
- Battery can be easily replaced without any tools

## SURFACE MOUNT (SMT)

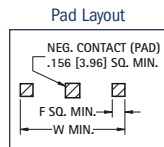
### AVAILABLE ON TAPE AND REEL

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

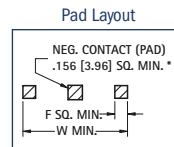
**MATERIAL:** .010 (.25) Phosphor Bronze



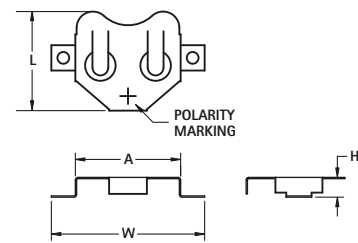
**FIG. 1 - Compact**



\*SMT negative contact pads not recommended for compact retainers.



\*Negative pad can be replaced with SMT negative contact. See page 12.



**FIG. 2 - Low Profile**

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								
2996	2996TR	3096	3096TR	2	.520 (13.2)	.235 (6.0)	.475 (12.1)	.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)	.475 (12.1)	.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)	.594 (15.1)	.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)	.782 (19.9)	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)	.782 (19.9)	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)	.832 (21.1)	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)	.819 (20.8)	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)	.918 (23.3)	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)	.890 (22.6)	1.400 (35.6)	24mm	CR2450, DL2450	56mm wide; 32mm pitch; 200/reel
3046	3046TR	—	—	2	1.227 (14.3)	.167 (4.2)	1.020 (25.9)	1.627 (41.3)	30mm	CR3032	56mm wide; 32mm pitch; 400/reel

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

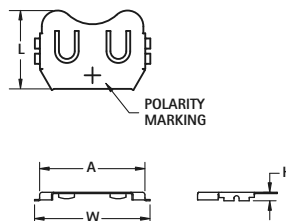


### AVAILABLE ON TAPE AND REEL

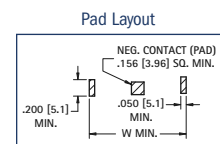
Ultra Low Profile Coin Cell Retainers are designed specifically for the most popular coin cells. It will provide reliable contact as well as retain the coin cell with the minimum space needed. Ideal for small applications such as remote controls or active RFID tags.

- 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



**FIG. 3 - Ultra Low**



\*SMT negative contact pads not recommended for Ultra Low Profile retainers.

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, DL2012	44mm wide; 24mm pitch; 1000/reel
3034*	3034TR*	3044*	3044TR*	3	.835 (21.2)	.160 (4.1)	.635 (16.1)	0.915 (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 (17.3)	1.080 (27.4)	24mm	BR2412, CR2412	44mm wide; 24mm pitch; 1000/reel

\*Nickel Plate

# SURFACE MOUNT (SMT) COIN CELL ENCLOSURE CONTACTS

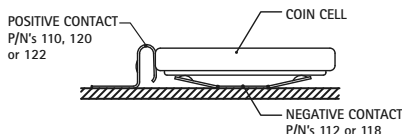
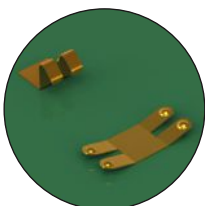
- Contacts for Enclosure cases with self contained battery compartments
- Design facilitates easy battery access, removal & installation

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

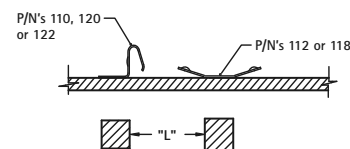
- Positive and Negative contacts can be used as a design pair or individually on a PCB
- Accommodates cell diameters from 12mm to 30mm

AVAILABLE ON TAPE AND REEL

MATERIAL: .006 (.15) Stainless Steel, Gold Plate (Flash)



Refer to page 38 for Mounting Details

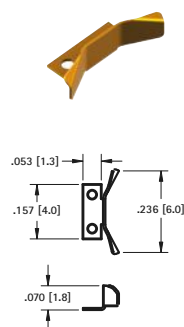


## CONTACT SELECTION GUIDE

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

## POSITIVE

### LOW BATTERY HEIGHT 1.2mm to 2.0mm

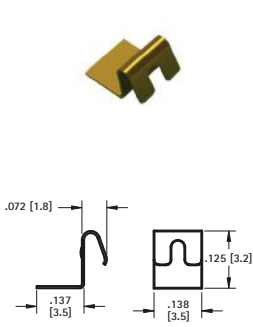


CAT. NO. 120 Bulk

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

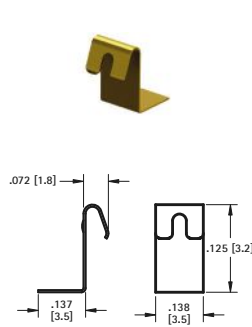


CAT. NO. 110 Bulk

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



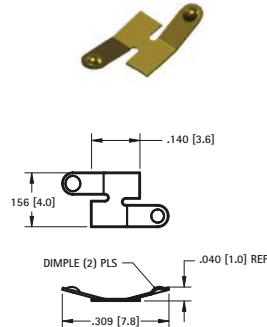
CAT. NO. 122 Bulk

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

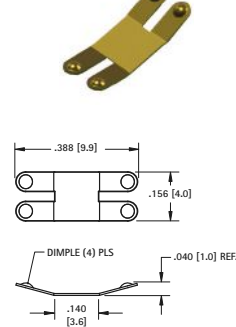


CAT. NO. 118 Bulk

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

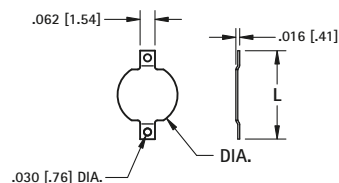
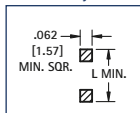
AVAILABLE ON TAPE AND REEL

## SMT COMPACT\*



- Assures proper contact

Pad Layout



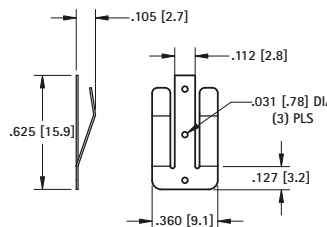
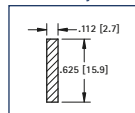
DWG. 1 MATERIAL: .008 (.20) Brass

## SMT SPRING CONTACT\*



- Assures proper contact

Pad Layout

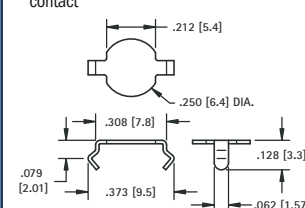


DWG. 2 MATERIAL: .010 (.25) Phosphor Bronze

## THM SNAP IN\*



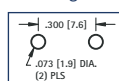
- Assures proper contact



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

CAT. NO. 2990

Mounting Detail



TIN-NICKEL PLATE	MATTE TIN PLATE						
CAT. NO. BULK	ON TAPE & REEL	CAT. NO. BULK	ON TAPE & REEL	DWG.	L	DIA.	TAPE & REEL SPECS
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



Refer to page 40 for Battery Contact Layout & Mounting Details

- 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



**MATERIAL:** Spring Steel, Tin-Nickel Plate

"AAAA" • "A27"

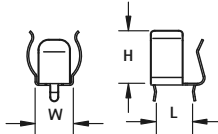


FIG. 1

"AAA" • "N" • "A23" • "AA" • "CR2"

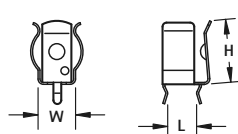


FIG. 2

"A" • "17500" • "18350" • "18650" • "20700" • "21700"

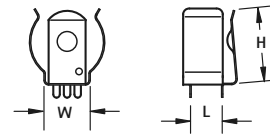


FIG. 3

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

"AAAA" • "A27"

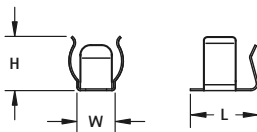


FIG. 4

"AAA" • "N" • "A23" • "AA" • "CR2"

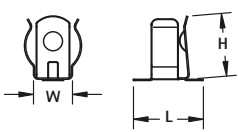


FIG. 5

"A" • "17500" • "18350" • "18650" • "20700" • "21700"

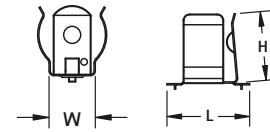


FIG. 6

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	"AA" • "CR2"	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 &amp; 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

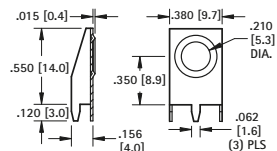


Refer to page 40 for Battery Contact Layout & Mounting Details

## COIL SPRING

"AA" • "CR2" • "A"

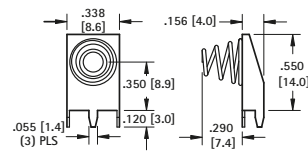
(+ ) POSITIVE BUTTON



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

**CAT. NO. 595**

(- ) NEGATIVE SPRING

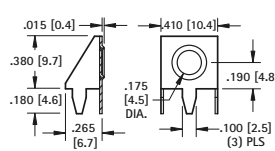


**MATERIAL:**  
**Frame:** .015 (.38) Steel,  
Matte Tin Plate

**CAT. NO. 628**

"AAA" • "N" • "A23"

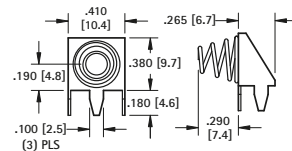
(+ ) POSITIVE BUTTON



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

**CAT. NO. 637**

(- ) NEGATIVE SPRING



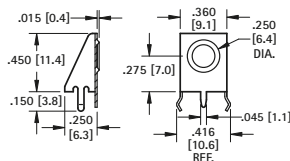
**MATERIAL:**  
**Frame:** .015 (.38)  
Steel, Matte Tin Plate

**CAT. NO. 629**

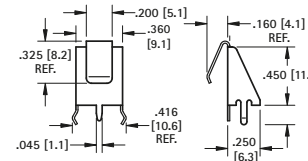
## LEAF SPRING

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

"AA" • "CR2" • "A"



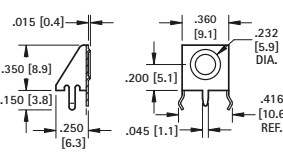
**CAT. NO. 596**



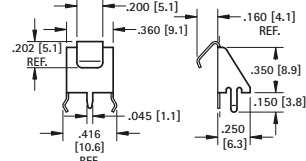
**CAT. NO. 590**

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

"AAA" • "N" • "A23"



**CAT. NO. 597**

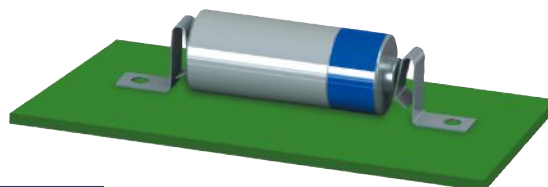


**CAT. NO. 591**

## SURFACE MOUNT LEAF-SPRING CONTACTS

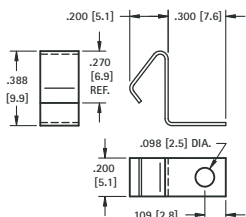
AVAILABLE ON TAPE AND REEL

- 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



Refer to page 39 for Battery Contact Layout & Mounting Details

"AAA" • "AAAA" • "A23" • "N"

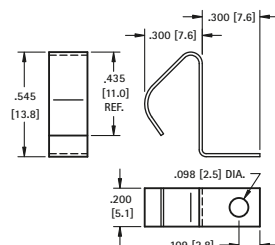


**MATERIAL:** .010 (.25) Spring Steel

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



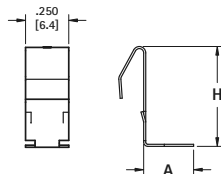
- Reliable spring tension assure low contact resistance and dependable connection
- Symmetrical design allows these contacts to function both as a positive and negative contacts
- Economical and reliable contacts
- Designed for direct placement onto PCB, no wire leads required
- Unique spring tension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

**MATERIAL:** .012 (.30) Stainless Steel

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

## SURFACE MOUNT

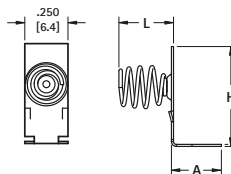
### LEAF SPRING



**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)

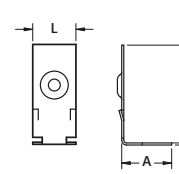
### COIL SPRING



**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

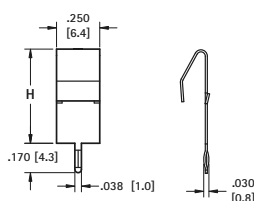


**Finish:** Gold Plate (Flash)

CAT. NO.	BATTERY SIZE	H
1076-1	"AAA"	.395 (10.0)
1088-1	"AA"	.545 (13.8)

## THRU HOLE MOUNT

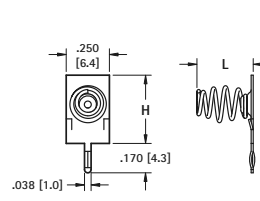
### LEAF SPRING



**Finish:** Tin-Nickel Plate

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

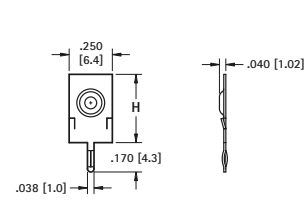
### COIL SPRING



**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)

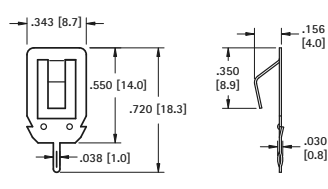
### BUTTON CONTACT



**Finish:** Tin-Nickel Plate

CAT. NO.	BATTERY SIZE	H	A
1075-1	"AAA"	.435 (11.1)	.250 (6.4)
1087-1	"AA"	.578 (14.9)	.289 (7.3)

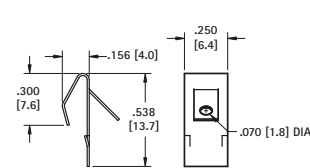
### "AAA" • "N" • "AA" • "CR2" • "A"



**Finish:** Tin-Nickel Plate

**CAT. NO. 108-2**

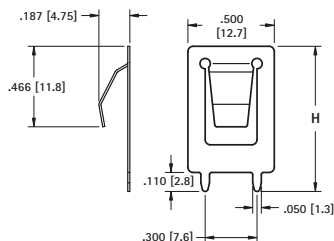
### "AA" • "A" • "17500" • "18350" • "18650" • "C" • "D"



Solder Lug

**Finish:** Tin-Nickel Plate

**CAT. NO. 1107-1**

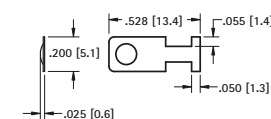


**MATERIAL:** .012 (.30) Spring Steel, Nickel Plate

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"

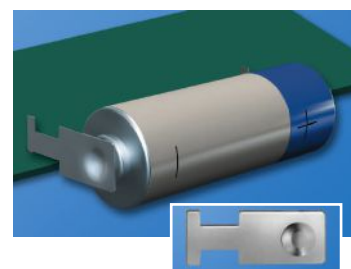
### "AAA" • "AAAA" • "N" • "12V"

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

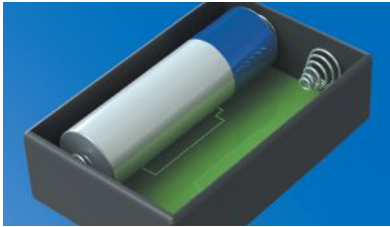


**CAT. NO. 230-1**

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

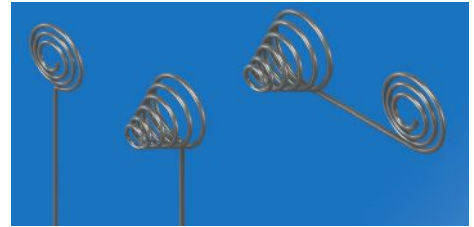


# SLIDE-IN PC MOUNT CONTACTS

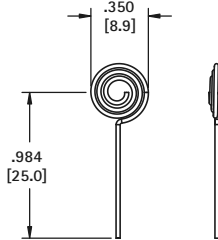


- Economical and reliable contacts
- Designed for direct placement onto PCB, no wire leads required
- Unique spring tension adjusts to variations in battery length
- Reliable spring tension assure low contact resistance and dependable connection

Refer to page 41 for Battery Contact Layout & Mounting Details



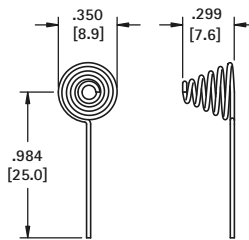
"AA" • "CR2" • "A" • "17500" • "18350" • "18650"



CAT. NO. 242

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

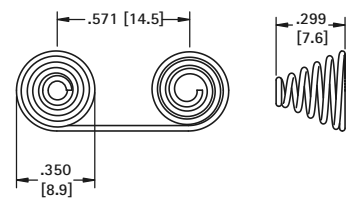
"AA" • "CR2" • "A" • "17500" • "18350" • "18650"



CAT. NO. 243

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

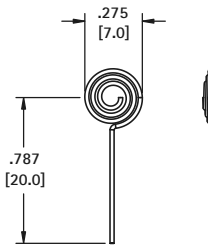
"AA"



CAT. NO. 244

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

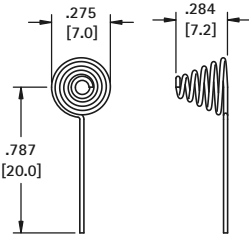
"AAAA" • "A23" • "A27" • "AAA" • "N"



CAT. NO. 179

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

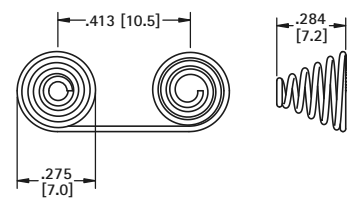
"AAAA" • "A23" • "A27" • "AAA" • "N"



CAT. NO. 180

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

"AAA"

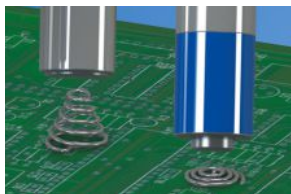


CAT. NO. 181

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

## BATTERY SPRING CONTACTS

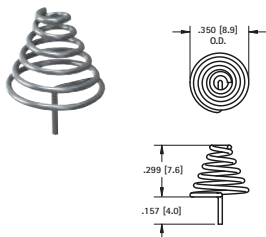
THRU-HOLE MOUNT • "AA" • "CR2"



Solders directly to PCB, no wiring required

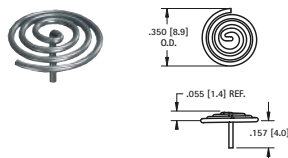
MATERIAL: .024 (.60) Dia Spring Steel, Nickel Plate

NEGATIVE



CAT. NO. 240

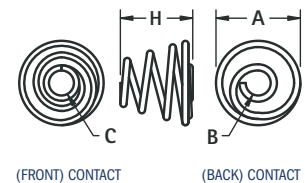
POSITIVE



CAT. NO. 241

RIVET MOUNT

Easy to assemble with eyelets or rivets. Refer to page 146.



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	"213 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:

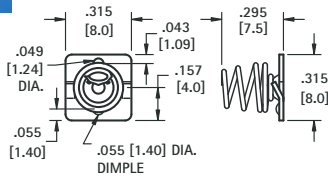
**Plate:** .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate

Refer to page 42 for Battery Contact Layout & Mounting Details

### "AAA" • "AAAA" • "N" • "12V"



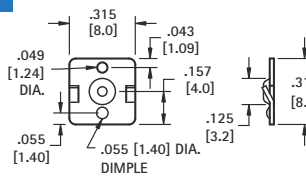
(-) NEGATIVE SPRING



CAT. NO. 5203



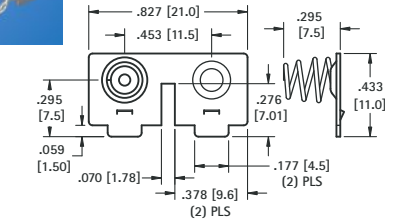
(+) POSITIVE BUTTON



CAT. NO. 5225



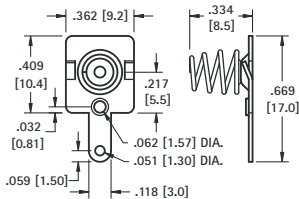
DUAL CONTACT (RIGHT)



CAT. NO. 5213



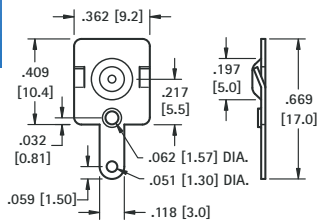
(-) NEGATIVE SPRING WITH TAB



CAT. NO. 5204



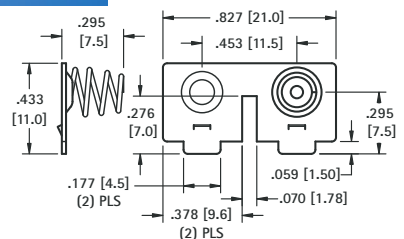
(+) POSITIVE BUTTON WITH TAB



CAT. NO. 5226



DUAL CONTACT (LEFT)

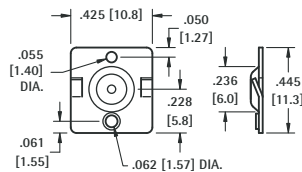


CAT. NO. 5214

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



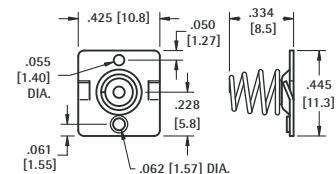
(+) POSITIVE BUTTON



CAT. NO. 5224



(-) NEGATIVE SPRING

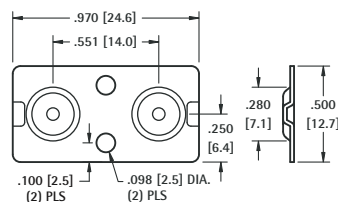


CAT. NO. 5202

### "AA"



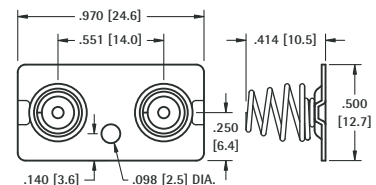
DUAL BUTTON CONTACT



CAT. NO. 5227



DUAL SPRING CONTACT



CAT. NO. 5228

## SPRING & BUTTON CONTACTS



- 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

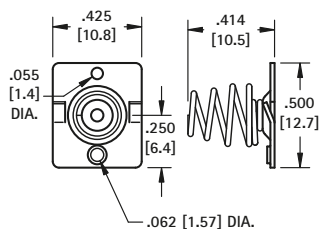
### MATERIAL:

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

Refer to page 42 for Battery Contact Layout & Mounting Details

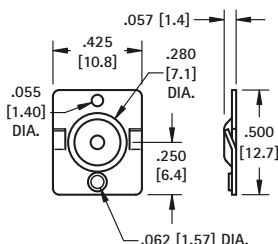
"AA" - "CR2" - "A" - "17500" - "18350" - "18650"

(-) NEGATIVE SPRING



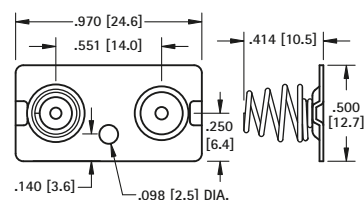
CAT. NO. 5222

(+) POSITIVE BUTTON



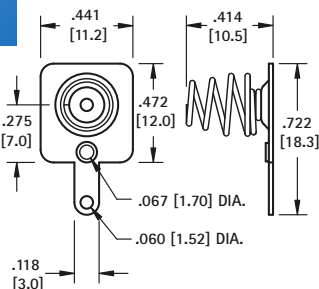
CAT. NO. 5221

DUAL CONTACT ("AA" ONLY)



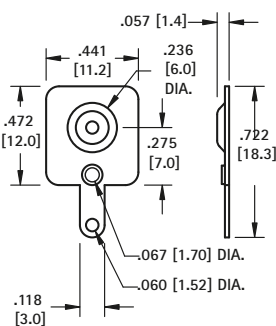
CAT. NO. 5212 Left or Right

(-) NEGATIVE SPRING WITH TAB



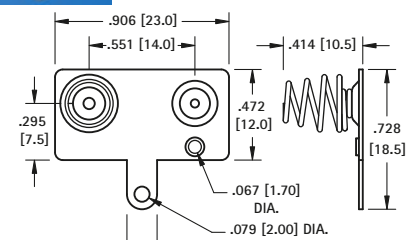
CAT. NO. 5201

(+) POSITIVE BUTTON WITH TAB



CAT. NO. 5223

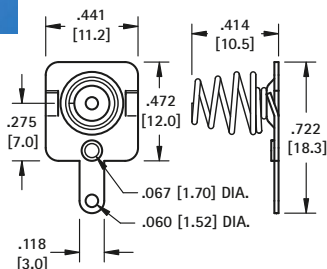
DUAL CONTACT ("AA" ONLY)



CAT. NO. 5210 Left

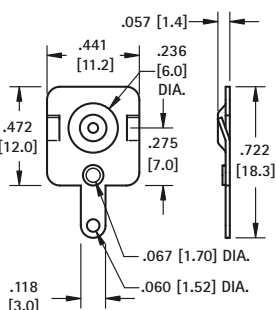
CAT. NO. 5211 Right (Shown)

(-) NEGATIVE SPRING WITH TAB/LANCE



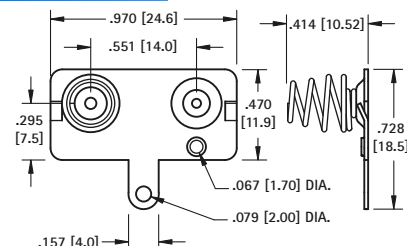
CAT. NO. 5220

(+) POSITIVE BUTTON WITH TAB/LANCE



CAT. NO. 5219

DUAL CONTACT WITH TAB ("AA" ONLY)



CAT. NO. 5218 Left

CAT. NO. 5217 Right (Shown)

# SPRING & BUTTON CONTACTS

- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- "Spring 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

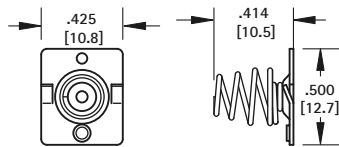


## MATERIAL:

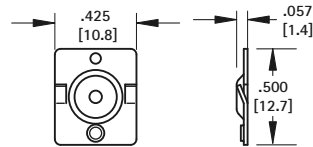
**Plate:** .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate

Refer to page 42 for Battery Contact Layout & Mounting Details

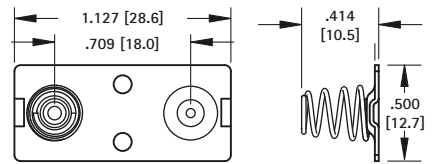
### "A" CELL



CAT. NO. 5222



CAT. NO. 5221

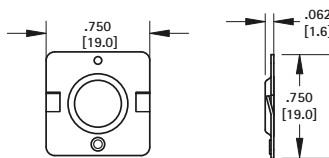


CAT. NO. 5207

### "C" CELL



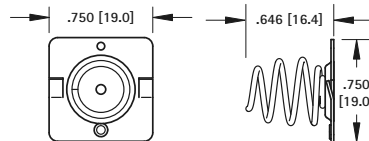
(+) POSITIVE BUTTON



CAT. NO. 5240



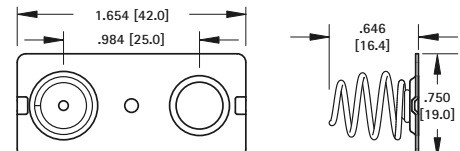
(-) NEGATIVE SPRING



CAT. NO. 5241



DUAL CONTACT

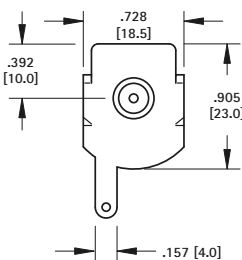


CAT. NO. 5242

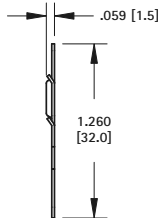
### "D" CELL



(+) POSITIVE BUTTON

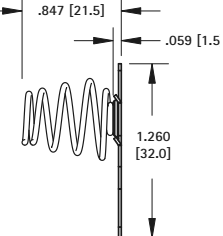
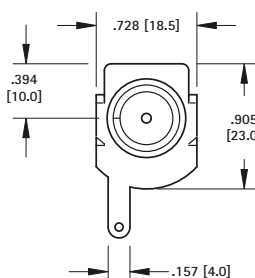


CAT. NO. 5250

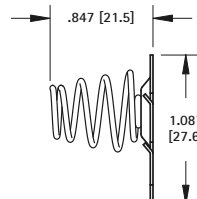
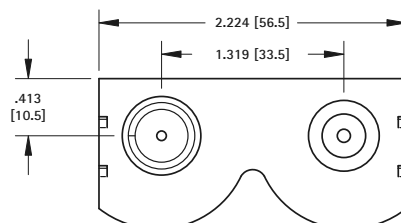


CAT. NO. 5251

(-) NEGATIVE SPRING



DUAL CONTACT



CAT. NO. 5253 Left

CAT. NO. 5252 Right (Shown)

## SNAP-ON CONTACTS



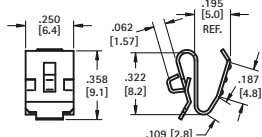
- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- Solder "ear" to facilitate soldering of wire lead
- Unique spring tension contact adjusts to variations in battery length
- Reliable spring tension contacts assure low contact resistance
- Clips easily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

Refer to page 42 for Battery Contact Layout & Mounting Details

### "AAA" • "N" • "A23" • "A27"



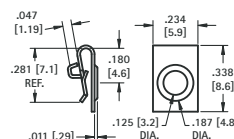
**CAT. NO. 204**



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



**CAT. NO. 238**

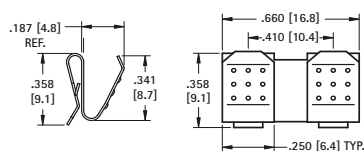


**MATERIAL:** .010 (.25) Stainless Steel, Nickel Plate

### "AAA"



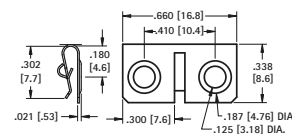
**CAT. NO. 202**



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



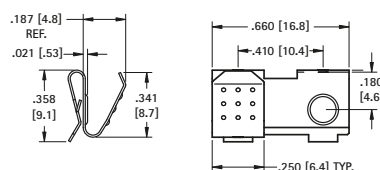
**CAT. NO. 294**



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



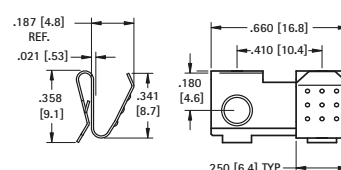
**CAT. NO. 295**



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



**CAT. NO. 296**

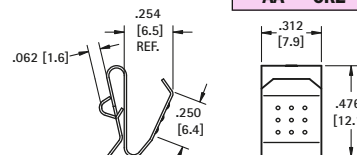


**MATERIAL:** .010 (.25) Spring Steel, Nickel Plate

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



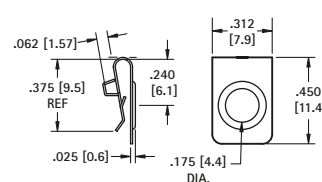
**CAT. NO. 209**



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



**CAT. NO. 228**



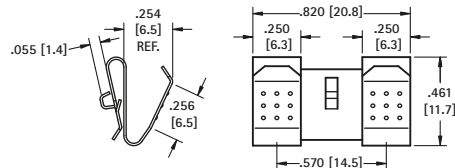
**MATERIAL:** .010 (.25) Stainless Steel, Nickel Plate

### "AA"



**CAT. NO. 288**

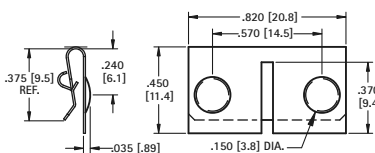
The (2) two leaf contacts are separate, allowing a divider between the batteries.



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



**CAT. NO. 292**

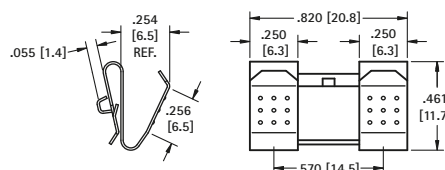


**MATERIAL:** .010 (.25) Stainless Steel, Nickel Plate



**CAT. NO. 210**

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

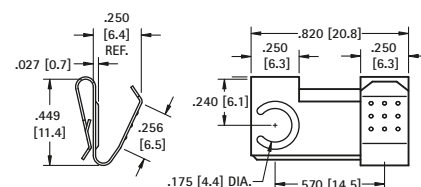


**MATERIAL:** .012 (.30) Spring Steel, Nickel Plate



**CAT. NO. 291 Right**

**CAT. NO. 290 Left (shown)**



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



# SNAP-ON COIL SPRING 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

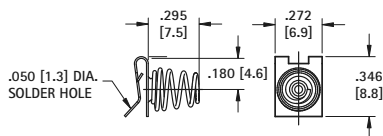
- Sharp barbs securely anchor contact in place
- Clips easily over .060 (1.5) to 0.70 (1.8) wall
- Long spring will accommodate variations in battery lengths

**MATERIAL:** Steel, Nickel Plate

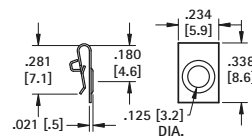
Refer to page 42 for Battery Contact Layout & Mounting Details



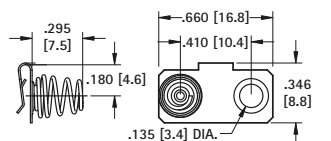
**"AAA"**



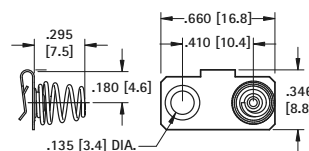
**CAT. NO. 267**



**CAT. NO. 238**

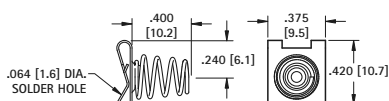


**CAT. NO. 299**

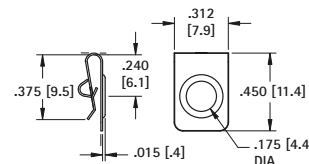


**CAT. NO. 287**

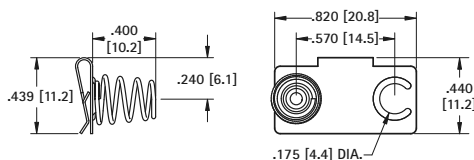
**"AA"**



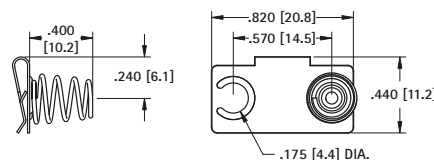
**CAT. NO. 289**



**CAT. NO. 228**



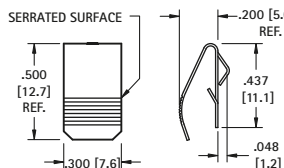
**CAT. NO. 297**



**CAT. NO. 293**

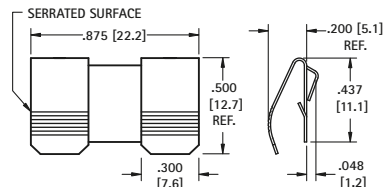
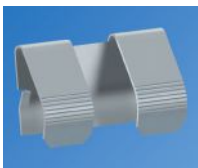
## SLIDE-IN MOUNT CONTACTS

**"AA" • "CR2" • "A" • "9V" • "17500" • "18350" • "18650"**



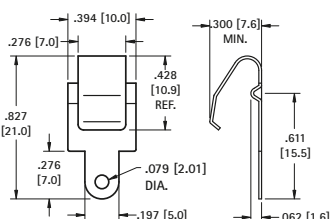
**CAT. NO. 5205**

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



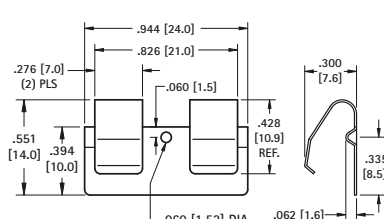
**CAT. NO. 5206**

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



**CAT. NO. 5209**

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



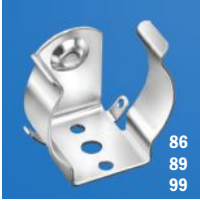
**CAT. NO. 5208**

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

## RUGGED STEEL BATTERY CLIPS

"AA" - "C" - "D"

Refer to page 41 for Battery Contact Layout & Mounting Details



Non-Insulated

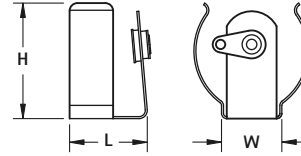
**Base:** Steel, Nickel Plate  
**Contacts:** Brass, Nickel Plate

- 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

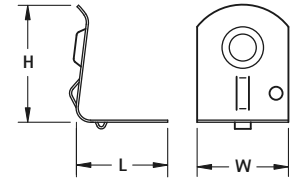
"AA" - "C" - "D"



Refer to page 41 for Battery Contact Layout & Mounting Details

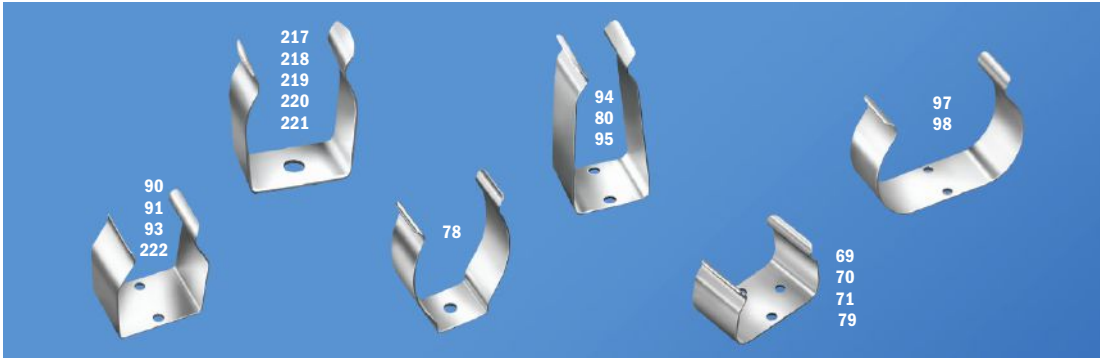
- Designed for mounting in self-contained, non-metallic battery compartments
- Reliable spring tension assures low contact resistance
- Recessed contact holds battery in place
- All clips have anti-rotation tab

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
<b>"AAAA" Cell (7.5 - 8.5mm Dia)</b>		
251	One cell	Steel
<b>"AAA" Cell (9.5 - 12mm Dia)</b>		
90	One cell	Aluminum
<b>"AA", "CR2" Cell (13.5 - 17.0mm Dia)</b>		
91	One cell	Aluminum
69	Two Cell	Steel
<b>"A" Cell (16.0- 18.0mm Dia)</b>		
70	Two Cell	Aluminum

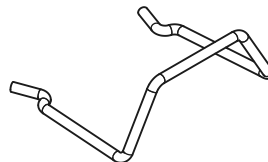
CAT. NO.	DESCRIPTION	MATERIAL
<b>Sub C Cell (22.0 - 23.0mm Dia)</b>		
221	One cell	Steel
<b>C Cell (22.0 - 29.0mm Dia)</b>		
222	One cell	Steel
93	One cell	Aluminum
97	Two Cell	Aluminum
<b>D Cell (30.0 - 35.0mm Dia)</b>		
94	One cell	Aluminum
78	One cell	Steel
98	Two Cell	Aluminum

CAT. NO.	DESCRIPTION	MATERIAL
<b>NiCd Cell</b>		
217	One cell, 35-38mm Dia.	Steel
218	One cell, 36-43mm Dia.	Steel
219	One cell, 51-64mm Dia.	Steel
<b>9V Cell</b>		
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



FIG. 2 STEEL, PHENOLIC BASE

### ALUMINUM



FIG. 1 ALUMINUM



FIG. 2 ALUMINUM

### CONNECTED IN SERIES

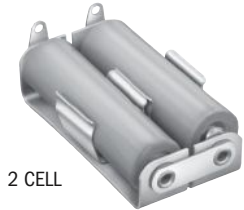
Features pre-connected jumper strap insulated from the Aluminum base. Batteries held in series circuit without need of additional wiring.

### 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	1
147	2
148	3
<b>"C" CELL</b>	
149	1
150	2
151	3
<b>"D" CELL</b>	
152	1
153	2
158	3

### WITH PC LUGS

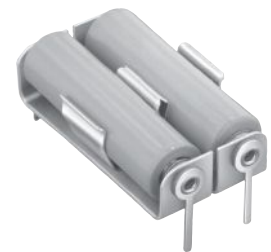
For printed circuitry we have standardized our most popular holders with PC Lugs. Choice of single or multiple holders "AA" assembled with PC solder lugs.

### SPECIFICATIONS:

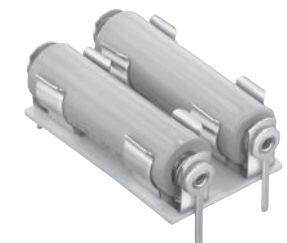
**Base:** Steel, Phenolic or Aluminum

**Contacts:** Brass, Nickel Plate

**Solder Lugs:** Brass, Tin Plate Jumper, Brass, Nickel Plate



ALUMINUM



STEEL

STEEL HOLDERS		HOLDS NO. OF CELLS	FIG. NO.	ALUMINUM HOLDERS
ONE CONTACT INSULATED	ALL CONTACTS INSULATED			ALL CONTACTS INSULATED
CAT. NO.	CAT. NO.			CAT. NO.
“AAA” CELL				
—	—	1	1	137
—	—	2	1	138
—	—	3	1	169
—	—	4	1	170
“AA” CELL				
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
“C” CELL				
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
“D” CELL				
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
“1/2 AA” LITHIUM CELL				
—	1103	1	1	—
LITHIUM “2/3 A” OR “CR123” BATTERY				
—	—	1	1	132

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

\*Dual cell, Steel holders will have Phenolic base

# 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

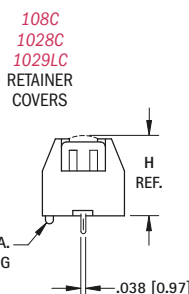
## APPLICATIONS

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

RETAINER  
COVERS



## THM LOW PROFILE



## SPECIFICATIONS

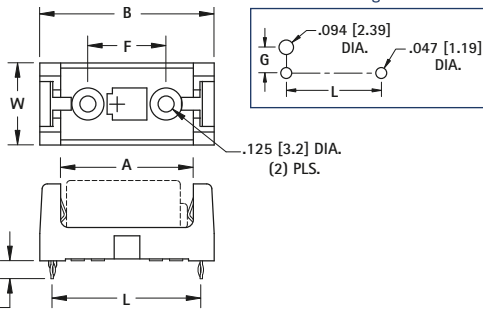
Base/Retainer Cover: PBT, UL 94V-0

Contacts: .012 (.30) Stainless Steel, Tin-Nickel Plate

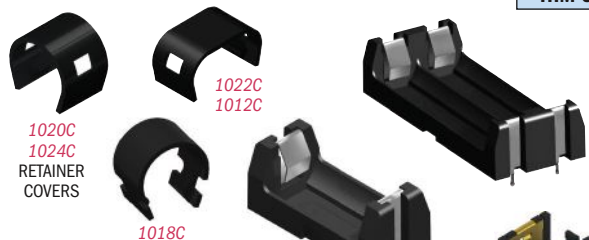
Operating Temp Range: -60°F to +293°F (-51°C to +145°C)

HOLDER	COVER										
CAT. NO.	CAT. NO.	L	W	H (Ref. Dim)	A	B	F	G	CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
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

## Mounting Detail



## THM ULTRA LOW PROFILE



## SPECIFICATIONS

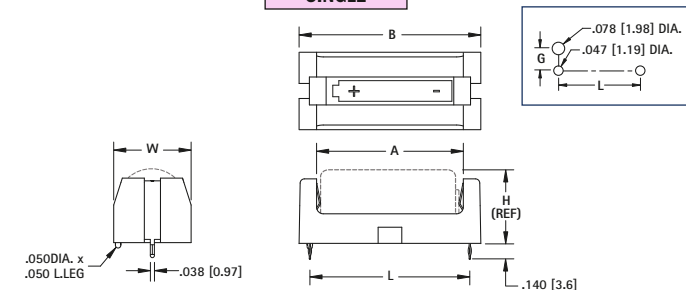
Base: High Temp Nylon 46, UL 94V-0

Contacts: .012 (.30) Stainless Steel, Tin-Nickel Plate

Operating Temp Range: -60°F to +293°F (-51°C to +145°C)

## SINGLE

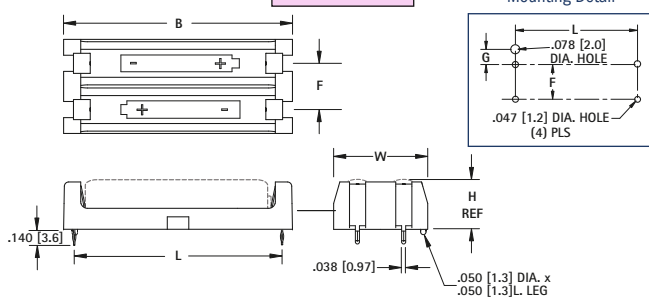
## Mounting Detail



DWG. 1

## DUAL

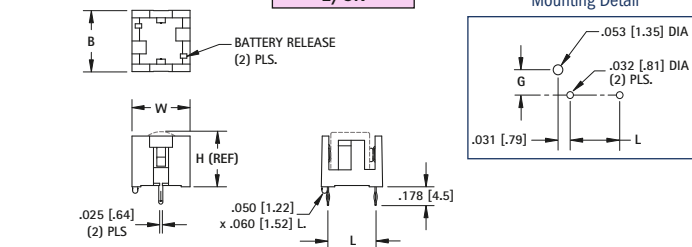
## Mounting Detail



DWG. 2

## "1/3N"

## Mounting Detail



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

DWG. 3

DWG. 2		DWG. 3										
HOLDER	COVER	DWG NO.	L	W	H (Ref. Dim)	B	F	G	CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE	
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	All Major Manufacturers	
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	All Major Manufacturers	
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	Energizer 544, Duracell PX28L, Kodak K28A & KS28, Saft LCP3, Maxell 4LR44, Sanyo CR14250SE	
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	Duracell DL2/3A, Kodak K123L, Saft 450SC & VR0450	
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	Sanyo CR17335SE	
503	—	3	.450 (11.4)	.540 (13.7)	.506 (12.9)	.570 (14.5)	—	.240 (6.1)	"1/3 N"	300 pieces per tray	Duracell DL1/3N, Sanyo K58L, Energizer CR1/3N	

\*Base Material: PBT UL 94V-0



# SMT LOW PROFILE LITHIUM-ION & ALKALINE CELL HOLDERS

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

## FEATURES

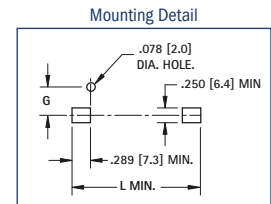
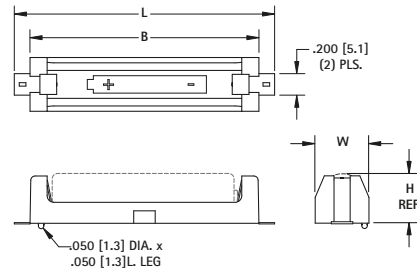
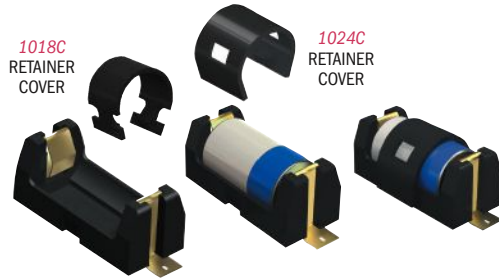
- Low profile surface mount holders for Cylindrical Lithium and Alkaline batteries
- UL 94V-0 Heat resistant Nylon Housings well suited for reflow soldering
- Designed for vacuum pick and place assembly
- Gold-plated Phosphor Bronze contacts assure low contact resistance and are readily solderable

- 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 (-51°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



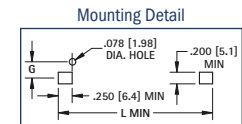
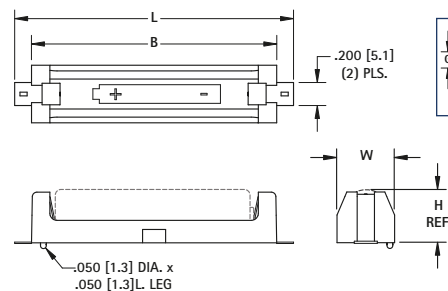
## SPECIFICATIONS

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

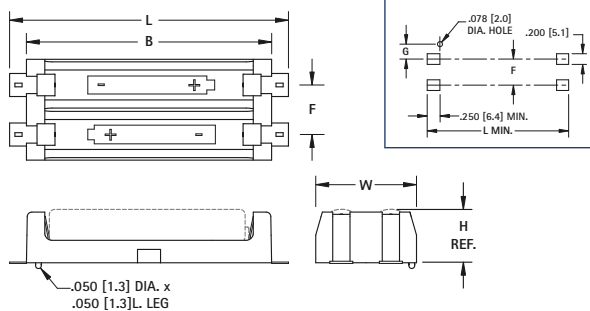
Contacts: .012 (.30) Stainless Steel, Gold Plate (Flash)

Operating Temp: -60°F to +293°F (-51°C to +145°C)

Packaging Spec's: Supplied in trays

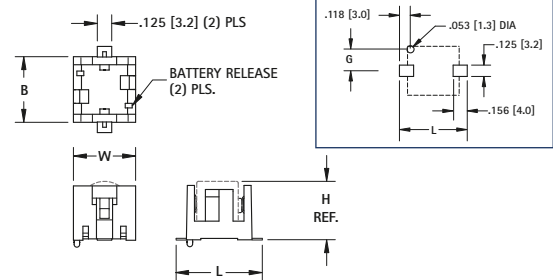
DWG 1

## DUAL



DWG 2

## "1/3N"



DWG 3

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

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



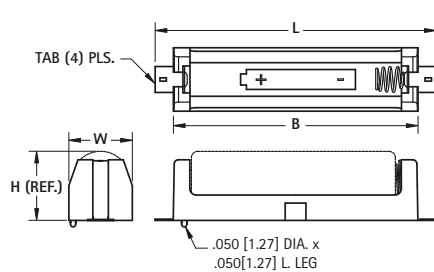
## FEATURES

- 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 (-51°C to 145°C)

## APPLICATIONS:

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

## SMT



DWG. 1

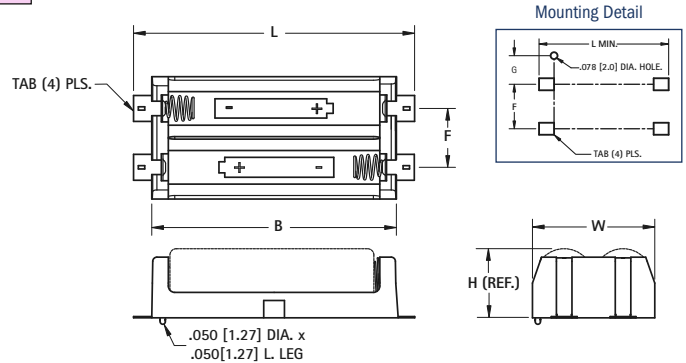
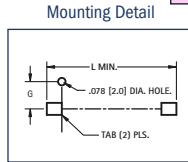
## SPECIFICATIONS

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 (-51°C to 145°C)

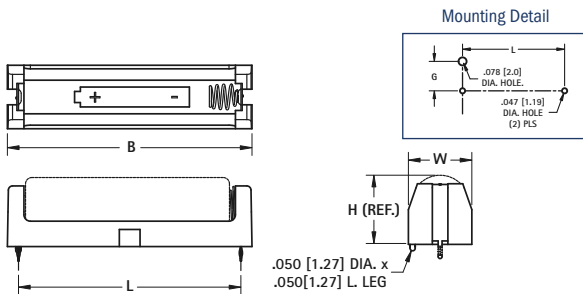
Packaging Spec's: Supplied in trays



DWG. 2

HOLDER	COVER	DWG NO.	L	W	H (Ref. Dim)	B	F	G	CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
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	
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	
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



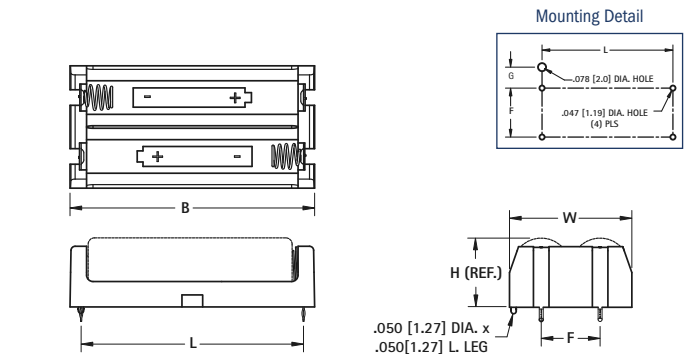
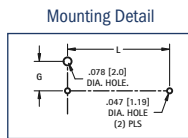
DWG. 3

## SPECIFICATIONS

Base: High Temp Nylon 46 - UL94V-0

Contacts: .012 (.30) Stainless Steel .020 (0.50) Dia. Music Wire - Nickel Plate

Packaging Spec's: Supplied in trays



DWG. 4

HOLDER	COVER	DWG NO.	L	W	H (Ref. Dim)	B	F	G	CELL SIZE	PACKAGING SPECS	BATTERY CROSS REFERENCE
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	
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	
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	

\*Base Material: PBT UL 94V-0

# 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

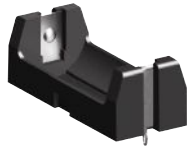
Base: High Temp Nylon 46, UL Rated 94V-0

Operating temp range: -60°F to 293°F (-51°C to 145°C)

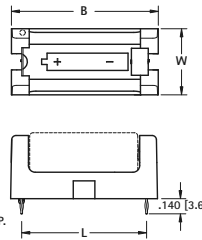
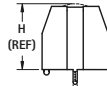
Contacts: .012 (.30) Stainless Steel, Gold Plate (Flash) - SMT

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

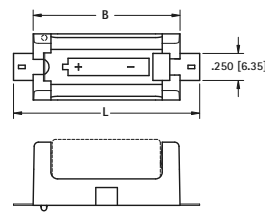
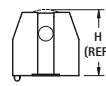
### THM



Thru-Hole Mount (THM)



1018C  
RETAINER  
COVER  
FITS ALL  
HOLDERS

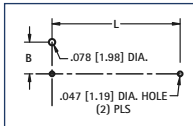


### SMT



Surface Mount (SMT)

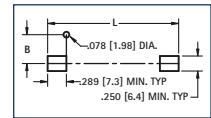
Mounting Detail



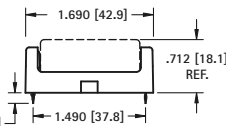
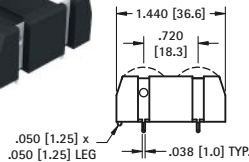
CAT. NO.	MOUNTING STYLE	L	W	H (Ref)	B	G	CELL SIZE	PACKAGING SPEC'S
1010	SMT	1.723 (43.8)	.612 (15.5)	.661 (16.8)	1.360 (34.5)	.265 (6.7)	CR2	50 pieces per tray
1011	THM	1.156 (29.4)	.612 (15.5)	.661 (16.8)	1.360 (34.5)	.265 (6.7)	CR2	
1050	SMT	2.062 (52.4)	.720 (18.3)	.712 (18.1)	1.690 (42.9)	.319 (8.1)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

\*Base material: PBT UL 94V-0

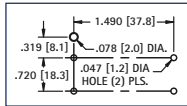
Mounting Detail



### THM DUAL CR123A



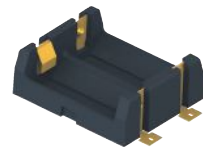
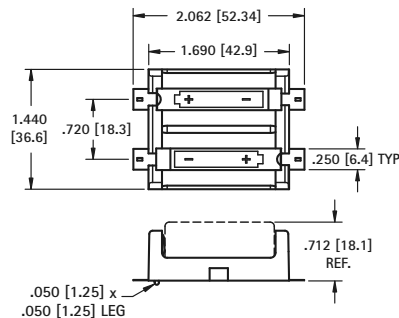
Mounting Detail



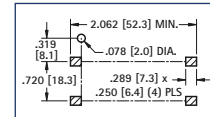
CAT. NO. 1079\*

\*Base material: PBT UL 94V-0

### SMT DUAL CR123A



Mounting Detail



CAT. NO. 1080

Packaging Spec's: 25 pieces per tray

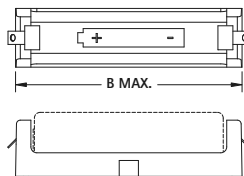
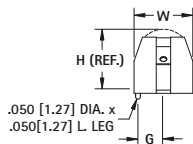
## IN-LINE LITHIUM-ION & ALKALINE HOLDERS

### SINGLE

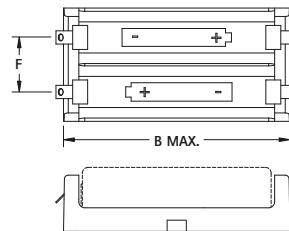
## SPECIFICATIONS

Contacts: .012 (.30) Phosphor Bronze, Tin-Nickel Plate

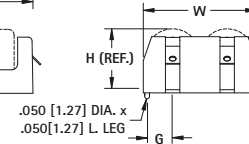
### DUAL



DWG. 1



DWG. 2



HOLDER	COVER	CAT. NO.	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

\*Base material: PBT UL 94V-0

# "18350" LITHIUM-ION BATTERY HOLDERS

Leaf Springs



1095\*

Leaf Spring Polarized



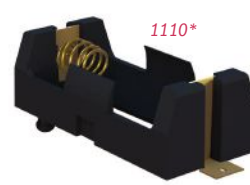
1095P\*

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

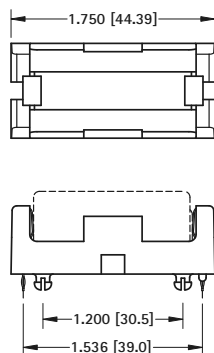
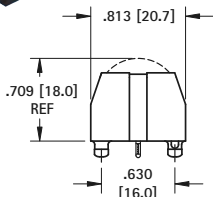
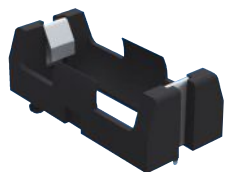
## SPECIFICATIONS

**Operating Temp Range:**  
-60°F to +293°F (-51°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

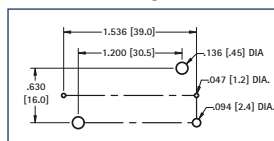


PC Battery Clip  
Available  
See Page 13.

## THRU HOLE MOUNT



Mounting Detail



## SPECIFICATIONS

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

**CAT. NO. 1095** Leaf Springs

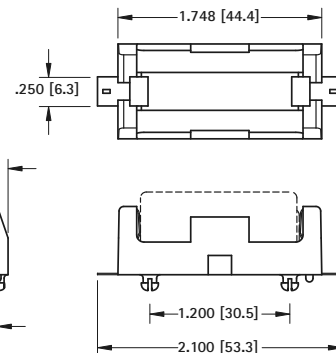
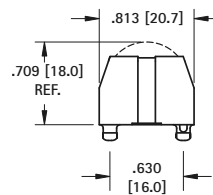
**CAT. NO. 1095P** Leaf Spring Polarized

**CAT. NO. 1111** Coil Spring Polarized

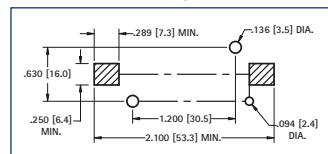
**CAT. NO. 1101** Solder Lugs

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

## SURFACE MOUNT



Pad Layout



## SPECIFICATIONS

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

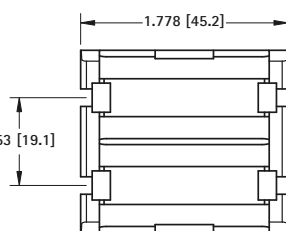
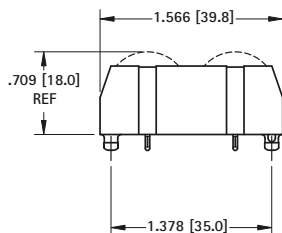
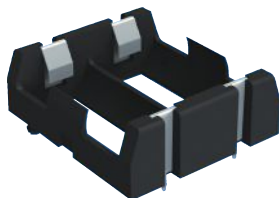
**CAT. NO. 1096** Leaf Springs

**CAT. NO. 1096P** Leaf Spring Polarized

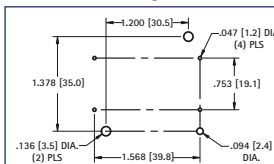
**CAT. NO. 1110** Coil Spring Polarized

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

## DUAL CELL



Mounting Detail



## SPECIFICATIONS

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

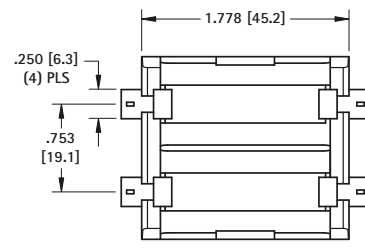
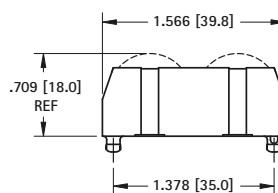
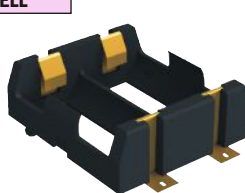
**CAT. NO. 1097** Leaf Springs

**CAT. NO. 1097P** Leaf Spring Polarized

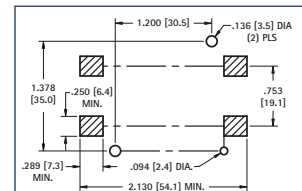
**CAT. NO. 1137** Coil Spring Polarized

**CAT. NO. 1102** Solder Lugs

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



Pad Layout



## 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



# "18650" LITHIUM-ION BATTERY HOLDERS

Leaf Springs



1043\*

Leaf Spring Polarized



1043P\*

Leaf Spring Solder Lugs



1044\*

Coil Spring Polarized



1042\*

## 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 (-51°C to +145°C)

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

**Contacts:** Stainless Steel/Music Wire

SMT - Gold Plate (Flash)

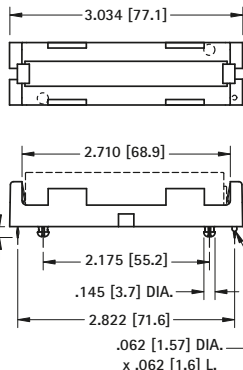
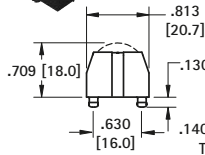
THM - Tin-Nickel Plate



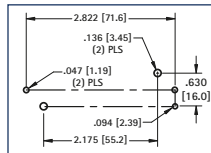
PC Battery Clip  
Available  
See Page 13.

## THRU HOLE MOUNT

### SINGLE CELL



### Mounting Detail



## SPECIFICATIONS

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

**Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

**CAT. NO. 1043** Leaf Springs

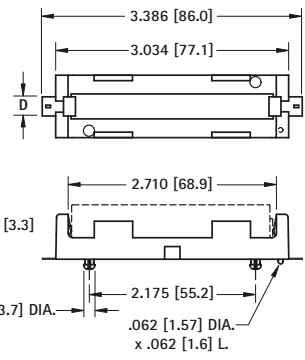
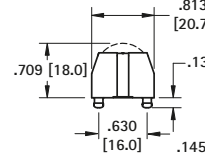
**CAT. NO. 1043P** Leaf Spring Polarized

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

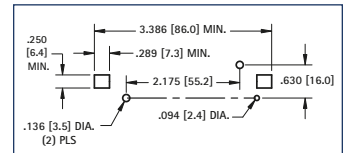
**CAT. NO. 1044** Solder Lugs

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

## SURFACE MOUNT



### Pad Layout



## SPECIFICATIONS

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

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

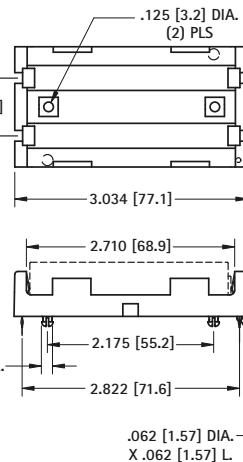
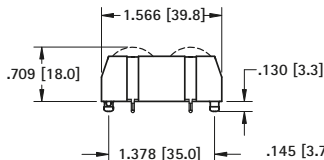
**CAT. NO. 1042** Leaf Springs

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

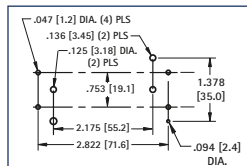
**CAT. NO. 1130** Coil Spring Polarized

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

### DUAL CELL



### Mounting Detail



## SPECIFICATIONS

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

**Contacts:** .012 (.30) Stainless Steel, Tin-Nickel Plate

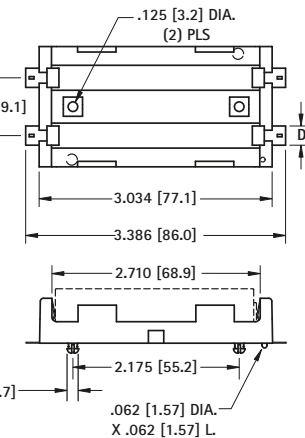
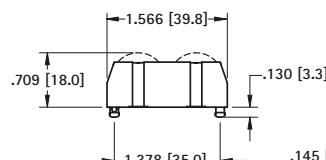
**CAT. NO. 1049** Dual Springs

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

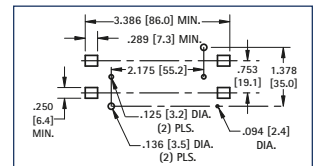
**CAT. NO. 1135** Coil Spring Polarized

**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

# POLARIZED 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
- Polarized holder offers circuit protection against improper battery installation

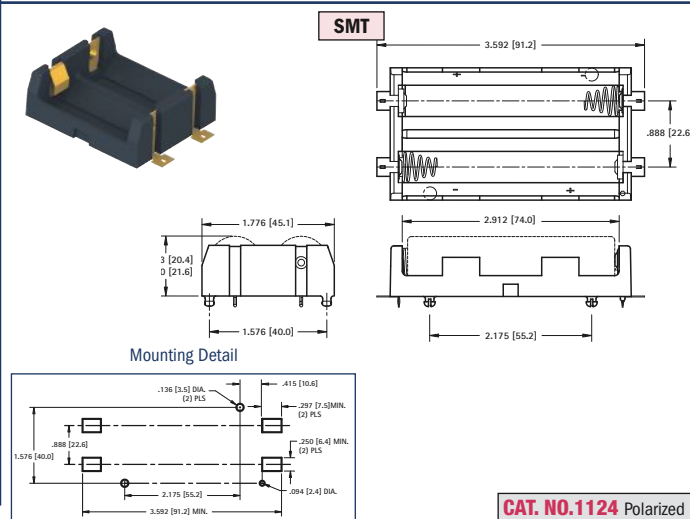
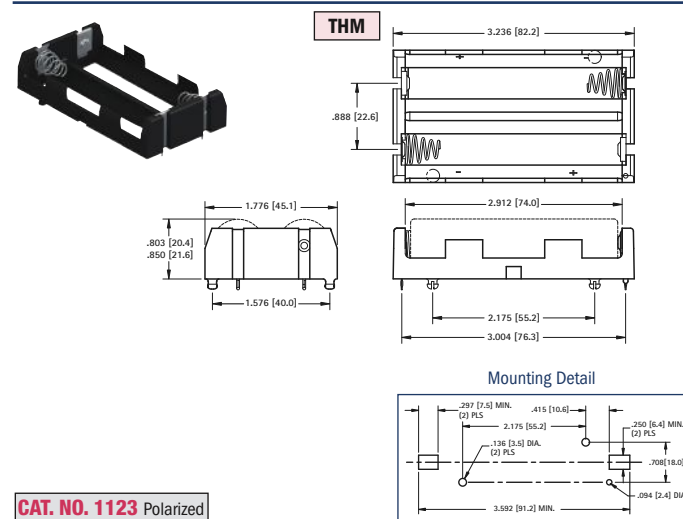
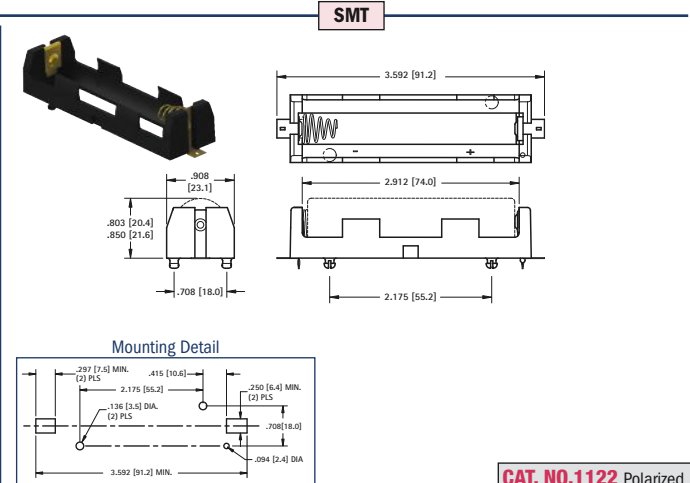
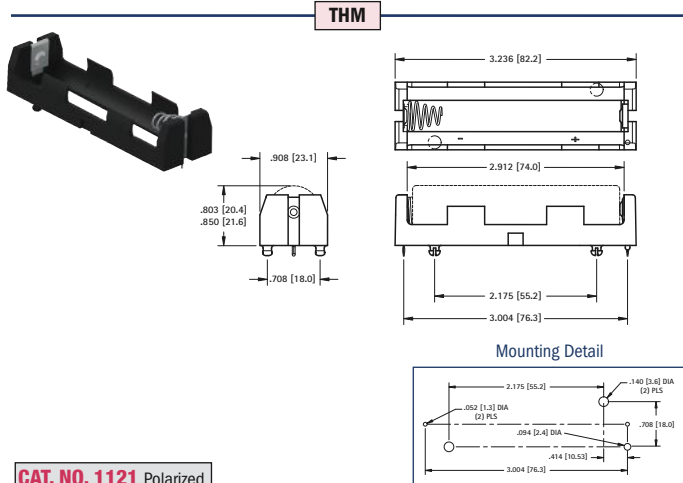
## APPLICATIONS

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

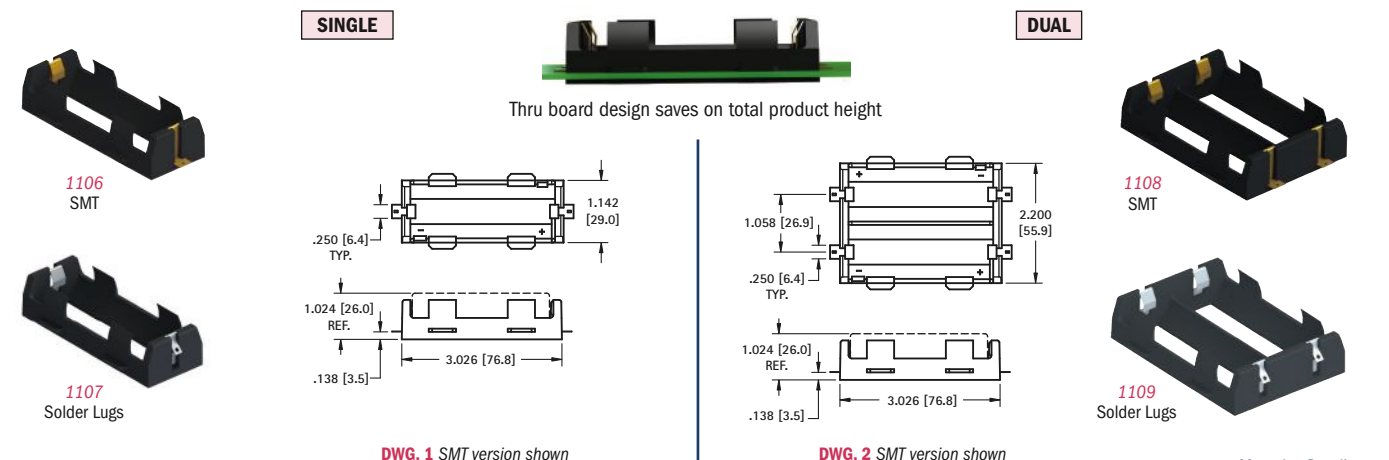
## SPECIFICATIONS

Base: High Temp Nylon 46, UL Rated 94V-0  
Operating temp range: -60°F to 293°F (-51°C to 145°C)

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



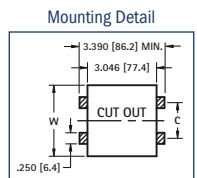
# SMT & IN-LINE "26650" LITHIUM-ION HOLDERS



## SPECIFICATIONS

SMT Base: High Temperature Nylon 4/6, 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.	FIG. 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)



# 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

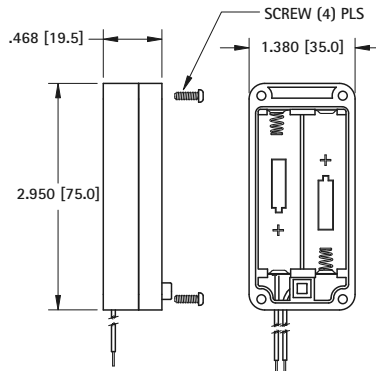
**Springs:** Spring Steel, Nickel Plate

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

**Temperature Range:** 50°F to 194°F (10°C to 90°C)

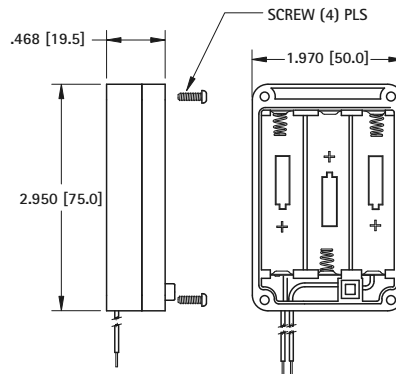
"AA"

### Two (2) Cells - In Series



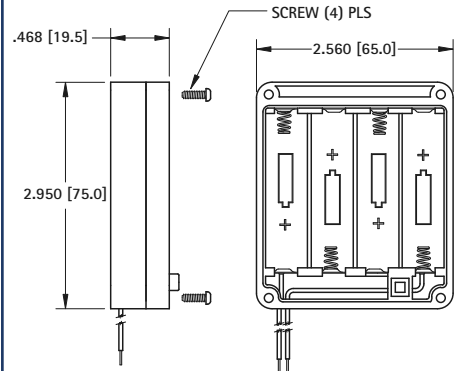
CAT. NO. 2438 Wire Leads with On/Off Switch

### 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

## 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

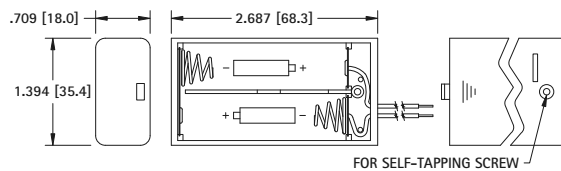
ON/OFF SWITCH  
OPTIONAL

See page 33 for  
Mating PC Jacks



"AA"

### Two (2) Cells - In Series

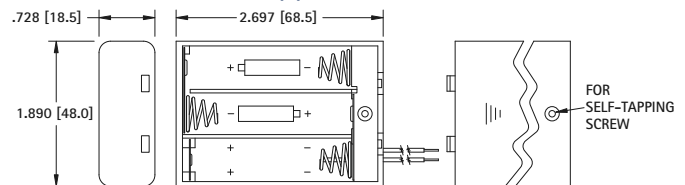


CAT. NO. 2490 Wire Leads Only

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

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

### Three (3) Cells - In Series



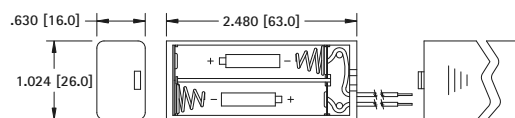
CAT. NO. 2487 Wire Leads Only

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

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

"AAA"

### Two (2) Cells - In Series

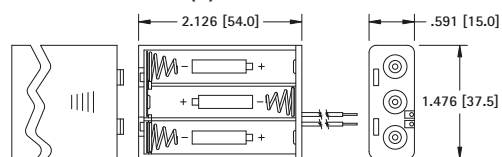


CAT. NO. 2489 Wire Leads Only

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



## 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, combining any of the available options

## SPECIFICATIONS

**Base:** Polypropylene

**Spring:** Spring Steel, Nickel Plate

**PC Pins:** Brass, Nickel Plate

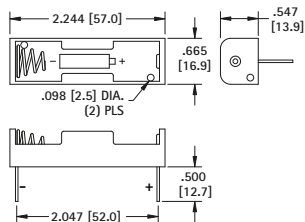
**Wire Leads:** 6.0 (152), #26 AWG Stripped and Tinned, UL/CSA 1007

**Ribbon:** Woven Nylon, Red

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

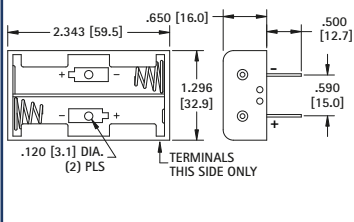
## "AA"

### One (1) Cell



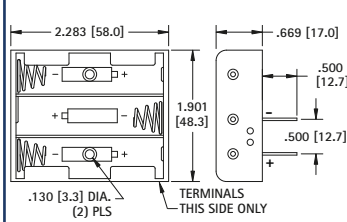
<b>CAT. NO. 2460</b>	PC Mount
<b>CAT. NO. 2460RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2461</b>	Wire Leads Only
<b>CAT. NO. 2461CN</b>	Leads w/PC Connector

### Two (2) Cells - In Series



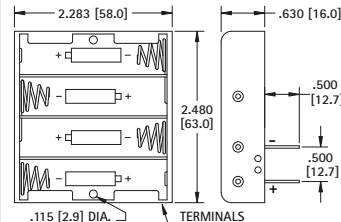
<b>CAT. NO. 2462</b>	PC Mount
<b>CAT. NO. 2462RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2463</b>	Wire Leads Only
<b>CAT. NO. 2463CN</b>	Leads w/PC Connector

### 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

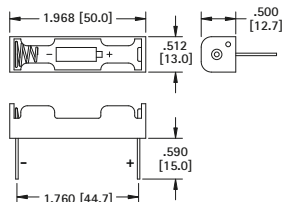
### Four (4) Cells - In Series



<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

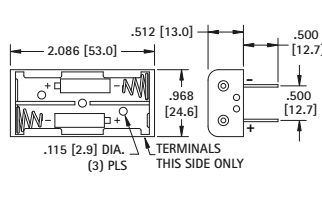
## "AAA"

### One (1) Cell



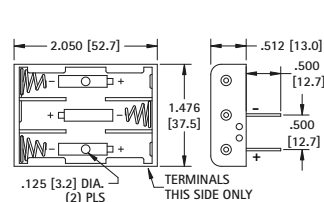
<b>CAT. NO. 2466</b>	PC Mount
<b>CAT. NO. 2466RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2467</b>	Wire Leads Only
<b>CAT. NO. 2467CN</b>	Leads w/PC Connector

### Two (2) Cells - In Series



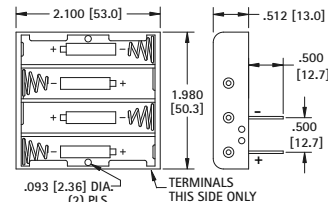
<b>CAT. NO. 2468</b>	PC Mount
<b>CAT. NO. 2468RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2469</b>	Wire Leads Only
<b>CAT. NO. 2469CN</b>	Leads w/PC Connector

### 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

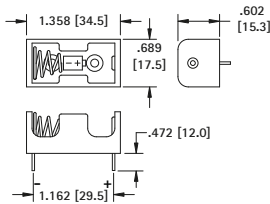


<b>CAT. NO. 2481</b>	PC Mount
<b>CAT. NO. 2481RB</b>	PC Mount w/Ribbon
<b>CAT. NO. 2482</b>	Wire Leads Only
<b>CAT. NO. 2482CN</b>	Leads w/PC Connector



## ECONOMICAL PLASTIC BATTERY HOLDERS (CONT'D)

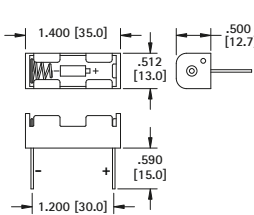
"1/2 AA" Cell -or- "CR2" Cell



<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

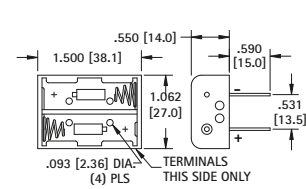
"1/2AA" - "CR2" - "N" - "12V"

"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

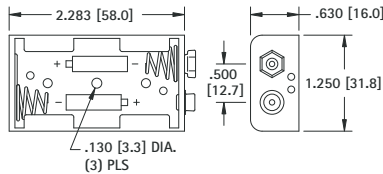
**Holder:** Polypropylene

**Male/Female Contacts:** Brass, Nickel Plate

**Springs:** Spring Steel, Nickel Plate

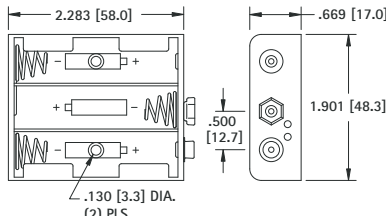
"AA"

Two Cells - in Series



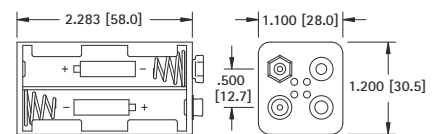
**CAT. NO. 2474**

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

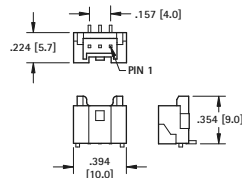
**Current Rating:** 3 Amps, 100V max

**Temperature Range:** -13°F (-25°C) to 185°F (85°C)

SMT

SUPPLIED ON TAPE AND REEL

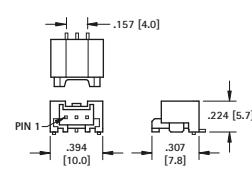
VERTICAL



**CAT. NO. 974**

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

HORIZONTAL

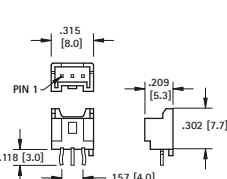


**CAT. NO. 976**

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

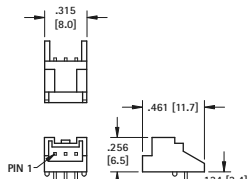
THM

VERTICAL



**CAT. NO. 975**

HORIZONTAL



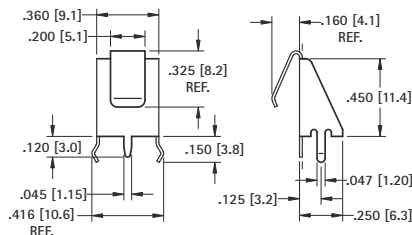
**CAT. NO. 977**

## HORIZONTAL 9 VOLT PC LEAF-SPRING CONTACT

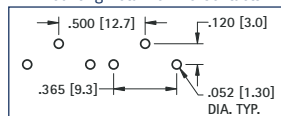
- Ideal "Slide-In" contact for easy installation and removal of 9 Volt batteries
- Space saving design installs directly onto the PC board
- Suitable for .062 (1.57) to .093 (2.36) PC boards

- 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



Mounting Detail for Two Contacts



**CAT. NO. 590**

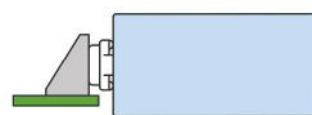
## HORIZONTAL 9 VOLT PC SNAP-ON CONTACTS

**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



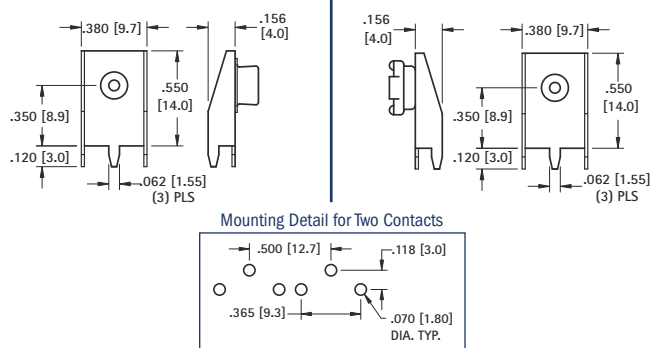
To Mount Battery "On" PC Board  
Use Cat. No. 593 and Cat. No. 594



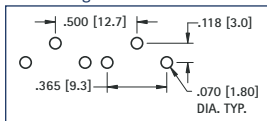
To Mount Battery "Off" PC Board  
Use Cat. No. 635 and Cat. No. 636

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

**"On-Board"**



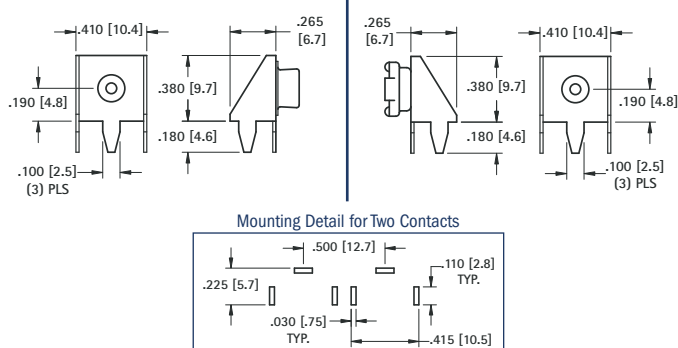
Mounting Detail for Two Contacts



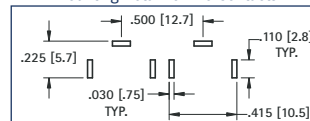
**CAT. NO. 593 (Male)**

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

**"Off-Board"**



Mounting Detail for Two Contacts



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

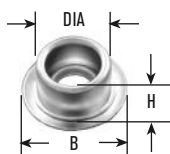
**CAT. NO. 636 (Female)**

## BATTERY SNAP-ONS

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.

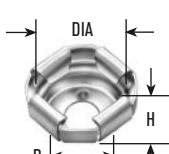
**SOCKET OR STUD ONLY**

FIG. 1



Stud only

FIG. 2



Socket only

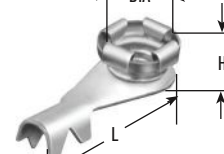
**SOCKET OR STUD W/CRIMP LUG**

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)		

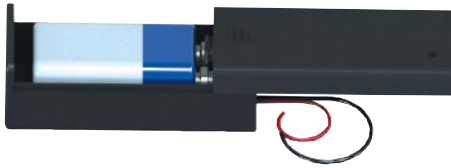
CAT. NO.	FIG. NO.	DIA	H	L	SIZE	MATERIAL
263*	3	.225 (5.7)	.170 (4.3)	.790 (20.1)	Junior*	Stud: Steel, Nickel Plate Lug: Brass, Tin Plate
271*	4	.205 (5.2)	.200 (5.1)	.790 (20.1)		
264	3	.283 (7.2)	.185 (4.7)	.840 (21.3)	Senior	Stud: Brass, Nickel Plate Lug: Brass, Tin Plate
272	4	.265 (6.7)	.185 (4.7)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

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

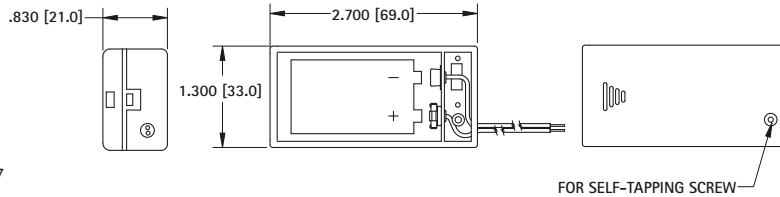
DIMENSIONS ARE FOR REFERENCE ONLY

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

## 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

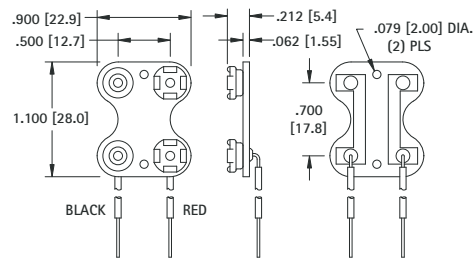
**Wire Leads:** 6.0 (152), #26 AWG, Tinned and stripped, UL/CSA 1007

**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

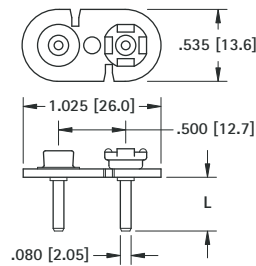
**Wire:** 7.0 (177.8) #22 AWG, UL/CSA #1061

**End Strip:** .375 (9.5) Long, Tinned

**CAT. NO. 227**

## VERTICAL 9 VOLT PC SNAP-ON CONTACT

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



### SPECIFICATIONS

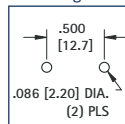
**Base:** .062 (1.57) Fibre

**Contacts:** Steel, Nickel Plate

**Pins:** Brass, Tin Plate

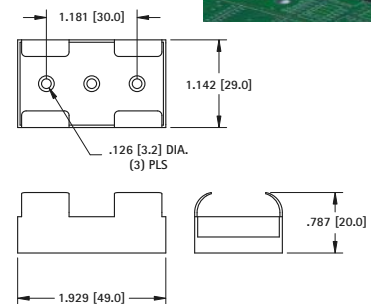
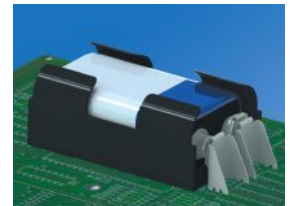
CAT. NO.	L LENGTH
967 (with PC Pins)	.120 (3.0)
968 (with PC Pins)	.400 (10.2)
68 (without PC Pins)	-

### 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

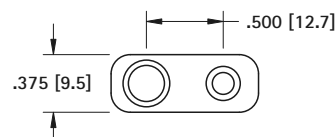
## PROTECTIVE BATTERY CAP

- 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**



## 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

Modifications available with different wire lengths.

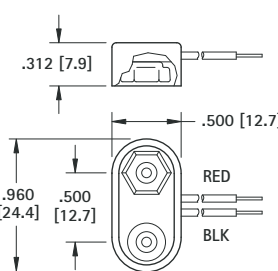
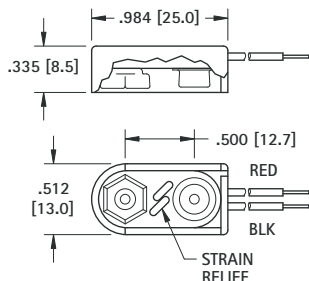
### SPECIFICATIONS

Base: ABS

Male/Female Contacts: Brass, Nickel Plate

Wires (Red & Black): #26 AWG, Tinned, .187 (4.8) end strip, UL/CSA 1007

\*Tolerance on lead length +/- .250 (6.4)



I STYLE		T STYLE	
MOLDED		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)

## 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.

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

\*Tolerance on lead length +/- .250 (6.4)



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

I STYLE		T STYLE	
MOLDED		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)

## 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.

Modifications available with different wire lengths

### SPECIFICATIONS

Contacts: Brass, Nickel Plate

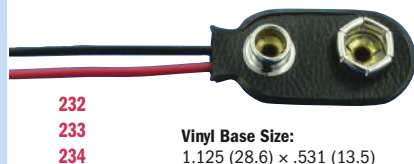
Wire: #26 AWG, UL/CSA 1007

End Strip: .250 (6.4) Long, Tinned

\*Tolerance on lead length +/- .250 (6.4)



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

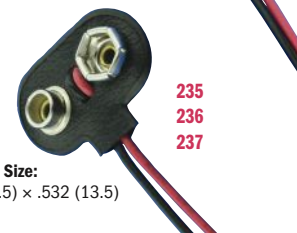


Vinyl Base Size:  
1.125 (28.6) x .531 (13.5)

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



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



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



## MOLDED 9 VOLT BATTERY HOLDERS



1294



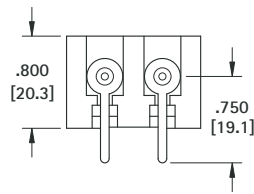
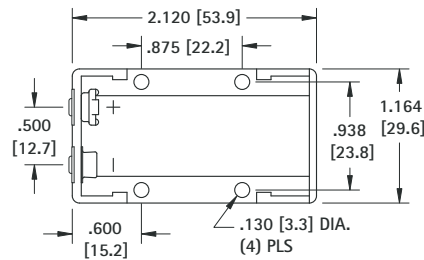
1295

### SPECIFICATIONS

**Body:** Molded from high impact, Glass Filled Nylon

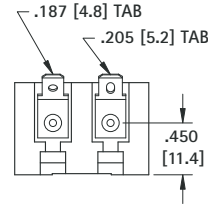
**Terminals:** Brass, Tin Plate

**Contacts:** Steel, Nickel Plate



CAT. NO. 1294

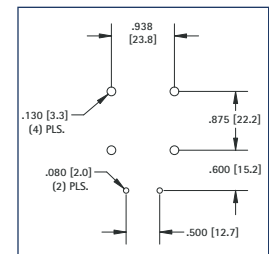
PC Terminals



CAT. NO. 1295

Quick-Fit Terminals

### Mounting Detail



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.

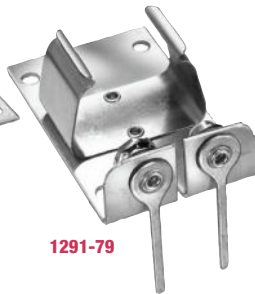
- Male-female snap-in terminals assure positive contact and proper polarity
- Durable, rugged construction
- Excellent spring retention – holds battery in place
- Withstands severe shock and vibration
- Operating temperature range: -40°F to +266°F (-40°C to +130°C)
- Impervious to most industrial solvents

## 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.



1290-79



1291-79

### SPECIFICATIONS

**Frame:** Aluminum

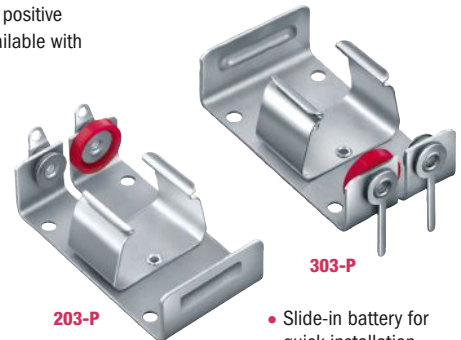
**Solder Terminals:** Brass, Tin Plate

**PC Terminals:** Brass, Tin Plate

**Contacts & Clips:** Steel, Nickel Plate

**Insulation:** Resin Impregnated

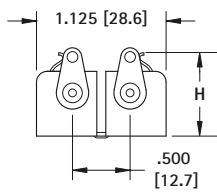
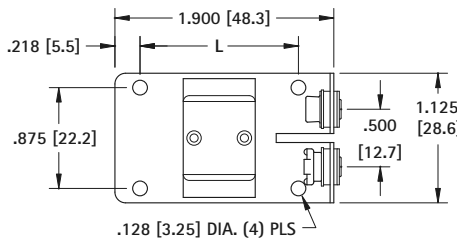
**Polarizing Washer:** Polyethylene



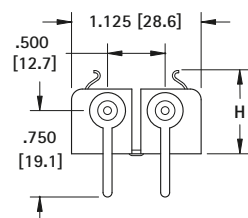
203-P

303-P

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

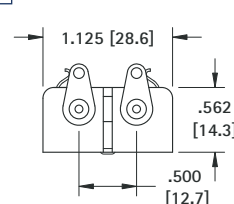
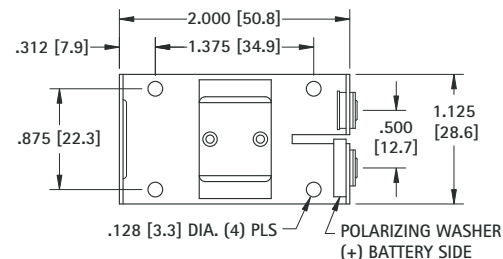
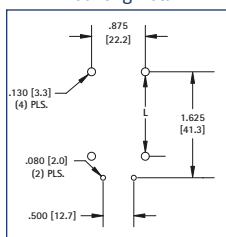


1290



1291

### Mounting Detail



CAT. NO. 203-P

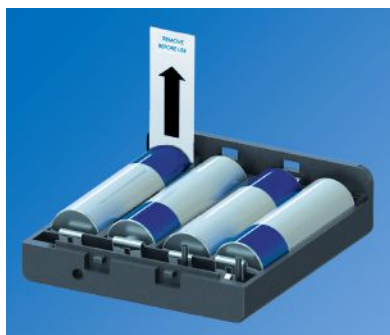
Solder Terminals

CAT. NO. 303-P

PC Terminals

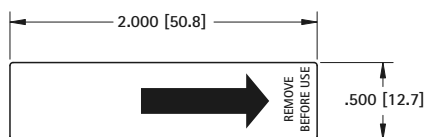
CAT. NO.	CAT. NO.	H	L	BATTERY REFERENCE	DESCRIPTION
1291	1290	.718 (18.2)	1.375 (34.9)	Alkaline	Low Profile
1291-79	1290-79	.812 (20.6)	1.375 (34.9)	Alkaline	Snap Fit
1291-66	1290-66	.857 (21.8)	1.250 (31.8)	Lithium-Ion	Snap Fit

## BATTERY INSULATORS (PULL TABS)



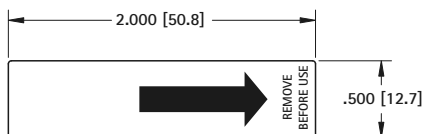
- Battery insulator will protect battery and circuitry during shipping and storage
- Insulator to be pulled out from product when it is time to activate

### "AA" & LARGER



**MATERIAL:** .007 Mineral Reinforced Polypropylene, white

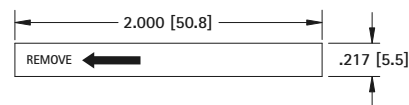
**CAT. NO. 117** 1000 pieces per roll



**MATERIAL:** .005 Polyester, clear

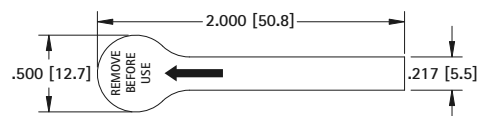
**CAT. NO. 121** (Bulk)

### BUTTON CELL & "AAA"



**MATERIAL:** .007 Mineral Reinforced Polypropylene, white

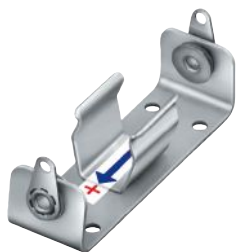
**CAT. NO. 111** 1000 pieces per roll



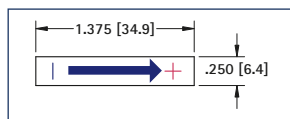
**MATERIAL:** .005 Polyester, clear

**CAT. NO. 119** (Bulk)

## POLARITY INDICATING LABEL



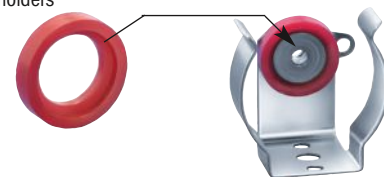
- No gluing or wetting needed
- Pressure sensitive adhesive back
- Economical
- Adheres to all surfaces



**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.

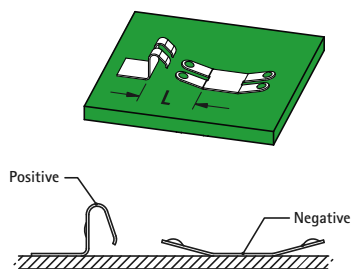


**MATERIAL:** Molded Polyethylene

**CAT. NO. 59** (RED)

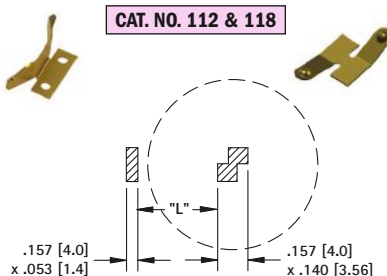
**CAT. NO. 60** (BLACK)

## COIN CELL ENCLOSURE CONTACT LAYOUTS



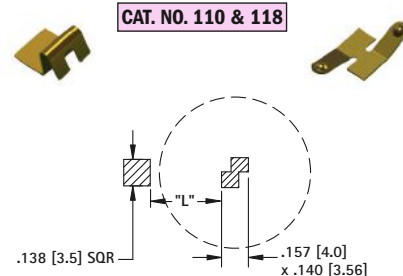
Refer to page 12 for Part Details

### CAT. NO. 112 & 118



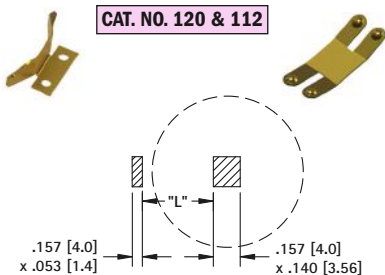
CAT. NO.	BATTERY REFERENCE	L
120 & 118	CR1216, CR1220	.178 (4.5)
	CR1612, CR1616, CR1620	.256 (6.35)

### CAT. NO. 110 & 118



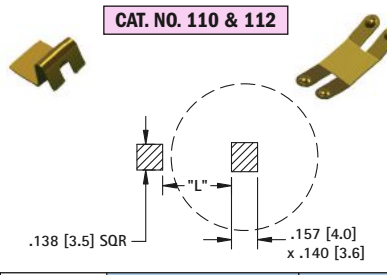
CAT. NO.	BATTERY REFERENCE	L
110 & 118	CR1225	.213 (5.4)
	CR1632	.291 (7.4)

### CAT. NO. 120 & 112



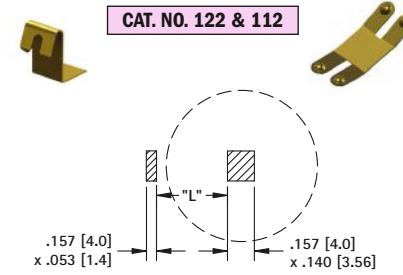
CAT. NO.	BATTERY REFERENCE	L
120 & 112	CR2012, CR2016, CR2020	.336 (8.5)
	CR2320	.395 (10.0)
	CR2412	.414 (10.5)

### 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
120 & 112	CR2354	.429 (10.9)
	CR2450, CR2477	.448 (11.4)
	CR3032	.567 (14.4)