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

DESIGN ADVANTAGES...

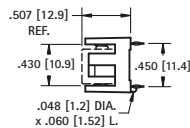
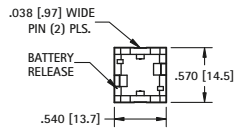
- Reliable spring tension assures low contact resistance
- Retains battery securely to withstand shock and vibration
- Base material UL Rated 94V-0. Impervious to most industrial solvents
- Operating temperature range: -60°F to +293°F (-51°C to +145°C)

IDEALLY SUITED FOR...

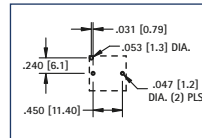
- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up
- Microprocessors and Microcomputer memory hold (desktop and laptop applications)
- Industrial and commercial security and alarm systems
- PC 104 application



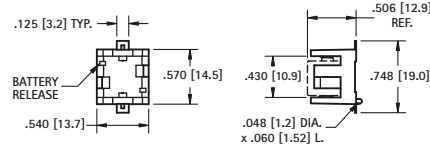
THRU HOLE MOUNT



Mounting Detail

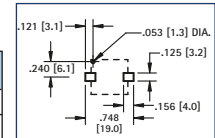


AVAILABLE ON TAPE AND REEL



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

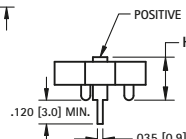
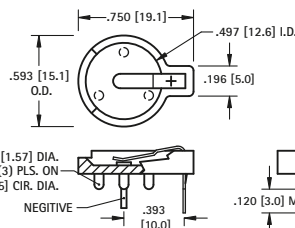
Contacts: .012 (.30) Phosphor Bronze, Gold Plate (Flash)

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

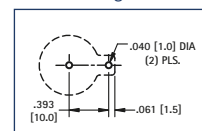
Tape & Reel Spec's: 44mm wide; 20mm pitch; 13 inch reel (200 pieces per reel)



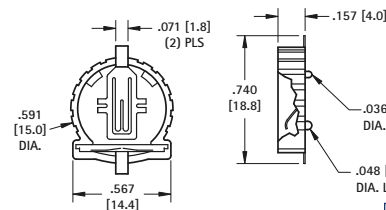
THRU HOLE MOUNT



Mounting Detail

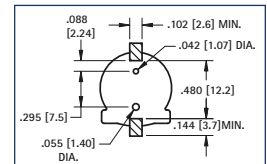


AVAILABLE ON TAPE AND REEL



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

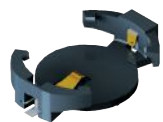
Contacts: .008 (.20) Phosphor Bronze, Gold Plate (Flash)

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

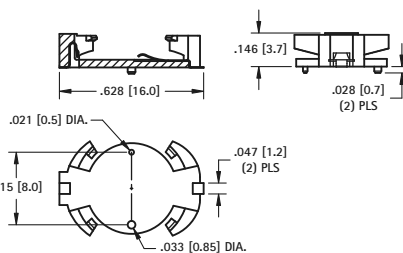
Tape & Reel Spec's: 32mm wide; 20mm pitch; 13 inch reel (500 per reel)

12mm AUTO-IN

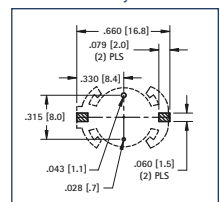
AVAILABLE ON TAPE AND REEL



SURFACE MOUNT



Pad Layout



MATERIAL:

Base: PA9T, Black

Contacts: .004 (.10) Phosphor Bronze

Contact Area: Gold Plate (Flash)

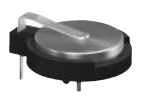
Solder Tails: Matte Tin Plate

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

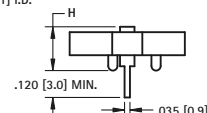
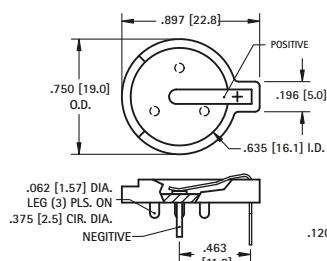
Tape & Reel Spec's: 44mm wide; 24mm pitch; 13 inch reel (450 per reel)

16mm

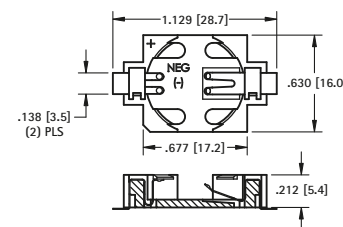
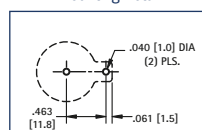
AVAILABLE ON TAPE AND REEL



THRU HOLE MOUNT

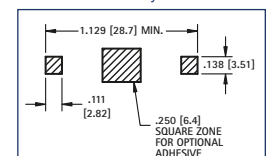


Mounting Detail



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)

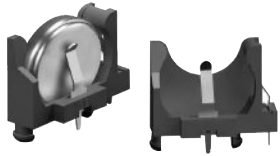
CAT. NO.	ON TAPE & REEL	CELLS	BATTERY REFERENCE
504	504TR	1	BR1625, CR1632

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

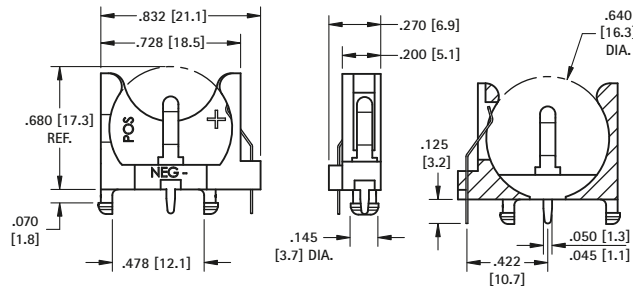
THRU-HOLE MOUNT (THM) VERTICAL VIBRA-FIT CELL HOLDERS

- 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)

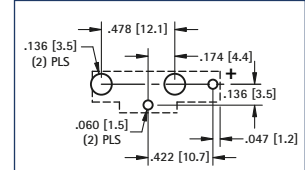
16mm VERTICAL



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



Pad Layout



MATERIAL:

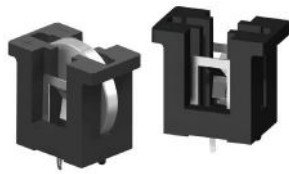
Base: PBT, UL Rated 94V-0

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

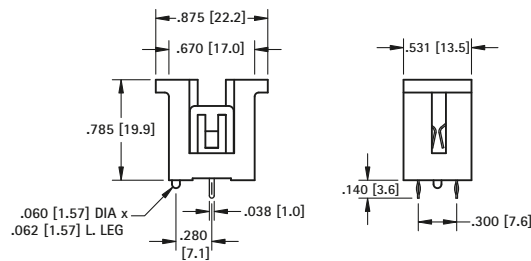
Battery Reference: (1) cell: BR1612, CR1616, CL1620, CR1625, BR1632

CAT. NO. 1069

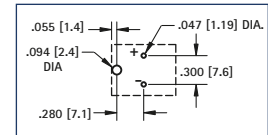
20mm COMPACT



- Molded notch prevents improper insertion of 2032 size cells



Mounting Detail



MATERIAL:

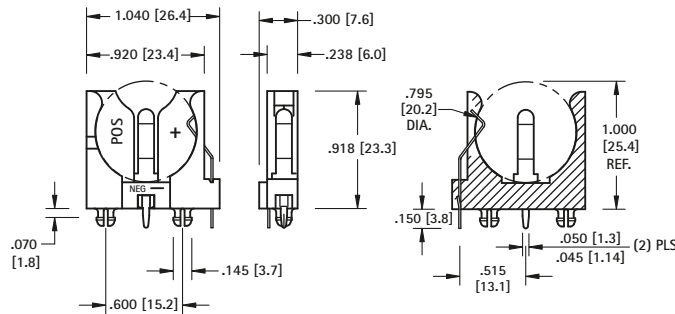
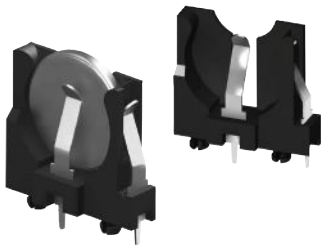
Contacts: .012 (.30) Spring Steel, Tin-Nickel Plate

Base: PBT, UL Rated 94V-0

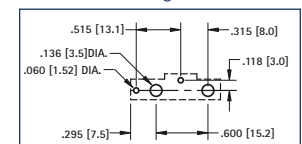
CAT. NO.	BATTERY REFERENCE
1067	CR2016, DL2020, CL2025, CR2032

20mm SLIM-LINE

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



Mounting Detail



MATERIAL:

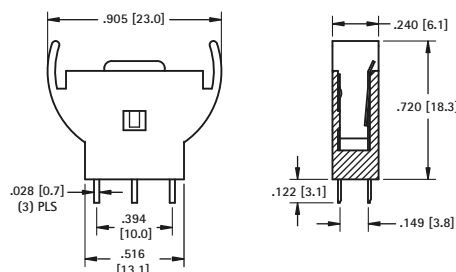
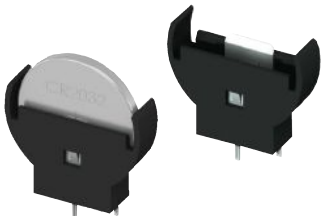
Contacts: .016 (.41) Spring Steel, Tin-Nickel Plate

Base: PBT, UL Rated 94V-0

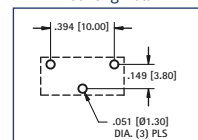
CAT. NO.	BATTERY REFERENCE
1065	BR2012, CR2016, DL2020, CL2025, CR2032

20mm SLIM-LINE

- Top loading.



Mounting Detail



MATERIAL:

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

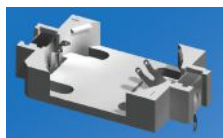
Base: Nylon 6/6, Black

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



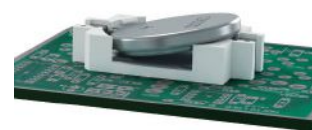
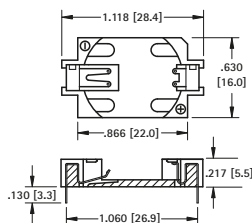
Thru Hole Mount

MATERIAL:

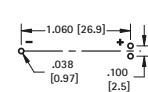
Contacts: .006 (.15) Phosphor Bronze, Tin Plate
Base: Glass Filled LCP, UL Rated 94V-0

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:

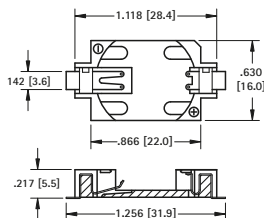
Contacts: .006 (.15) Phosphor Bronze, Gold Plate (Flash)
Base: Glass Filled LCP, UL Rated 94V-0

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

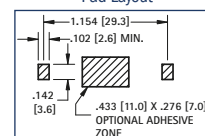
Tape & Reel Spec's: 44mm wide; 20mm pitch; 13 inch reel (500 pieces per reel)

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



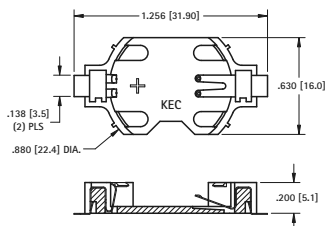
Surface Mount

MATERIAL:

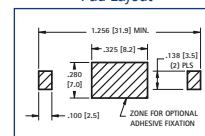
Contacts: .006 (.15) Phosphor Bronze, Gold Plate (Flash)
Base: Glass Filled LCP, UL Rated 94V-0

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

AVAILABLE ON TAPE AND REEL



Pad Layout



2032 ULTRA LOW PROFILE HOLDER

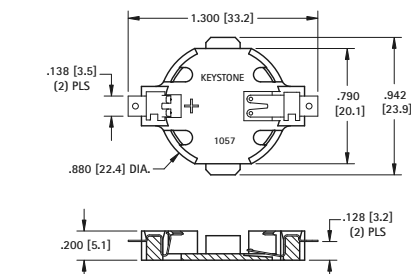


MATERIAL:

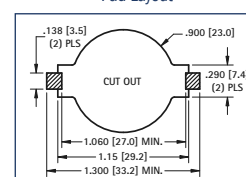
Contacts: .009 (.23) Phosphor Bronze, Gold Plate (Flash)
Base: Glass filled LCP, UL Rated 94V-0

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

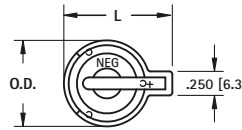
- Base material UL Rated 94V-0. Impervious to most industrial solvents
- Operating temperature range: -60°F to +293°F (-51°C to +145°C)

IDEALLY SUITED FOR...

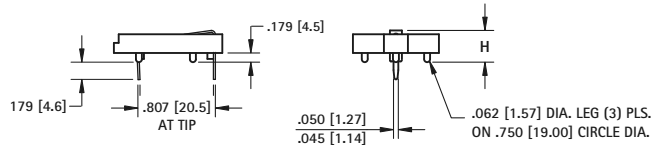
- Computer memory, power transfer and back-up systems
- Video and telecommunications power back-up
- Microprocessors and Microcomputer memory hold (desktop and laptop applications)

- 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



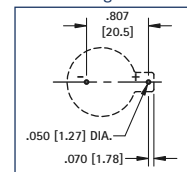
MATERIAL:

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

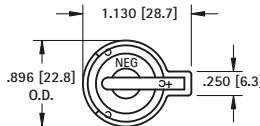
Base: PBT, UL Rated 94V-0

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

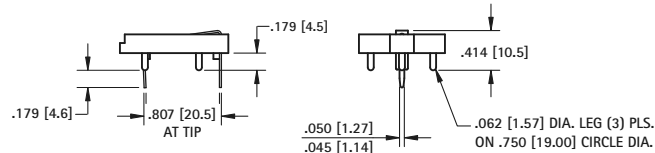
Mounting Detail



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



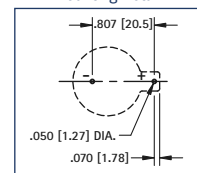
MATERIAL:

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

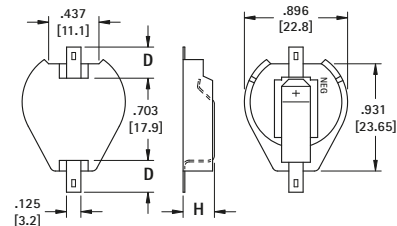


20mm SURFACE MOUNT COIN CELL HOLDER

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:

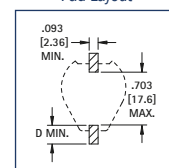
Contacts: .015 (.38) Steel

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 BULK & REEL	CAT. NO.	ON TAPE BULK & 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 (3) 2012, (3) 2016	
1064	1064TR	1094	1094TR	.278 (7.1)			

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

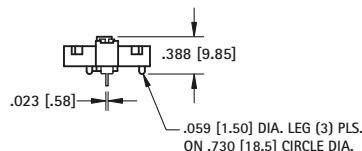
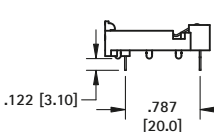
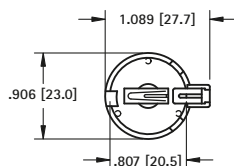


- Designed for manual insertion of battery.
- Mounts securely for wave soldering

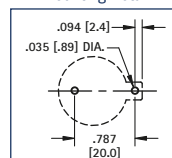
MATERIAL:

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

CAT. NO.	BATTERY REFERENCE
1066	BR2025, CR2032



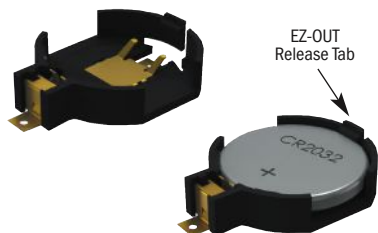
Mounting Detail



SMT AUTO-IN/EZ-OUT COIN CELL HOLDER

AVAILABLE ON TAPE AND REEL

- 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

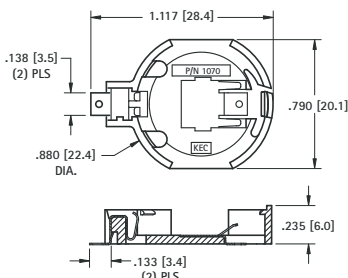


MATERIAL:

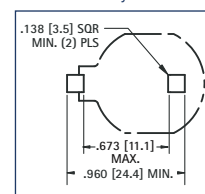
Contacts: .009 (.23) Phosphor Bronze, Gold Plate (Flash)
Base: High temperature Nylon 4/6, UL Rated 94V-0

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)



Pad Layout



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

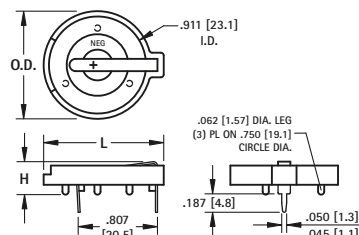


Thru Hole Mount

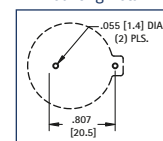
MATERIAL:

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)	(2) 2320, (2) 2325, (2) 2330	



Mounting Detail



AVAILABLE ON TAPE AND REEL

- 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

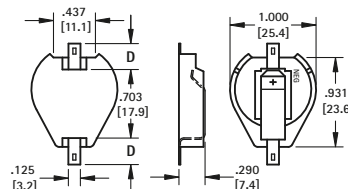


Surface Mount

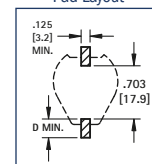
MATERIAL:

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 PAD SIZE	BATTERY REFERENCE
1071	1071TR	1091	1091TR	.156 (4.0)	CR2320, CL2325, DL2330, CR2335
1073	1073TR	1083	1083TR	.278 (7.1)	



Pad Layout



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

24mm



Thru Hole Mount

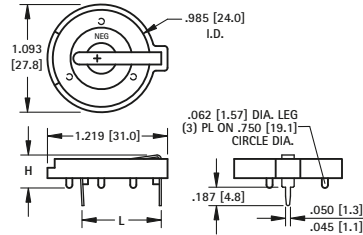
MATERIAL:

Base: PBT, UL Rated 94V-0

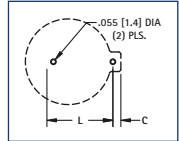
Contacts: .020 (.50) Spring Steel, Tin-Nickel Plate

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:

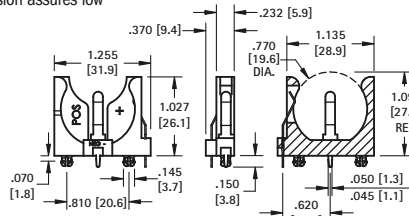
Base: PBT, UL Rated 94V-0

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

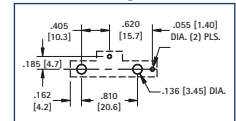
Operating Temperature: -60°F to +293°F (-51°C to +145°C)

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)

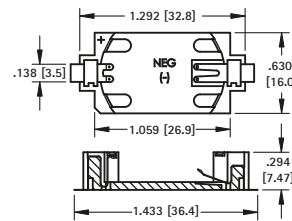
Operating Temperature: -60°F to +293°F (-51°C to +145°C)

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

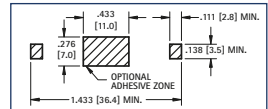
Tape & Reel Spec's: 56mm wide; 20mm pitch; 13 inch reel, (400 pieces per reel)

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



24mm AUTO-IN/EZ-OUT



Thru Hole Mount

MATERIAL:

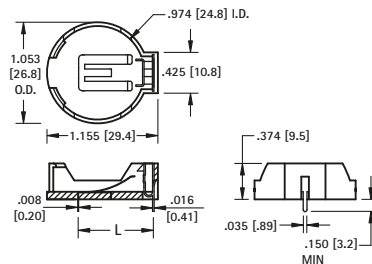
Contacts: .008 (.20) Phosphor Bronze, Nickel Plate

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

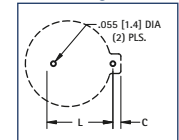
Operating Temperature: -60°F to +293°F (-51°C to +145°C)

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

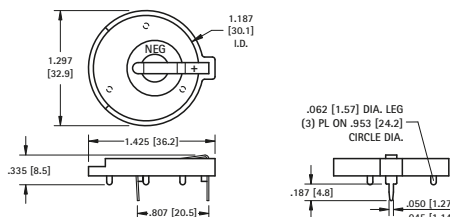
MATERIAL:

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

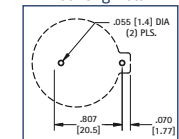
Base: PBT, UL Rated 94V-0

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

CAT. NO.	BATTERY REFERENCE
301	BR3032



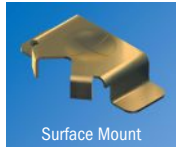
Mounting Detail



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

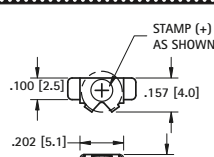
Economical and reliable SMT and THM coin cell retainers specifically designed for miniature electronic applications with limited board space.

- 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



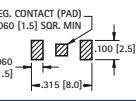
MATERIAL: .006 (.15) Phosphor Bronze, Gold Plate (Flash)

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)

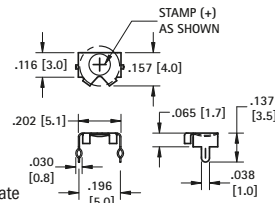
4.8mm

Mounting Detail



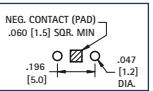
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2995	ML414



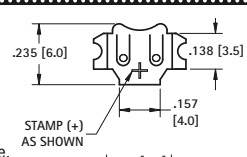
Thru Hole Mount

Mounting Detail



Surface Mount

AVAILABLE ON TAPE AND REEL



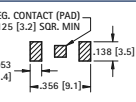
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

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)

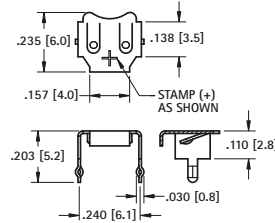
5.8mm

Mounting Detail



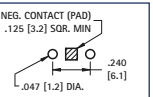
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
2987	379, 317



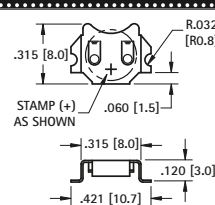
Thru Hole Mount

Mounting Detail



Surface Mount

AVAILABLE ON TAPE AND REEL



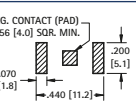
MATERIAL: .010 (.25) Phosphor Bronze

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

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

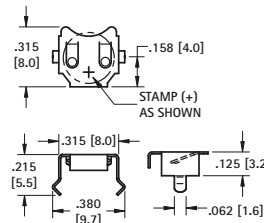
6.8mm

Mounting Detail



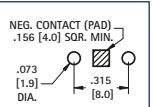
MATERIAL: .010 (.25) Phosphor Bronze, Tin-Nickel Plate

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



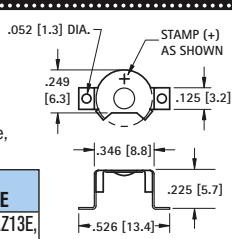
Thru Hole Mount

Mounting Detail



Surface Mount

AVAILABLE ON TAPE AND REEL



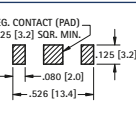
MATERIAL: .010 (.25) Phosphor Bronze, Gold Plate (Flash)

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)

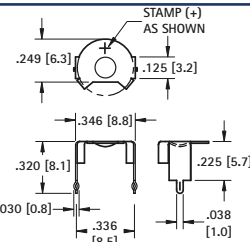
7.9mm

Mounting Detail



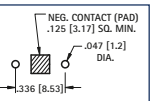
MATERIAL: .010 (.25) Phosphor Bronze, Tin-Nickel Plate

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



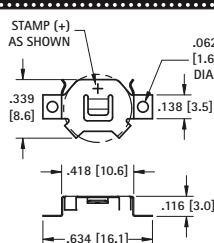
Thru Hole Mount

Mounting Detail



Surface Mount

AVAILABLE ON TAPE AND REEL



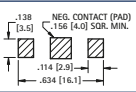
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

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)

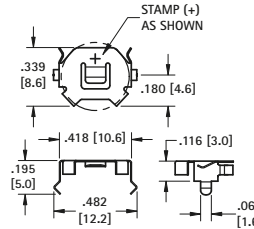
9 - 10mm

Mounting Detail



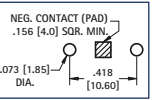
MATERIAL: .006 (.15) Phosphor Bronze, Tin-Nickel Plate

CAT. NO.	BATTERY REFERENCE
3031	CR927, CR1025



Thru Hole Mount

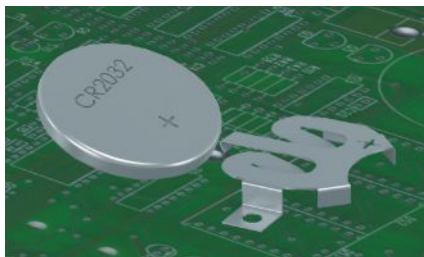
Mounting Detail



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

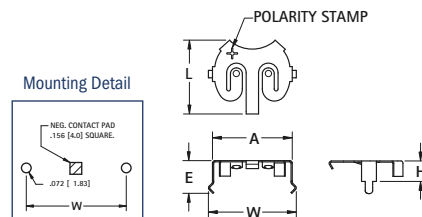
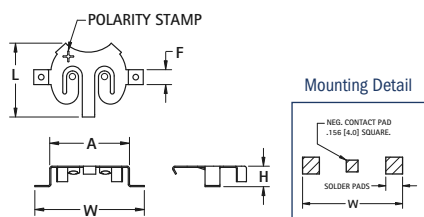
THM

- 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

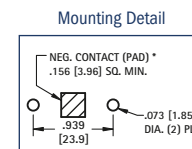
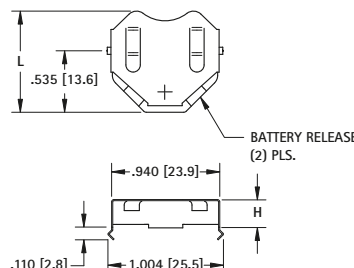
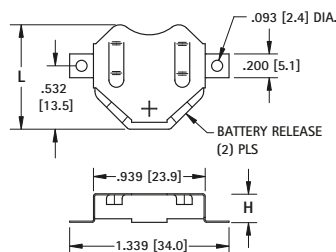
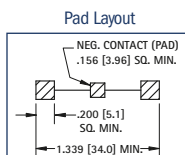
20mm CELLS

- 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



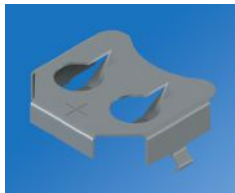
AVAILABLE ON TAPE AND REEL

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

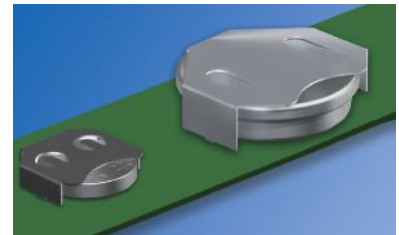
Tape & Reel Spec's: 56mm wide; 28mm pitch; 13 inch reel: 3020TR, 3070TR 400 pieces per reel; 3022TR, 3072TR 250 pieces per reel; 3024TR, 3074TR 250 pieces per reel

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

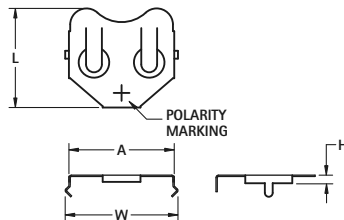
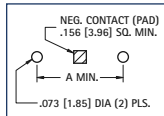


FIG. 1 - Compact

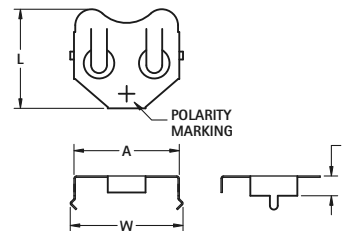
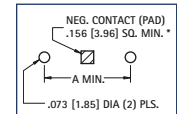


FIG. 2 - Low Profile

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
2997	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
3001	2	.520 (13.2)	.118 (3.0)	.475 (12.1)	.585 (14.9)	12mm	CR1216, BR1220, CL1225, SR1120, D381, 391, 191
3013	2	.664 (16.9)	.156 (4.0)	.594 (15.1)	.723 (18.4)	16mm	BR1616, CR1612, CR1616, CR1620, CR1632
3027	1	.831 (21.1)	.085 (2.2)	.782 (19.9)	.890 (22.6)	20mm	BR2016, CR2016, DL2016
3003	2	.831 (21.1)	.156 (4.0)	.782 (19.9)	.890 (22.6)	20mm	BR2320, CL2330, CR2320, BR2325, CR2325, DL2325
3005	2	.939 (23.9)	.156 (4.0)	.832 (21.1)	1.004 (25.5)	23mm	BR2320, CL2330, CR2320, BR2325, CR2325, DL2325
3011	2	.939 (23.9)	.240 (6.1)	.819 (20.8)	1.004 (25.5)	23mm	CR2354, DL2354
3007	1	1.000 (25.4)	.156 (4.0)	.918 (23.3)	1.055 (26.8)	24mm	CR2430, DL2430
3009	2	1.000 (25.4)	.230 (5.8)	.890 (22.6)	1.059 (26.9)	24mm	CR2450, DL2450
3039	2	1.000 (25.4)	.336 (8.5)	.890 (22.6)	1.059 (26.9)	24mm	CR2477, DL2477
3047	2	1.227 (31.2)	.167 (4.2)	1.020 (25.9)	1.340 (34.0)	30mm	CR3032

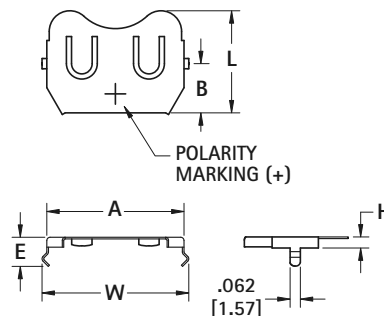
THRU HOLE (THM) ULTRA LOW PROFILE COIN CELL RETAINER



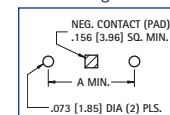
The Ultra Low Profile Coin Cell retainers are designed specifically for the most popular 20mm & 24mm coin cells. It will provide reliable contact as well as retain the coin cell with the minimum space needed. Ideal for small applications such as remote controls or active RFID tags.

- 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
3029	.831 (21.1)	.067 (1.7)	.618 (15.7)	.890 (22.6)	20mm	CR2012, DL2012
3035*	.835 (21.2)	.170 (4.3)	.600 (15.2)	.880 (22.3)	20mm	CR2032 also CR2025, CR2020
3033	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

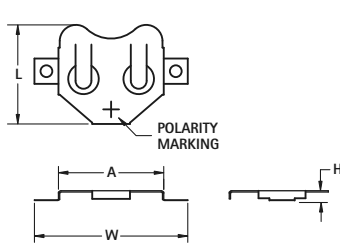
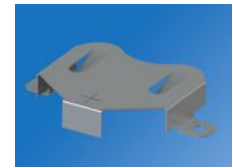
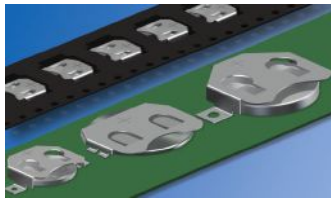
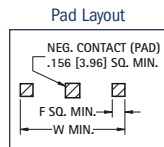
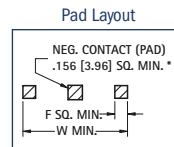


FIG. 1 - Compact



*SMT negative contact pads not recommended for compact retainers.



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

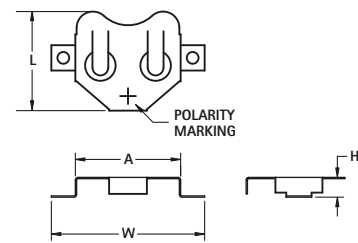


FIG. 2 - Low Profile

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

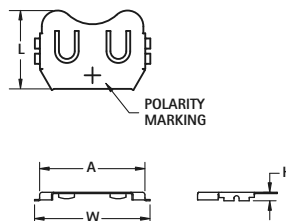
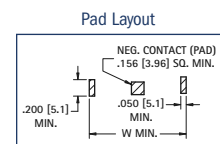


FIG. 3 - Ultra Low



*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

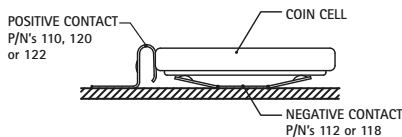
- Contacts for Enclosure cases with self contained battery compartments
- Design facilitates easy battery access, removal & installation

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

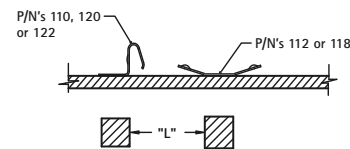
- Positive and Negative contacts can be used as a design pair or individually on a PCB
- Accommodates cell diameters from 12mm to 30mm

AVAILABLE ON TAPE AND REEL

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



Refer to page 38 for Mounting Details

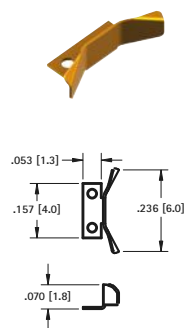


CONTACT SELECTION GUIDE

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

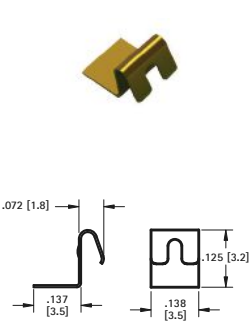


CAT. NO. 120 Bulk

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

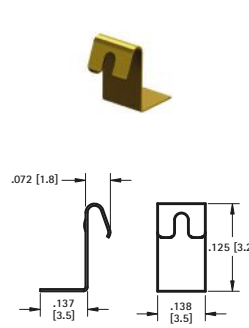


CAT. NO. 110 Bulk

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



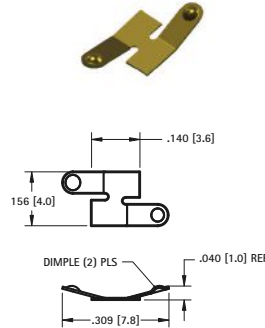
CAT. NO. 122 Bulk

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

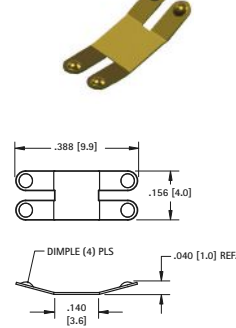


CAT. NO. 118 Bulk

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

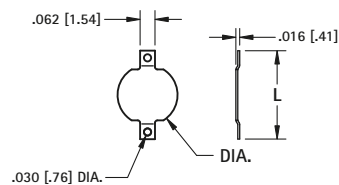
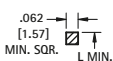
AVAILABLE ON TAPE AND REEL

SMT COMPACT*



- Assures proper contact

Pad Layout



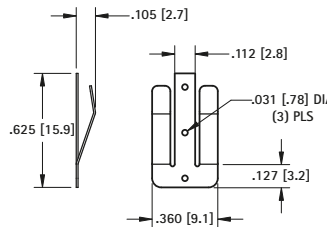
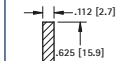
DWG. 1 MATERIAL: .008 (.20) Brass

SMT SPRING CONTACT*



- Assures proper contact

Pad Layout

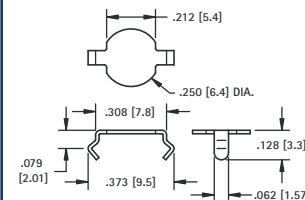


DWG. 2 MATERIAL: .010 (.25) Phosphor Bronze

THM SNAP IN*



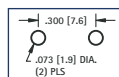
- Assures proper contact



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"

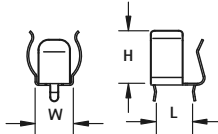


FIG. 1

"AAA" • "N" • "A23" • "AA" • "CR2"

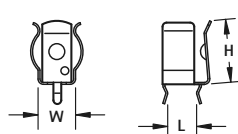


FIG. 2

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

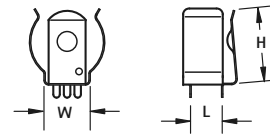


FIG. 3

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"

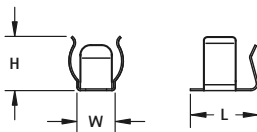


FIG. 4

"AAA" • "N" • "A23" • "AA" • "CR2"

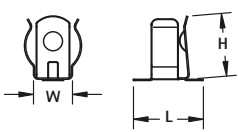


FIG. 5

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

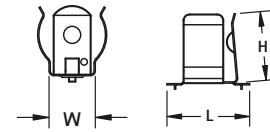


FIG. 6

TIN-NICKEL PLATE		MATTE TIN PLATE		FIG.	BATTERY SIZE	BATTERY DIAMETER	H	L	W
CAT. NO.	ON TAPE & REEL	CAT. NO.	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 & 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

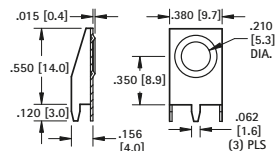


Refer to page 40 for Battery Contact Layout & Mounting Details

COIL SPRING

"AA" • "CR2" • "A"

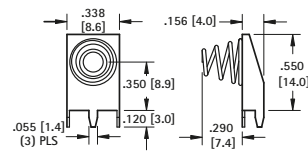
(+) POSITIVE BUTTON



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

CAT. NO. 595

(-) NEGATIVE SPRING

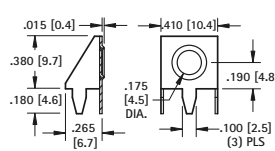


MATERIAL:
Frame: .015 (.38) Steel,
Matte Tin Plate

CAT. NO. 628

"AAA" • "N" • "A23"

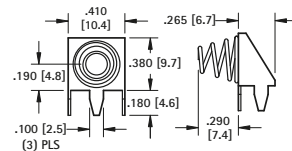
(+) POSITIVE BUTTON



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

CAT. NO. 637

(-) NEGATIVE SPRING



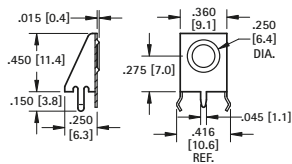
MATERIAL:
Frame: .015 (.38)
Steel, Matte Tin Plate

CAT. NO. 629

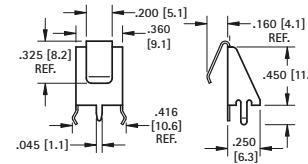
LEAF SPRING

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

"AA" • "CR2" • "A"



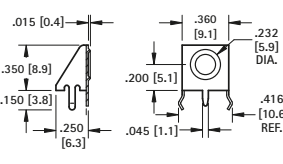
CAT. NO. 596



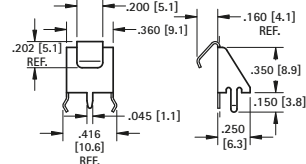
CAT. NO. 590

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

"AAA" • "N" • "A23"



CAT. NO. 597

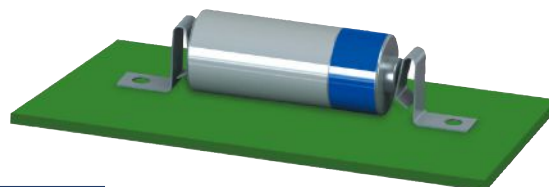


CAT. NO. 591

SURFACE MOUNT LEAF-SPRING CONTACTS

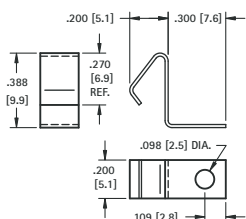
AVAILABLE ON TAPE AND REEL

- 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"

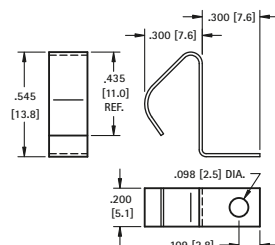


MATERIAL: .010 (.25) Spring Steel

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

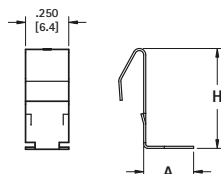
- Designed for direct placement onto PCB, no wire leads required
- Unique spring tension adjusts to variations in battery length
- Stainless Steel contacts provide superior corrosion resistance

MATERIAL: .012 (.30) Stainless Steel

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

SURFACE MOUNT

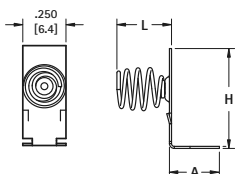
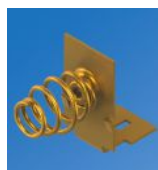
LEAF SPRING



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)

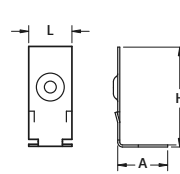
COIL SPRING



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

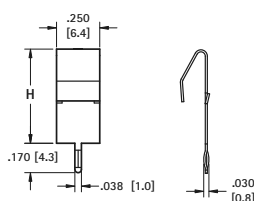


Finish: Gold Plate (Flash)

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

THRU HOLE MOUNT

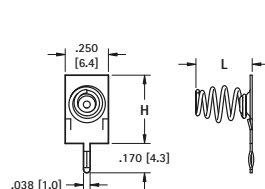
LEAF SPRING



Finish: Tin-Nickel Plate

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

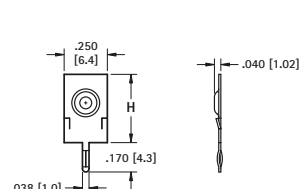
COIL SPRING



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)

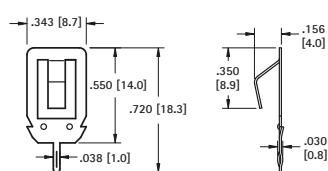
BUTTON CONTACT



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)

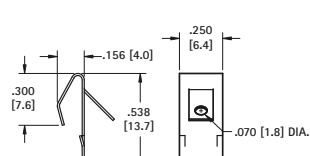
"AAA" • "N" • "AA" • "CR2" • "A"



Finish: Tin-Nickel Plate

CAT. NO. 108-2

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

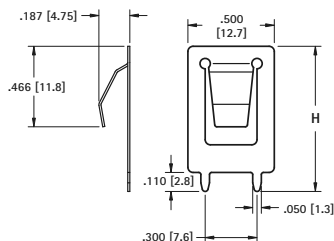


Solder Lug

Finish: Tin-Nickel Plate

CAT. NO. 1107-1

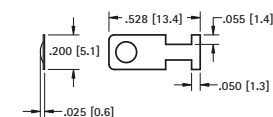
"AAA" • "AAAA" • "N" • "12V"



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

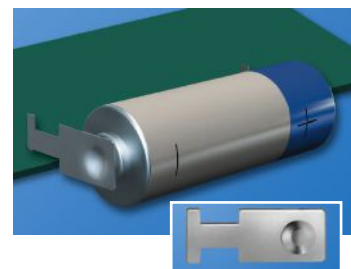
CAT. NO.	(H) Height	BATTERY REFERENCE
109-2	.840 (21.3)	"AA" • "A" • "17500" • "18350" • "18650" • "C"
109-3	1.000 (25.4)	"20700" • "21700" • "D"

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

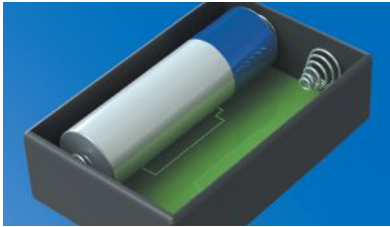


CAT. NO. 230-1

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

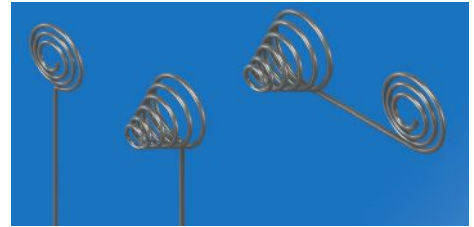


SLIDE-IN PC MOUNT CONTACTS

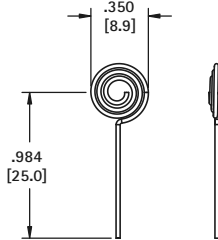


- Economical and reliable contacts
- Designed for direct placement onto PCB, no wire leads required
- Unique spring tension adjusts to variations in battery length
- Reliable spring tension assure low contact resistance and dependable connection

Refer to page 41 for Battery Contact Layout & Mounting Details



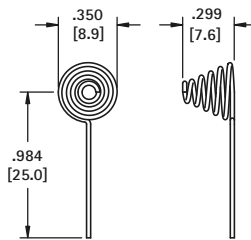
"AA" • "CR2" • "A" • "17500" • "18350" • "18650"



CAT. NO. 242

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

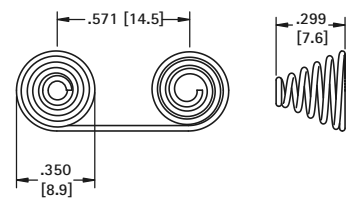
"AA" • "CR2" • "A" • "17500" • "18350" • "18650"



CAT. NO. 243

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

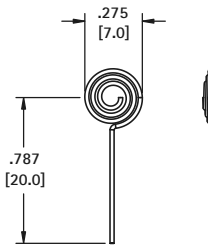
"AA"



CAT. NO. 244

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

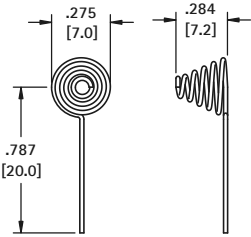
"AAAA" • "A23" • "A27" • "AAA" • "N"



CAT. NO. 179

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

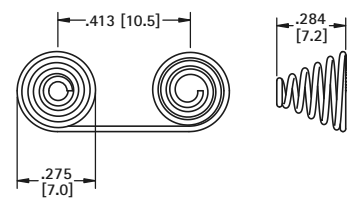
"AAAA" • "A23" • "A27" • "AAA" • "N"



CAT. NO. 180

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

"AAA"

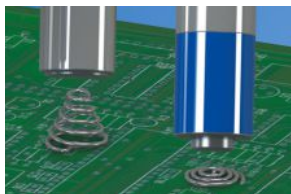


CAT. NO. 181

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

BATTERY SPRING CONTACTS

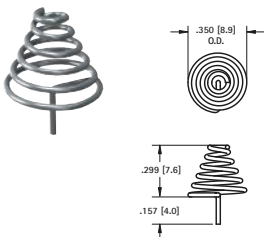
THRU-HOLE MOUNT • "AA" • "CR2"



Solders directly to PCB, no wiring required

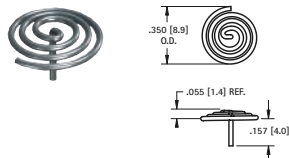
MATERIAL: .024 (.60) Dia Spring Steel, Nickel Plate

NEGATIVE



CAT. NO. 240

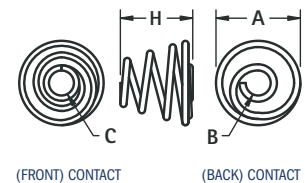
POSITIVE



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:

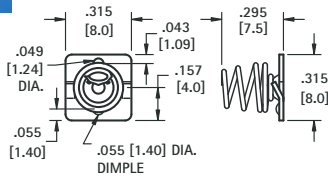
Plate: .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate

Refer to page 42 for Battery Contact Layout & Mounting Details

"AAA" • "AAAA" • "N" • "12V"



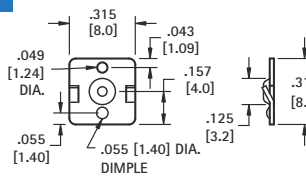
(-) NEGATIVE SPRING



CAT. NO. 5203



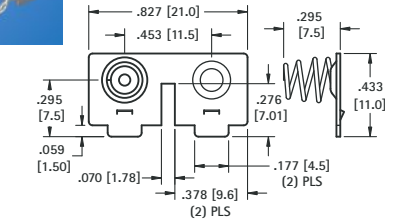
(+) POSITIVE BUTTON



CAT. NO. 5225



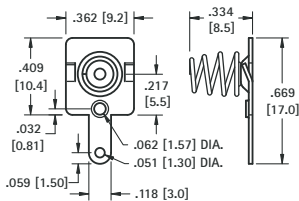
DUAL CONTACT (RIGHT)



CAT. NO. 5213



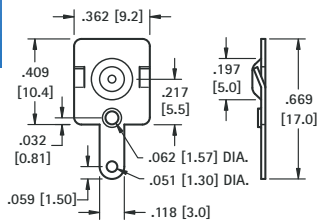
(-) NEGATIVE SPRING WITH TAB



CAT. NO. 5204



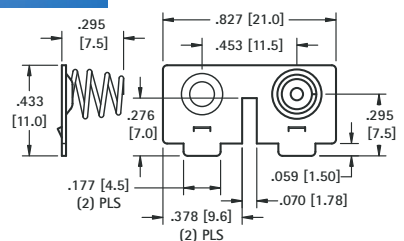
(+) POSITIVE BUTTON WITH TAB



CAT. NO. 5226



DUAL CONTACT (LEFT)

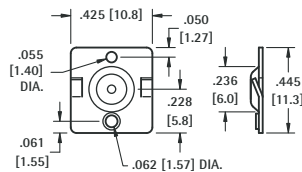


CAT. NO. 5214

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



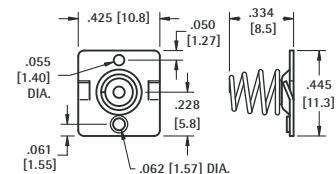
(+) POSITIVE BUTTON



CAT. NO. 5224



(-) NEGATIVE SPRING

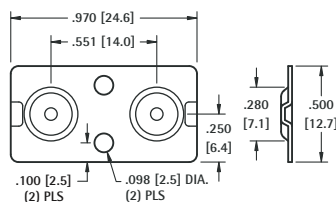


CAT. NO. 5202

"AA"



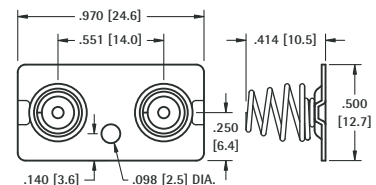
DUAL BUTTON CONTACT



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

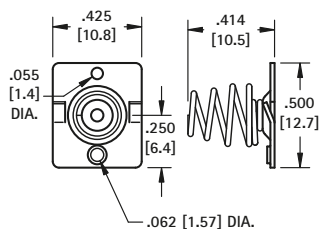
MATERIAL:

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

Refer to page 42 for Battery Contact Layout & Mounting Details

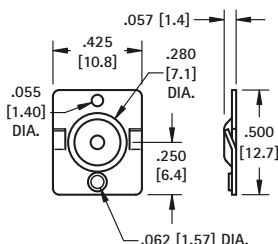
"AA" - "CR2" - "A" - "17500" - "18350" - "18650"

(-) NEGATIVE SPRING



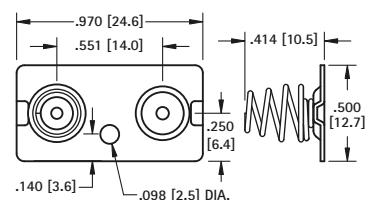
CAT. NO. 5222

(+) POSITIVE BUTTON



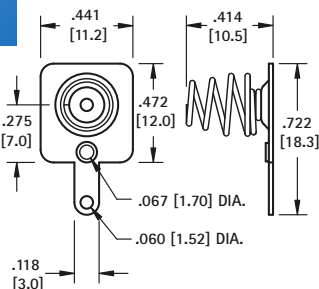
CAT. NO. 5221

DUAL CONTACT ("AA" ONLY)



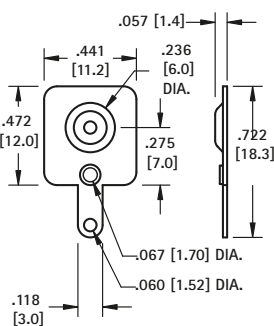
CAT. NO. 5212 Left or Right

(-) NEGATIVE SPRING WITH TAB



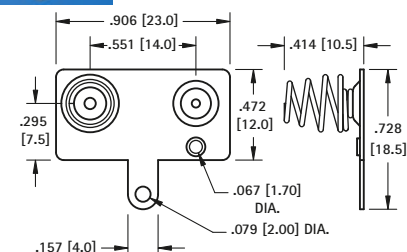
CAT. NO. 5201

(+) POSITIVE BUTTON WITH TAB



CAT. NO. 5223

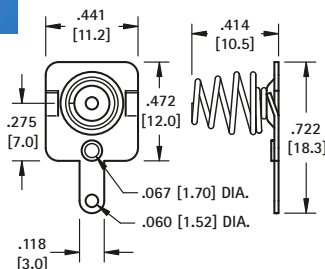
DUAL CONTACT ("AA" ONLY)



CAT. NO. 5210 Left

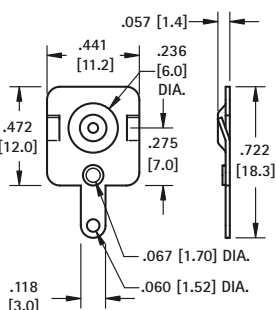
CAT. NO. 5211 Right (Shown)

(-) NEGATIVE SPRING WITH TAB/LANCE



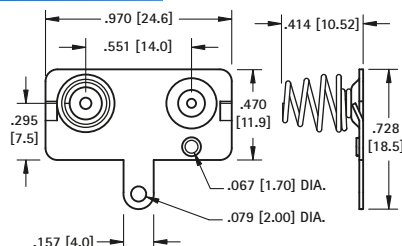
CAT. NO. 5220

(+) 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

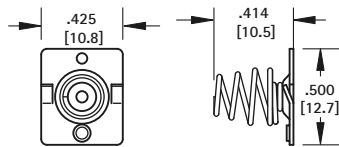


MATERIAL:

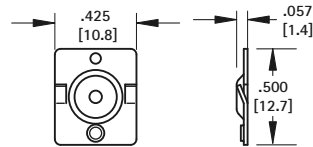
Plate: .020 (.51) Steel, Nickel Plate **Spring:** Spring Steel, Nickel Plate

Refer to page 42 for Battery Contact Layout & Mounting Details

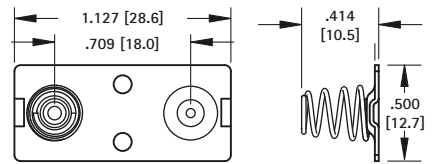
"A" CELL



CAT. NO. 5222



CAT. NO. 5221

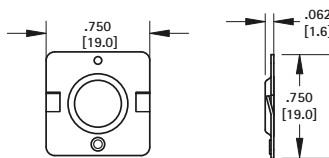


CAT. NO. 5207

"C" CELL



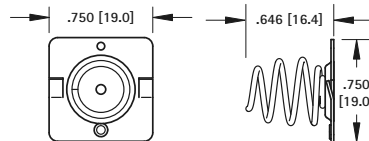
(+) POSITIVE BUTTON



CAT. NO. 5240



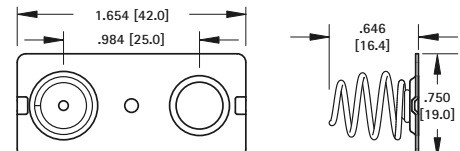
(-) NEGATIVE SPRING



CAT. NO. 5241



DUAL CONTACT

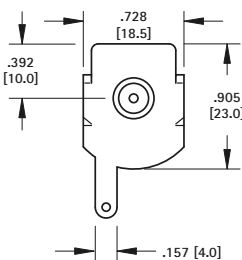


CAT. NO. 5242

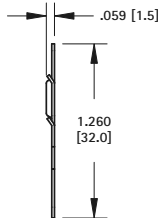
"D" CELL



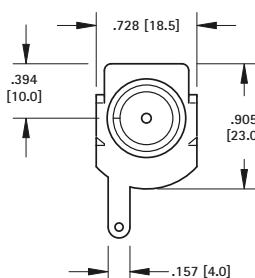
(+) POSITIVE BUTTON



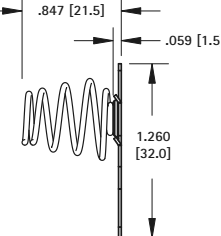
CAT. NO. 5250



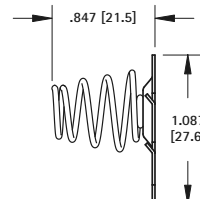
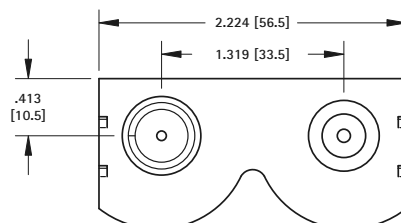
(-) NEGATIVE SPRING



CAT. NO. 5251



DUAL CONTACT



CAT. NO. 5253 Left

CAT. NO. 5252 Right (Shown)

SNAP-ON CONTACTS



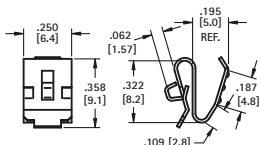
- Economical and reliable contacts are ideal for molded cases with self contained battery compartments
- Solder "ear" to facilitate soldering of wire lead
- Unique spring tension contact adjusts to variations in battery length
- Reliable spring tension contacts assure low contact resistance
- Clips easily 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"



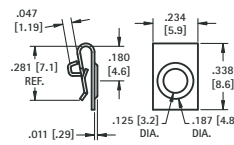
CAT. NO. 204



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



CAT. NO. 238

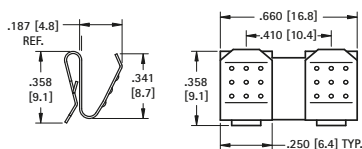


MATERIAL: .010 (.25) Stainless Steel, Nickel Plate

"AAA"



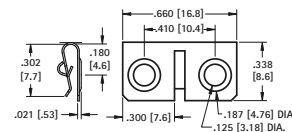
CAT. NO. 202



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



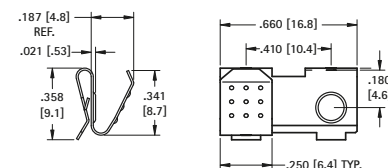
CAT. NO. 294



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



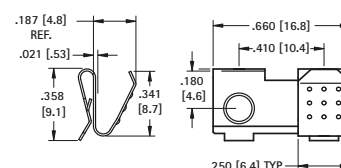
CAT. NO. 295



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



CAT. NO. 296

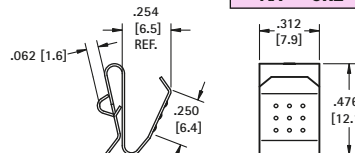


MATERIAL: .010 (.25) Spring Steel, Nickel Plate

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



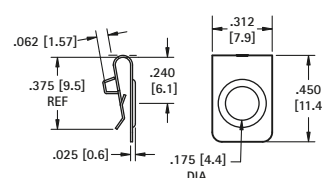
CAT. NO. 209



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



CAT. NO. 228



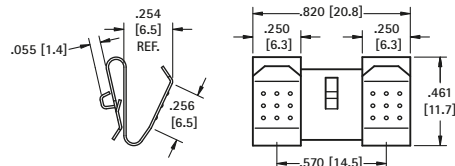
MATERIAL: .010 (.25) Stainless Steel, Nickel Plate

"AA"



CAT. NO. 288

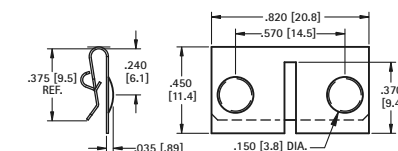
The (2) two leaf contacts are separate, allowing a divider between the batteries.



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



CAT. NO. 292

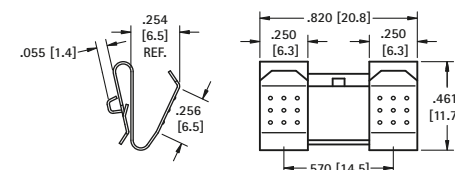


MATERIAL: .010 (.25) Stainless Steel, Nickel Plate



CAT. NO. 210

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

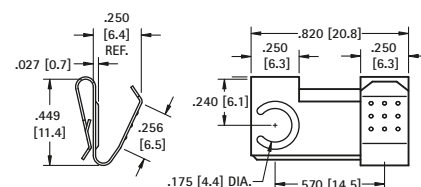


MATERIAL: .012 (.30) Spring Steel, Nickel Plate



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

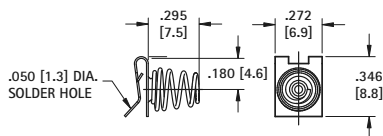
- Sharp barbs securely anchor contact in place
- Clips easily over .060 (1.5) to 0.70 (1.8) wall
- Long spring will accommodate variations in battery lengths

MATERIAL: Steel, Nickel Plate

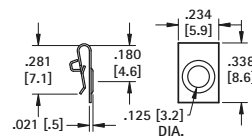
Refer to page 42 for Battery Contact Layout & Mounting Details



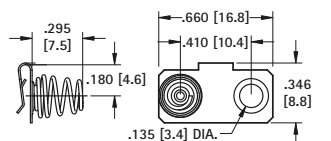
"AAA"



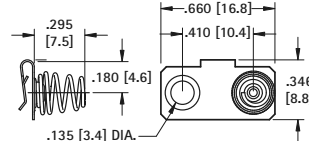
CAT. NO. 267



CAT. NO. 238

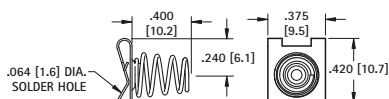


CAT. NO. 299

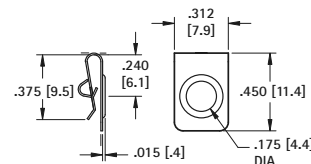


CAT. NO. 287

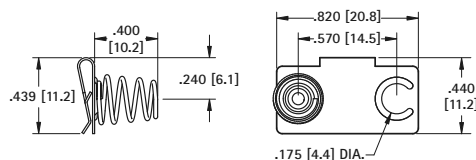
"AA"



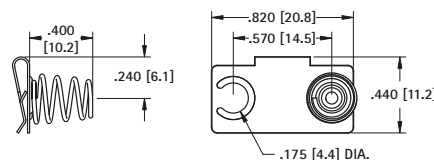
CAT. NO. 289



CAT. NO. 228



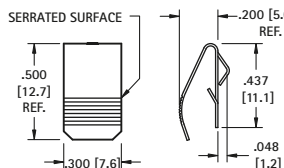
CAT. NO. 297



CAT. NO. 293

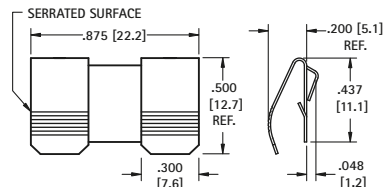
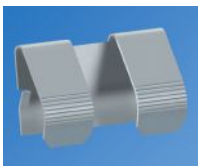
SLIDE-IN MOUNT CONTACTS

"AA" - "CR2" - "A" - "9V" - "17500" - "18350" - "18650"



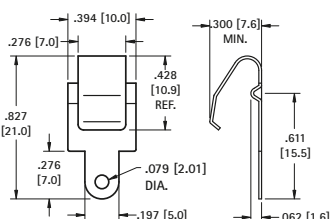
CAT. NO. 5205

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



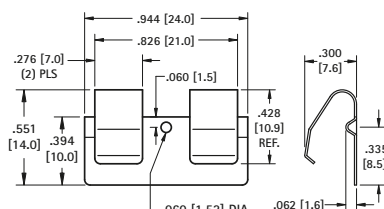
CAT. NO. 5206

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



CAT. NO. 5209

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



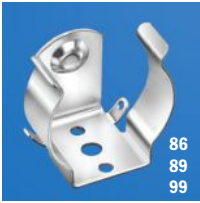
CAT. NO. 5208

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

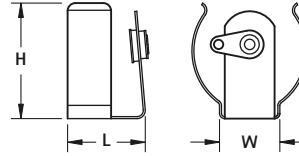
Base: Steel, Nickel Plate
Contacts: Brass, Nickel Plate

- 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

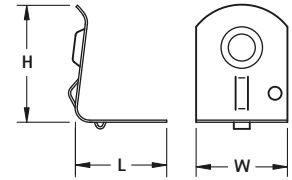
"AA" - "C" - "D"



Refer to page 41 for Battery Contact Layout & Mounting Details

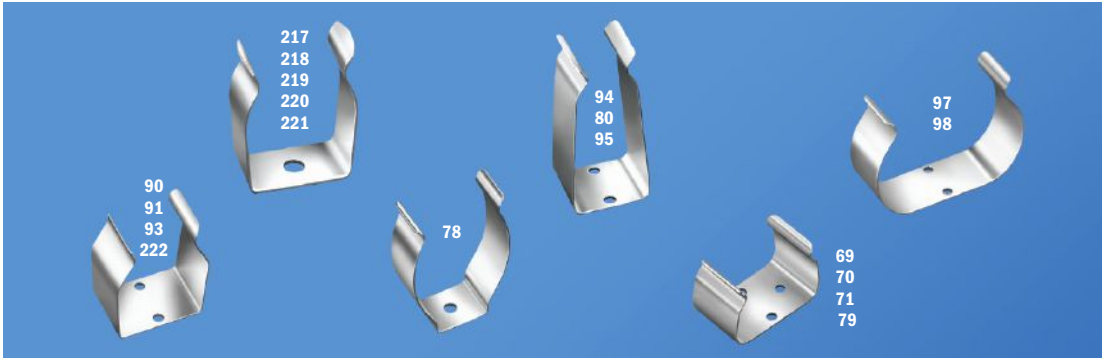
- Designed for mounting in self-contained, non-metallic battery compartments
- Reliable spring tension assures low contact resistance
- Recessed contact holds battery in place
- All clips have anti-rotation tab

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

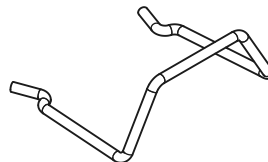
CAT. NO.	DESCRIPTION	MATERIAL
Sub C Cell (22.0 - 23.0mm Dia)		
221	One cell	Steel
C Cell (22.0 - 29.0mm Dia)		
222	One cell	Steel
93	One cell	Aluminum
97	Two Cell	Aluminum
D Cell (30.0 - 35.0mm Dia)		
94	One cell	Aluminum
78	One cell	Steel
98	Two Cell	Aluminum

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

BATTERY RETAINER CLIPS



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



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

RUGGED BATTERY HOLDERS



FIG. 1 STEEL



FIG. 1 ALUMINUM

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. 2 STEEL, PHENOLIC BASE

ALUMINUM



FIG. 2 ALUMINUM

CONNECTED IN SERIES

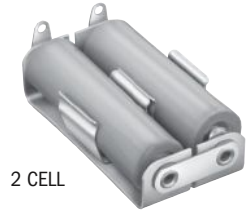
Features pre-connected jumper strap insulated from the Aluminum base. Batteries held in series circuit without need of additional wiring.

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
"AA" CELL	
146	1
147	2
148	3
"C" CELL	
149	1
150	2
151	3
"D" CELL	
152	1
153	2
158	3

WITH PC LUGS

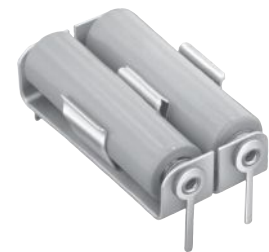
For printed circuitry we have standardized our most popular holders with PC Lugs. Choice of single or multiple holders "AA" assembled with PC solder lugs.

SPECIFICATIONS:

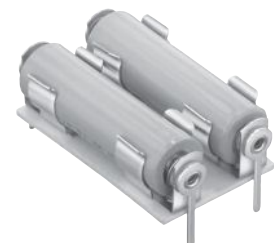
Base: Steel, Phenolic or Aluminum

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

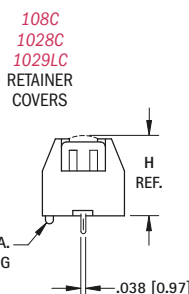
APPLICATIONS

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

RETAINER
COVERS



THM LOW PROFILE



SPECIFICATIONS

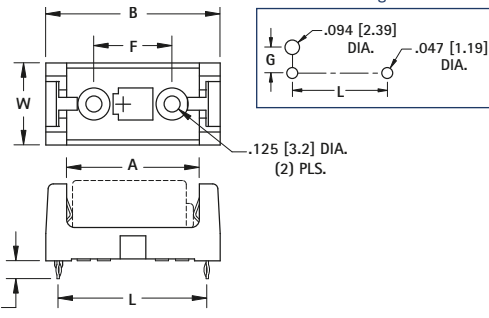
Base/Retainer Cover: PBT, UL 94V-0

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

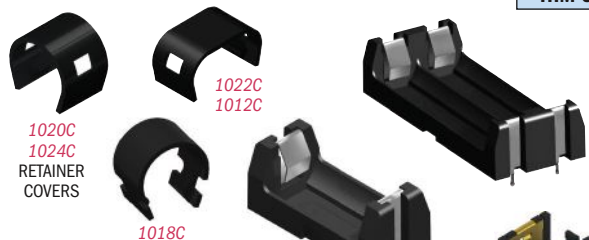
Operating Temp Range: -60°F to +293°F (-51°C to +145°C)

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

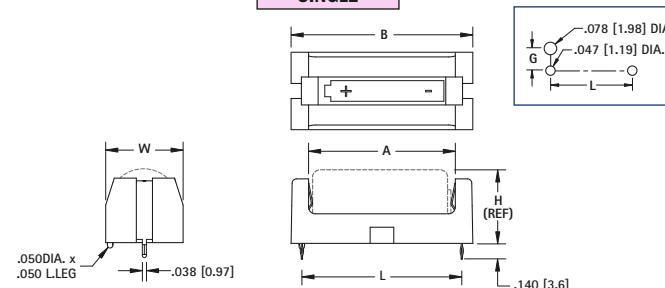
Base: High Temp Nylon 46, UL 94V-0

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

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

SINGLE

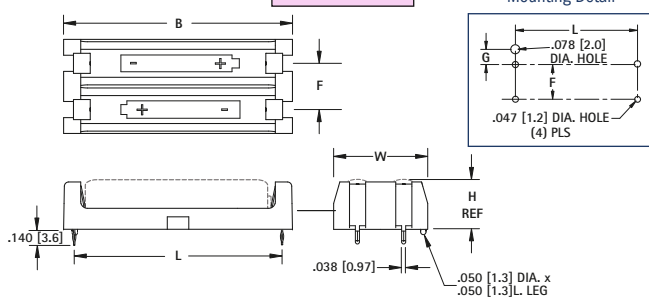
Mounting Detail



DWG. 1

DUAL

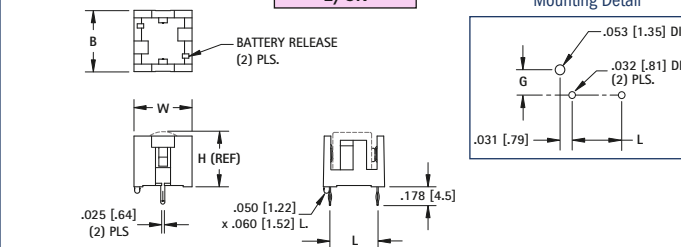
Mounting Detail



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	
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	All Major Manufacturers
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

THM BATTERY HOLDERS

SMT LOW PROFILE LITHIUM-ION & ALKALINE CELL HOLDERS

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

FEATURES

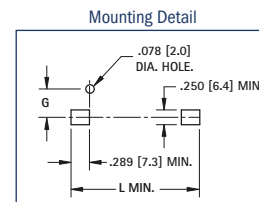
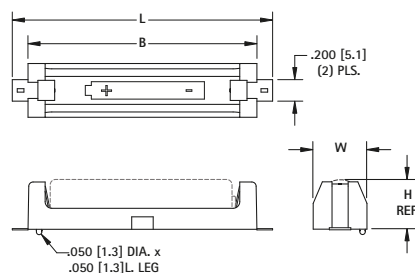
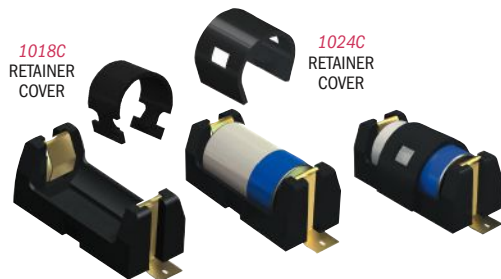
- Low profile surface mount holders for Cylindrical Lithium and Alkaline batteries
- UL 94V-0 Heat resistant Nylon Housings well suited for reflow soldering
- Designed for vacuum pick and place assembly
- Gold-plated Phosphor Bronze contacts assure low contact resistance and are readily solderable

- 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

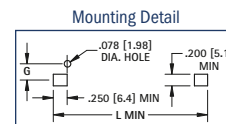
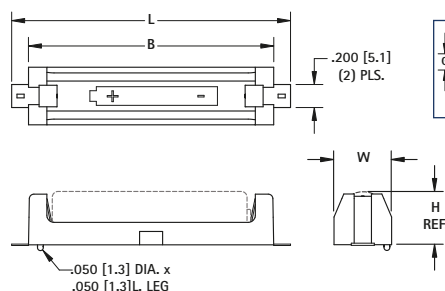
Base: High Temp Nylon 46, UL 94V-0

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

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

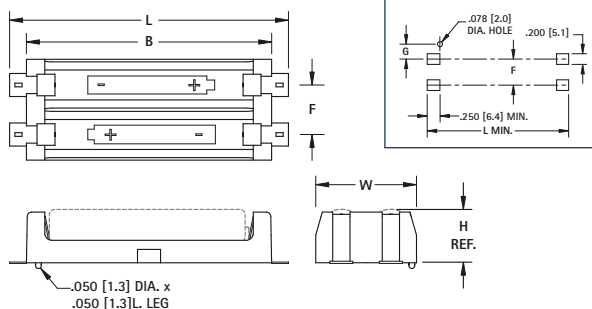
Packaging Spec's: Supplied in trays

SINGLE



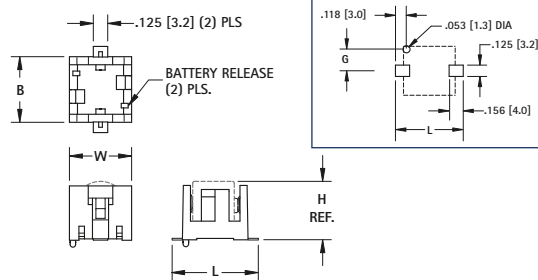
DWG 1

DUAL



DWG 2

"1/3N"



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

DWG 3

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

SMT & THM POLARIZED LITHIUM-ION & ALKALINE CELL HOLDERS

RETAINER
COVERS



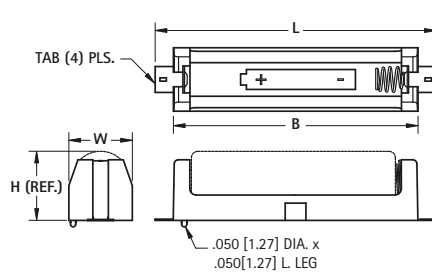
FEATURES

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

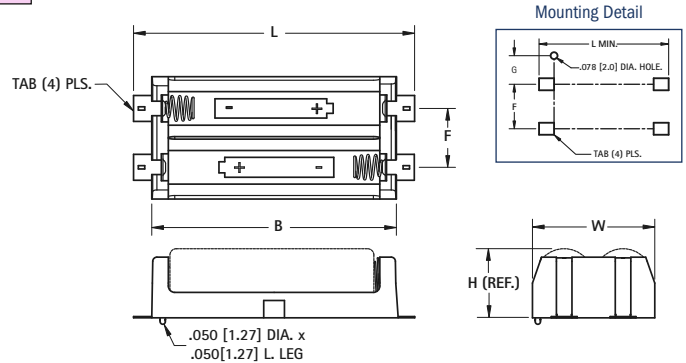
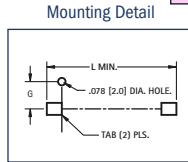
SPECIFICATIONS

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)

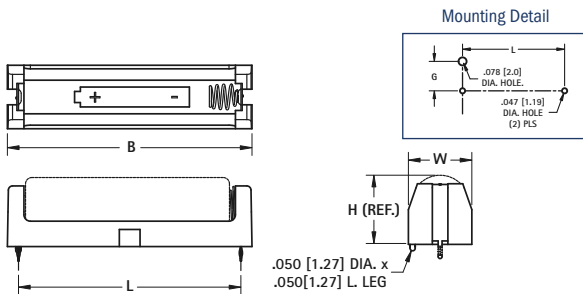
Packaging Spec's: Supplied in trays



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



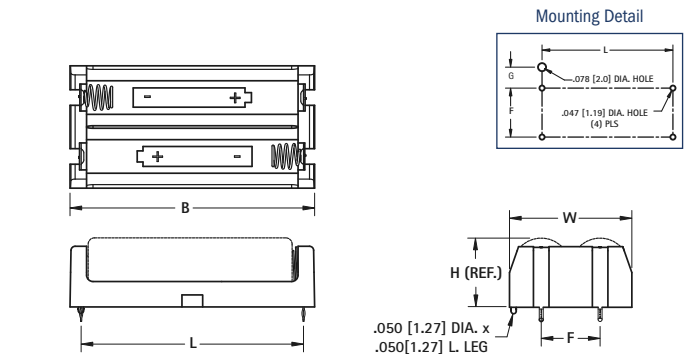
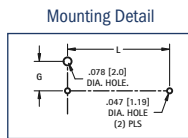
DWG. 3

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)

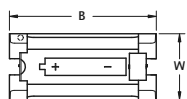
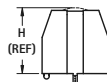
Contacts: .012 (.30) Stainless Steel, Gold Plate (Flash) - SMT

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

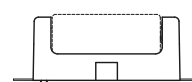
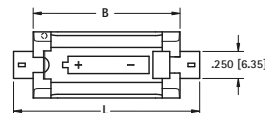
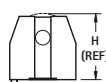
THM



Thru-Hole Mount (THM)



1018C
RETAINER
COVER
FITS ALL
HOLDERS

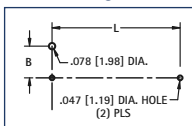


SMT



Surface Mount (SMT)

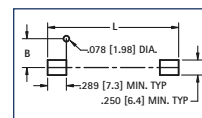
Mounting Detail



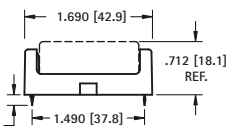
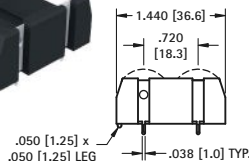
CAT. NO.	MOUNTING STYLE	L	W	H (Ref)	B	G	CELL SIZE	PACKAGING SPEC'S
1010	SMT	1.723 (43.8)	.612 (15.5)	.661 (16.8)	1.360 (34.5)	.265 (6.7)	CR2	50 pieces per tray
1011	THM	1.156 (29.4)	.612 (15.5)	.661 (16.8)	1.360 (34.5)	.265 (6.7)	CR2	
1050	SMT	2.062 (52.4)	.720 (18.3)	.712 (18.1)	1.690 (42.9)	.319 (8.1)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

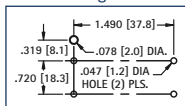
Mounting Detail



THM DUAL CR123A



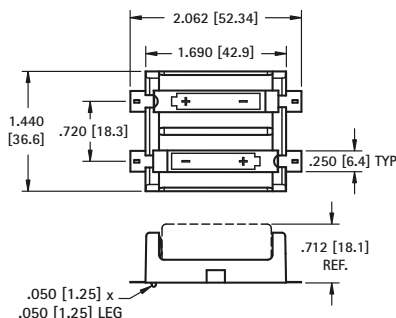
Mounting Detail



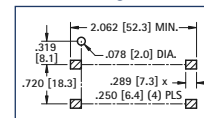
CAT. NO. 1079*

*Base material: PBT UL 94V-0

SMT DUAL CR123A



Mounting Detail



CAT. NO. 1080

Packaging Spec's: 25 pieces per tray

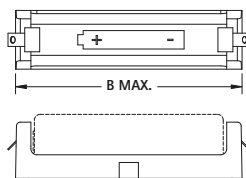
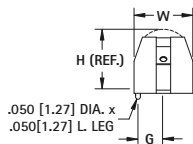
IN-LINE LITHIUM-ION & ALKALINE HOLDERS

SINGLE

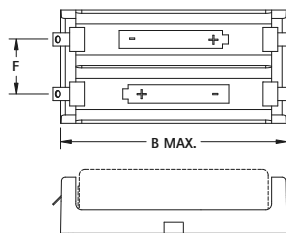
SPECIFICATIONS

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

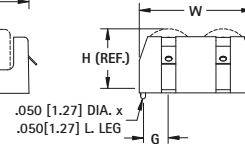
DUAL



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



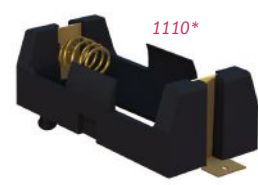
1095P*

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

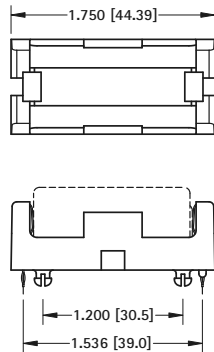
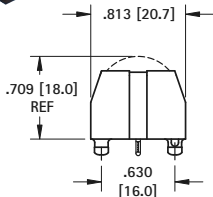
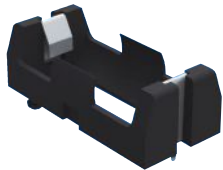
SPECIFICATIONS

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

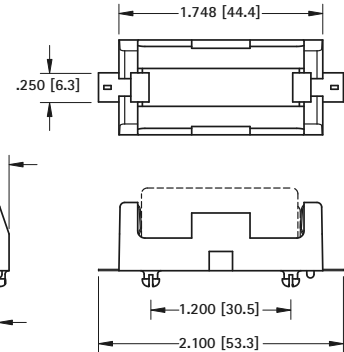
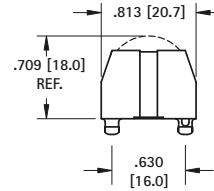


PC Battery Clip
Available
See Page 13.

THRU HOLE MOUNT



SINGLE CELL



SPECIFICATIONS

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

CAT. NO. 1095 Leaf Springs

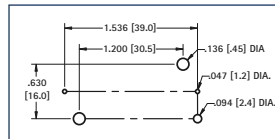
CAT. NO. 1095P Leaf Spring Polarized

CAT. NO. 1111 Coil Spring Polarized

CAT. NO. 1101 Solder Lugs

Packaging Spec's: 50 pieces per tray

Mounting Detail



SPECIFICATIONS

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

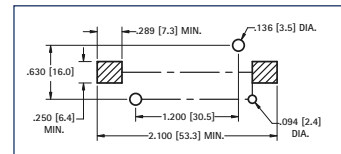
CAT. NO. 1096 Leaf Springs

CAT. NO. 1096P Leaf Spring Polarized

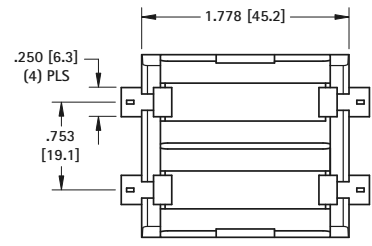
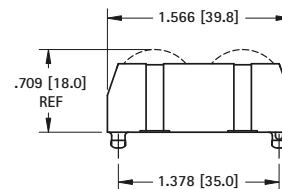
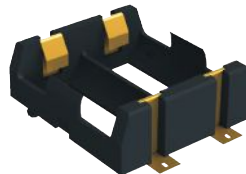
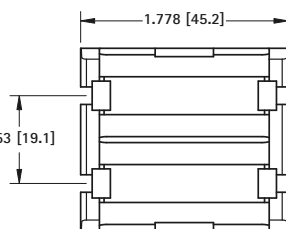
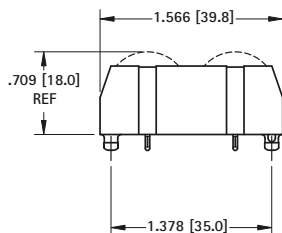
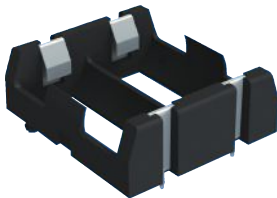
CAT. NO. 1110 Coil Spring Polarized

Packaging Spec's: 50 pieces per tray

Pad Layout



DUAL CELL



SPECIFICATIONS

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

CAT. NO. 1097 Leaf Springs

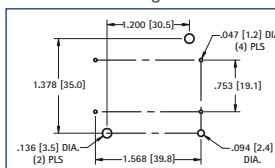
CAT. NO. 1097P Leaf Spring Polarized

CAT. NO. 1137 Coil Spring Polarized

CAT. NO. 1102 Solder Lugs

Packaging Spec's: 25 pieces per tray

Mounting Detail



SPECIFICATIONS

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

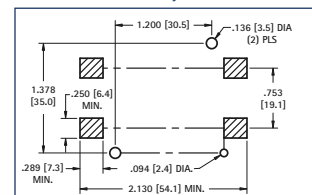
CAT. NO. 1098 Leaf Springs

CAT. NO. 1098P Leaf Spring Polarized

CAT. NO. 1136 Coil Spring Polarized

Packaging Spec's: 25 pieces per tray

Pad Layout



"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)

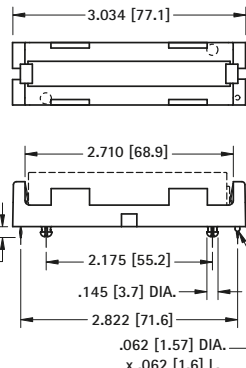
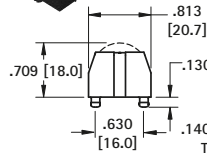
THM - Tin-Nickel Plate



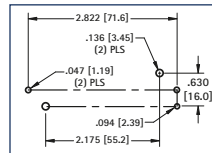
PC Battery Clip
Available
See Page 13.

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

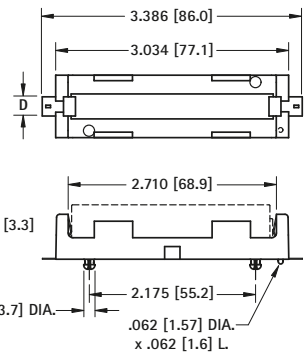
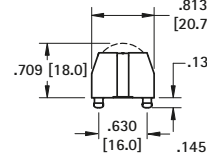
CAT. NO. 1043P Leaf Spring Polarized

CAT. NO. 1131 Coil Spring Polarized

CAT. NO. 1044 Solder Lugs

Packaging Spec's: 50 pieces per tray

SURFACE MOUNT



SPECIFICATIONS

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

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

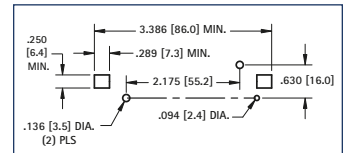
CAT. NO. 1042 Leaf Springs

CAT. NO. 1042P Leaf Spring Polarized

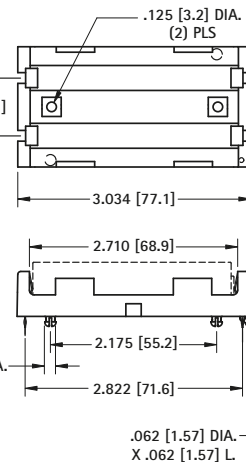
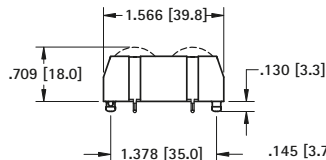
CAT. NO. 1130 Coil Spring Polarized

Packaging Spec's: 50 pieces per tray

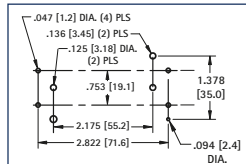
Pad Layout



DUAL CELL



Mounting Detail



SPECIFICATIONS

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

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

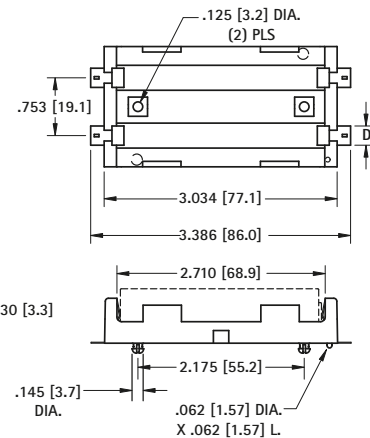
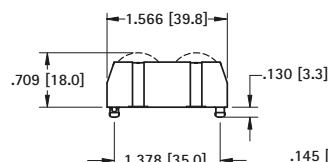
CAT. NO. 1049 Dual Springs

CAT. NO. 1049P Leaf Spring Polarized

CAT. NO. 1135 Coil Spring Polarized

CAT. NO. 1047 Solder Lugs

Packaging Spec's: 25 pieces per tray



SPECIFICATIONS

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

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

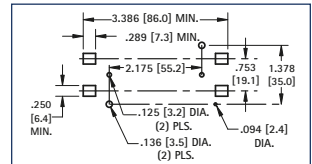
CAT. NO. 1048 Dual Springs

CAT. NO. 1048P Leaf Spring Polarized

CAT. NO. 1134 Coil Spring Polarized

Packaging Spec's: 25 pieces per tray

Pad Layout



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

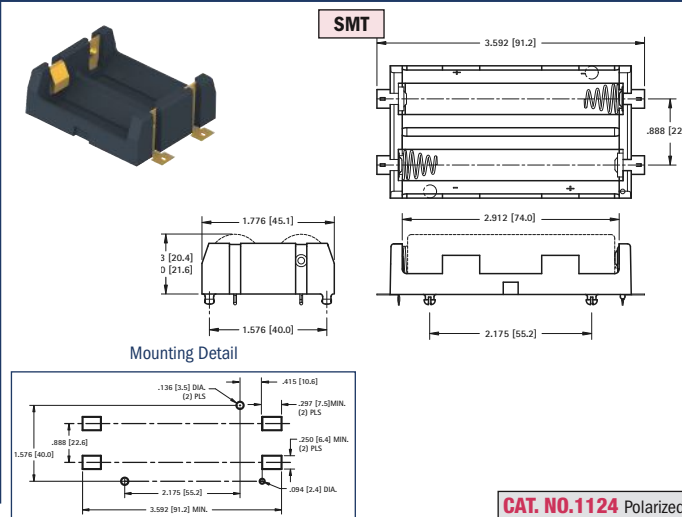
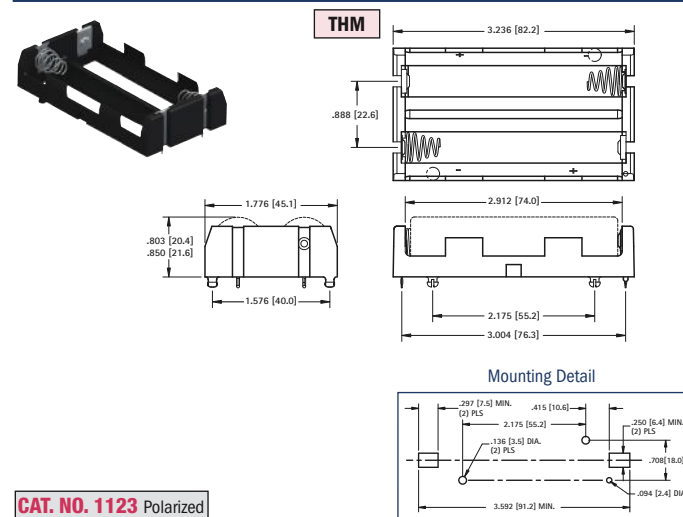
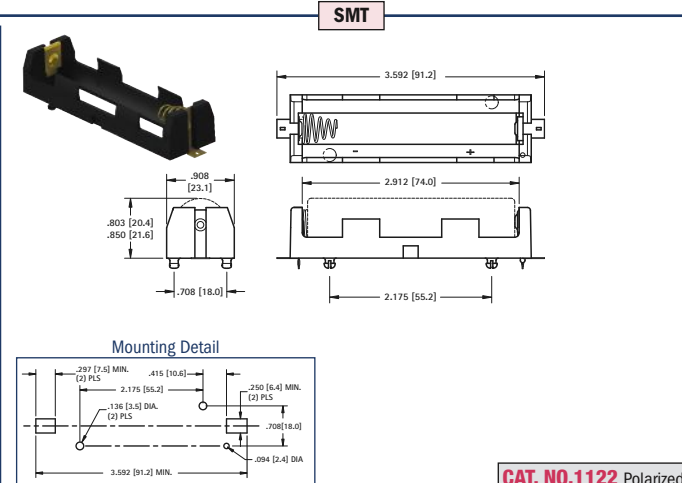
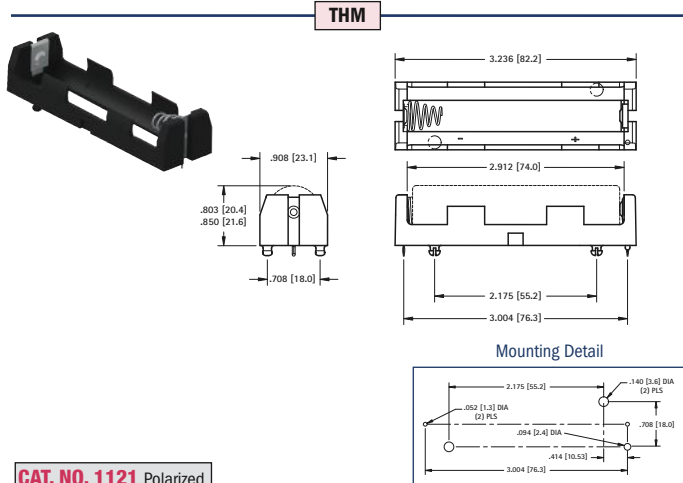
APPLICATIONS

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

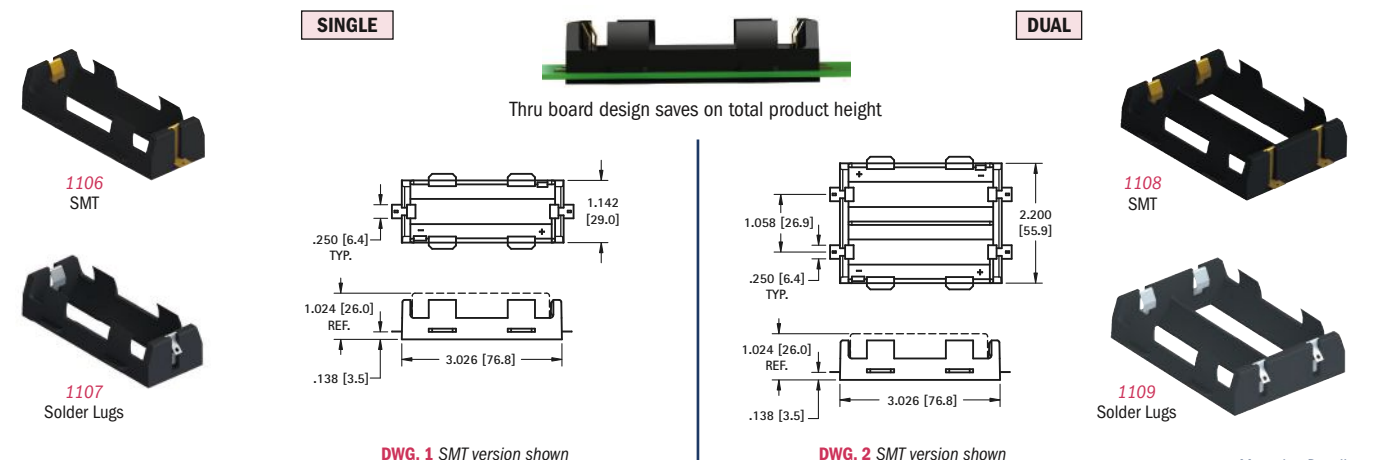
SPECIFICATIONS

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



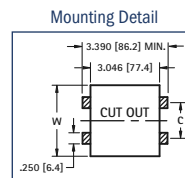
SMT & IN-LINE "26650" LITHIUM-ION HOLDERS



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

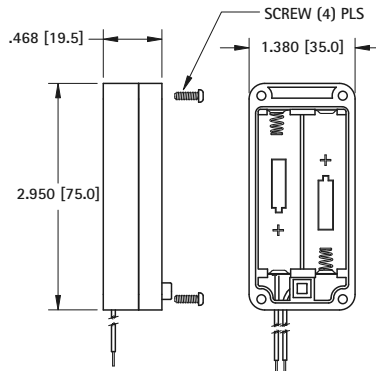
Springs: Spring Steel, Nickel Plate

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)

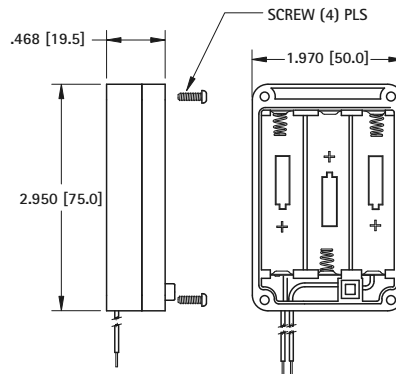
"AA"

Two (2) Cells - In Series



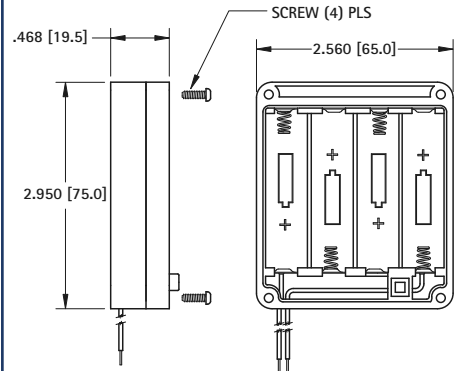
CAT. NO. 2438 Wire Leads with On/Off Switch

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

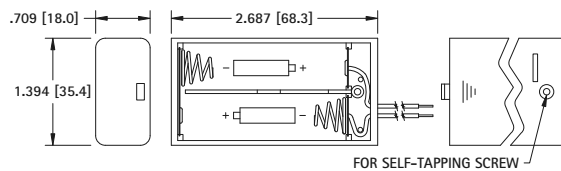
ON/OFF SWITCH
OPTIONAL

See page 33 for
Mating PC Jacks



"AA"

Two (2) Cells - In Series

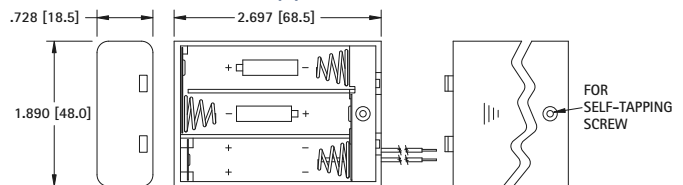


CAT. NO. 2490 Wire Leads Only

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

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

Three (3) Cells - In Series



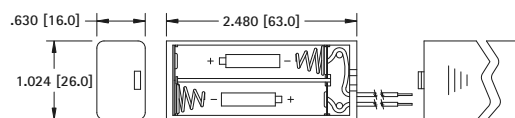
CAT. NO. 2487 Wire Leads Only

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

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

"AAA"

Two (2) Cells - In Series

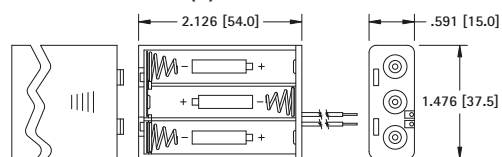


CAT. NO. 2489 Wire Leads Only

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

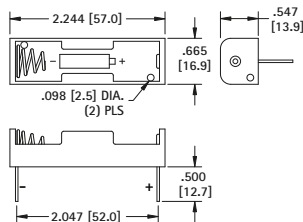
Wire Leads: 6.0 (152), #26 AWG Stripped and Tinned, UL/CSA 1007

Ribbon: Woven Nylon, Red

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

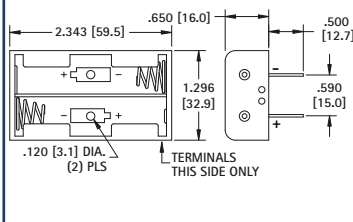
"AA"

One (1) Cell



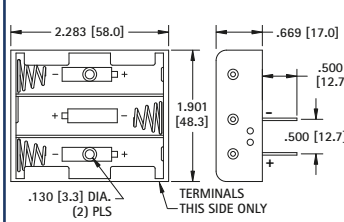
CAT. NO. 2460	PC Mount
CAT. NO. 2460RB	PC Mount w/Ribbon
CAT. NO. 2461	Wire Leads Only
CAT. NO. 2461CN	Leads w/PC Connector

Two (2) Cells - In Series



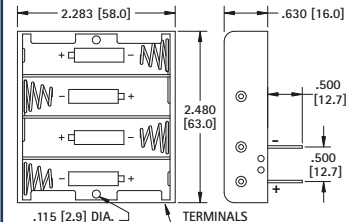
CAT. NO. 2462	PC Mount
CAT. NO. 2462RB	PC Mount w/Ribbon
CAT. NO. 2463	Wire Leads Only
CAT. NO. 2463CN	Leads w/PC Connector

Three (3) Cells - In Series



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

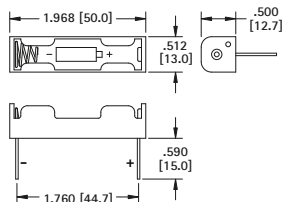
Four (4) Cells - In Series



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

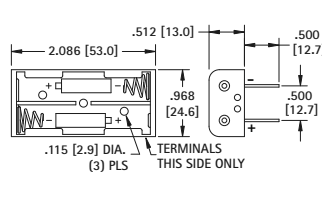
"AAA"

One (1) Cell



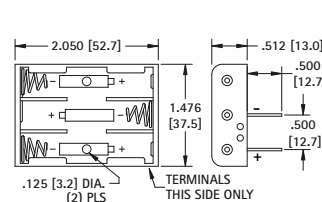
CAT. NO. 2466	PC Mount
CAT. NO. 2466RB	PC Mount w/Ribbon
CAT. NO. 2467	Wire Leads Only
CAT. NO. 2467CN	Leads w/PC Connector

Two (2) Cells - In Series



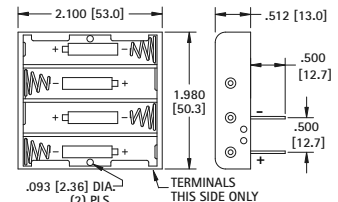
CAT. NO. 2468	PC Mount
CAT. NO. 2468RB	PC Mount w/Ribbon
CAT. NO. 2469	Wire Leads Only
CAT. NO. 2469CN	Leads w/PC Connector

Three (3) "AAA" Cells - In Series



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

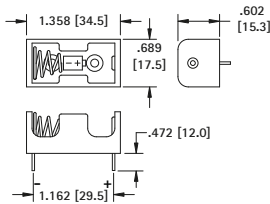
Four (4) Cells - In Series



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

ECONOMICAL PLASTIC BATTERY HOLDERS (CONT'D)

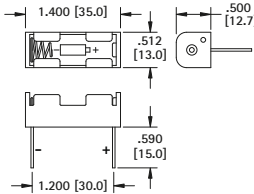
"1/2 AA" Cell -or- "CR2" Cell



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

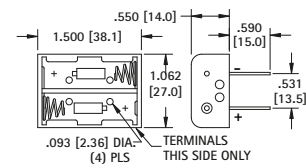
"1/2AA" - "CR2" - "N" - "12V"

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



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

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



CAT. NO. 2472	PC Mount
CAT. NO. 2472RB	PC Mount w/Ribbon
CAT. NO. 2473	6" Wire Leads
CAT. NO. 2473CN	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)

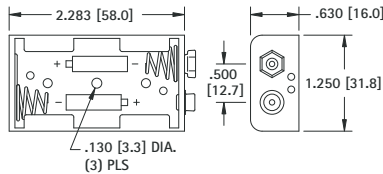
SPECIFICATIONS

Holder: Polypropylene

Male/Female Contacts: Brass, Nickel Plate

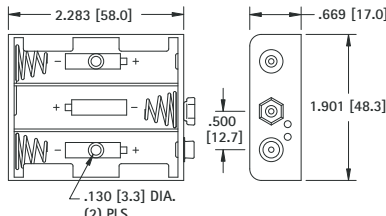
Springs: Spring Steel, Nickel Plate

Two Cells - in Series



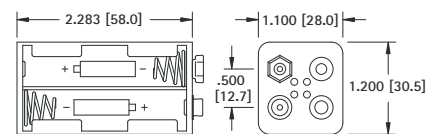
CAT. NO. 2474

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

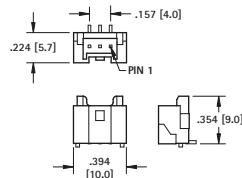
Current Rating: 3 Amps, 100V max

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

SMT

SUPPLIED ON TAPE AND REEL

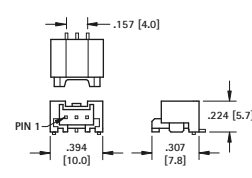
VERTICAL



CAT. NO. 974

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

HORIZONTAL

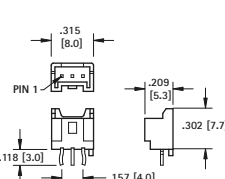


CAT. NO. 976

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

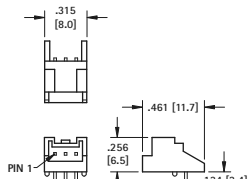
THM

VERTICAL



CAT. NO. 975

HORIZONTAL



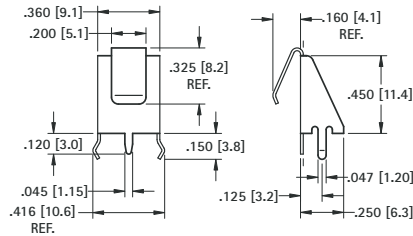
CAT. NO. 977

HORIZONTAL 9 VOLT PC LEAF-SPRING CONTACT

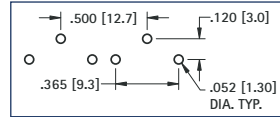
- Ideal "Slide-In" contact for easy installation and removal of 9 Volt batteries
- Space saving design installs directly onto the PC board
- Suitable for .062 (1.57) to .093 (2.36) PC boards

- 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

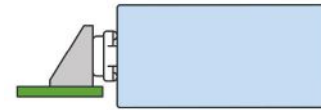
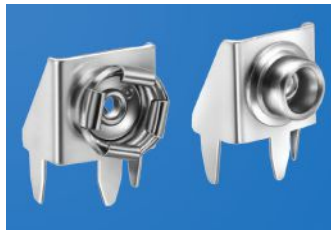
HORIZONTAL 9 VOLT PC SNAP-ON CONTACTS

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



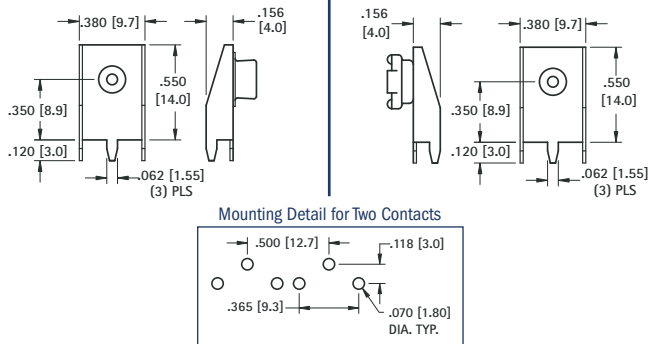
To Mount Battery "On" PC Board
Use Cat. No. 593 and Cat. No. 594



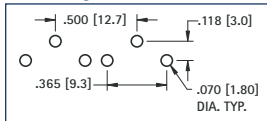
To Mount Battery "Off" PC Board
Use Cat. No. 635 and Cat. No. 636

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

"On-Board"



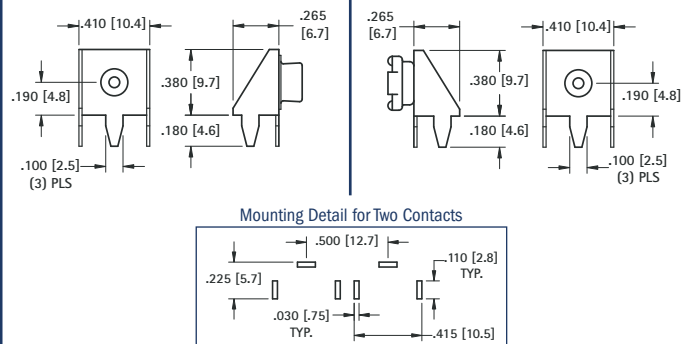
Mounting Detail for Two Contacts



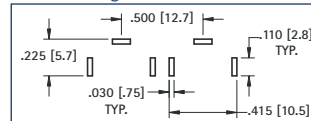
CAT. NO. 593 (Male)

CAT. NO. 594 (Female)

"Off-Board"



Mounting Detail for Two Contacts



CAT. NO. 635 (Male)

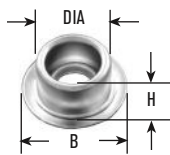
CAT. NO. 636 (Female)

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.

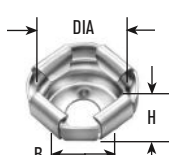
SOCKET OR STUD ONLY

FIG. 1



Stud only

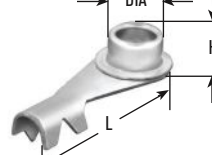
FIG. 2



Socket only

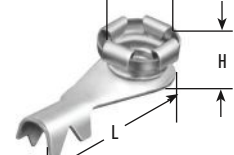
SOCKET OR STUD W/CRIMP LUG

FIG. 3



Stud w/Crimp Lug

FIG. 4



Socket w/Crimp Lug

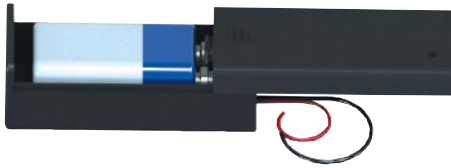
CAT. NO.	FIG. NO.	DIA	H	B	HOLE	SIZE	MATERIAL
261*	1	.224 (5.7)	.135 (3.4)	.312 (7.9)	.097 (2.5)	Junior*	Steel, Nickel Plate
269*	2	.210 (5.3)	.150 (3.8)	.250 (6.4)	.096 (2.4)		
262	1	.283 (7.2)	.143 (3.6)	.423 (10.7)	.125 (3.2)	Senior	Brass, Nickel Plate
270	2	.261 (6.6)	.145 (3.7)	.312 (7.9)	.125 (3.2)		

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

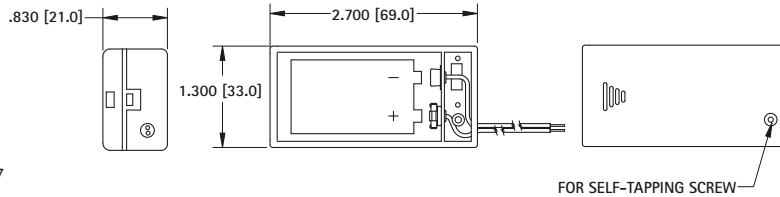
DIMENSIONS ARE FOR REFERENCE ONLY

*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

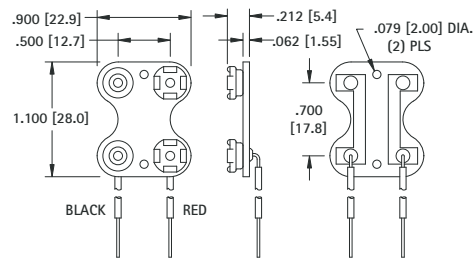
Wire Leads: 6.0 (152), #26 AWG, Tinned and stripped, UL/CSA 1007

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

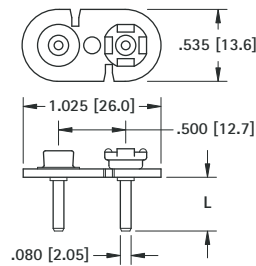
Wire: 7.0 (177.8) #22 AWG, UL/CSA #1061

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

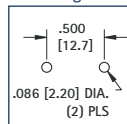
Base: .062 (1.57) Fibre

Contacts: Steel, Nickel Plate

Pins: Brass, Tin Plate

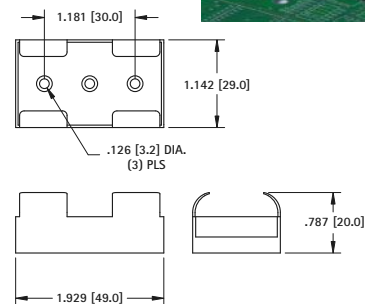
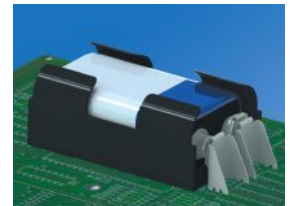
CAT. NO.	L LENGTH
967 (with PC Pins)	.120 (3.0)
968 (with PC Pins)	.400 (10.2)
68 (without PC Pins)	-

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

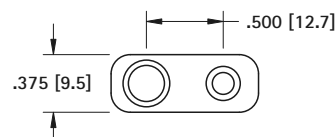
PROTECTIVE BATTERY CAP

- 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.

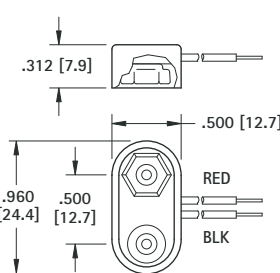
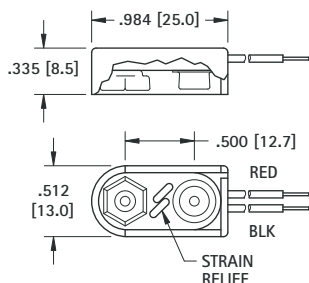
SPECIFICATIONS

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	
84-6	6.00 (152)	81-6	
84-8	8.00 (203)	81-8	

PREMIUM 9 VOLT BATTERY STRAPS

- Fully Assembled
- Rigid Assembly
- Ideal for rugged applications, made of high impact molded plastic with integral wire lead strain relief

Rigidly constructed. Nickel plate, male and female contacts. Female contacts are spring temper. Accepts numerous insertions to meet U.L. approved standards. Provides excellent mechanical strength and low contact resistance. Wires have tinned copper conductors, PVC insulation and the ends are stripped for easy connection.

Wires are rated to +176°F (+80°C) and 300V and meet UL/CSA 1007 requirements.

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)



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



ECONOMY 9 VOLT BATTERY STRAPS

- Fully Assembled
- Rigid Assembly

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

Modifications available with different wire lengths

SPECIFICATIONS

Contacts: Brass, Nickel Plate

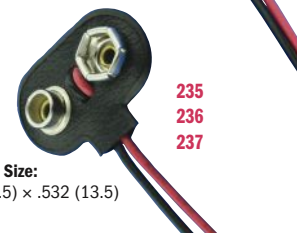
Wire: #26 AWG, UL/CSA 1007

End Strip: .250 (6.4) Long, Tinned

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



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	
233-M	233	6.00 (152)	236-M	236	
234-M	234	8.00 (203)	237-M	237	



MOLDED 9 VOLT BATTERY HOLDERS



1294



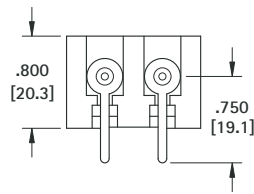
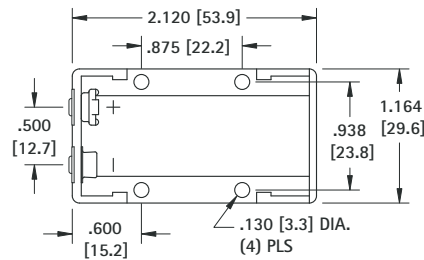
1295

SPECIFICATIONS

Body: Molded from high impact, Glass Filled Nylon

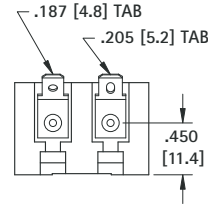
Terminals: Brass, Tin Plate

Contacts: Steel, Nickel Plate



CAT. NO. 1294

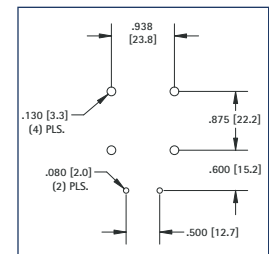
PC Terminals



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.

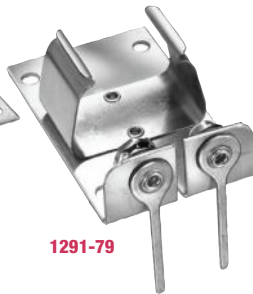
- Male-female snap-in terminals assure positive contact and proper polarity
- Durable, rugged construction
- Excellent spring retention – holds battery in place
- Withstands severe shock and vibration
- Operating temperature range: -40°F to +266°F (-40°C to +130°C)
- Impervious to most industrial solvents

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

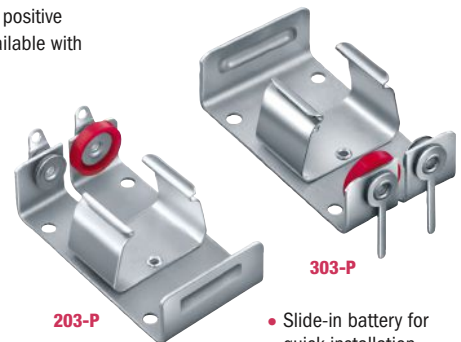
Solder Terminals: Brass, Tin Plate

PC Terminals: Brass, Tin Plate

Contacts & Clips: Steel, Nickel Plate

Insulation: Resin Impregnated

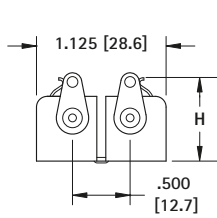
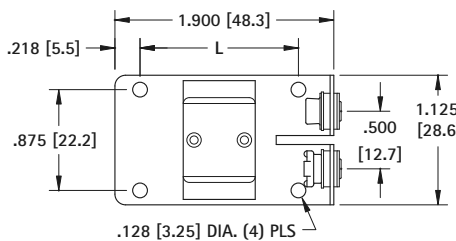
Polarizing Washer: Polyethylene



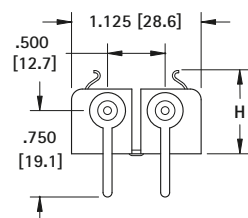
203-P

303-P

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

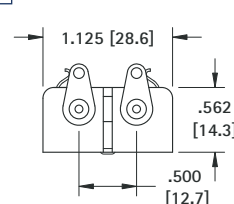
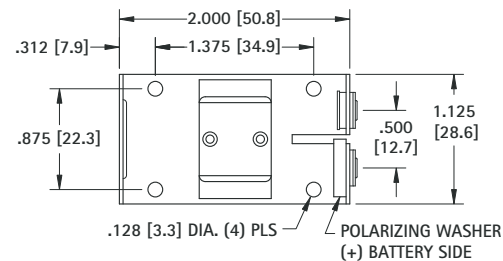
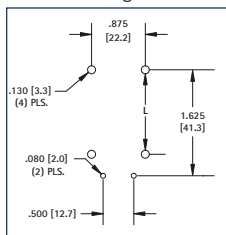


1290



1291

Mounting Detail



CAT. NO. 203-P

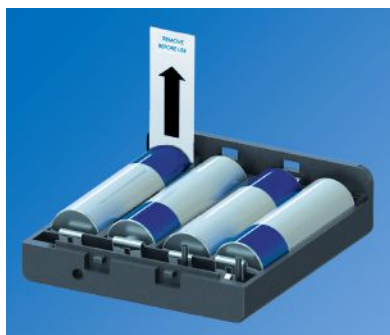
Solder Terminals

CAT. NO. 303-P

PC Terminals

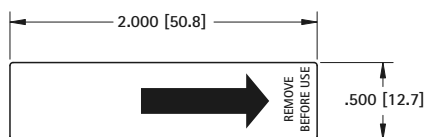
CAT. NO.	CAT. NO.	H	L	BATTERY REFERENCE	DESCRIPTION
1291	1290	.718 (18.2)	1.375 (34.9)	Alkaline	Low Profile
1291-79	1290-79	.812 (20.6)	1.375 (34.9)	Alkaline	Snap Fit
1291-66	1290-66	.857 (21.8)	1.250 (31.8)	Lithium-Ion	Snap Fit

BATTERY INSULATORS (PULL TABS)



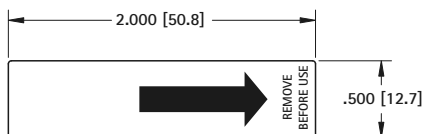
- Battery insulator will protect battery and circuitry during shipping and storage
- Insulator to be pulled out from product when it is time to activate

"AA" & LARGER



MATERIAL: .007 Mineral Reinforced Polypropylene, white

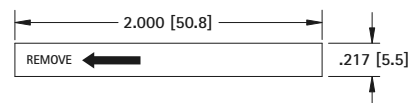
CAT. NO. 117 1000 pieces per roll



MATERIAL: .005 Polyester, clear

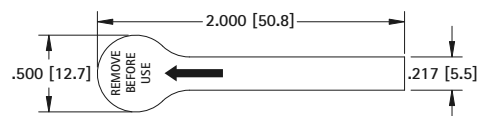
CAT. NO. 121 (Bulk)

BUTTON CELL & "AAA"



MATERIAL: .007 Mineral Reinforced Polypropylene, white

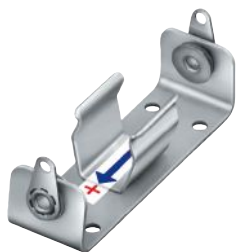
CAT. NO. 111 1000 pieces per roll



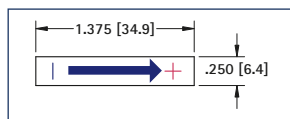
MATERIAL: .005 Polyester, clear

CAT. NO. 119 (Bulk)

POLARITY INDICATING LABEL



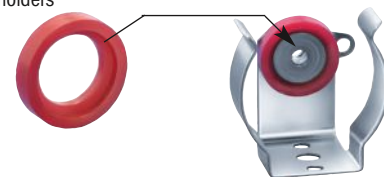
- No gluing or wetting needed
- Pressure sensitive adhesive back
- Economical
- Adheres to all surfaces



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.

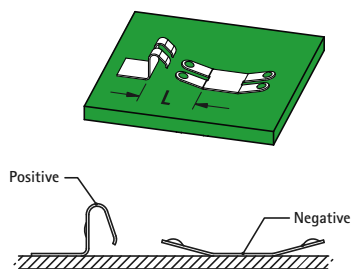


MATERIAL: Molded Polyethylene

CAT. NO. 59 (RED)

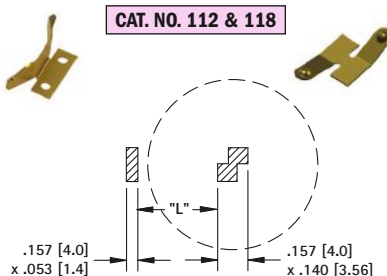
CAT. NO. 60 (BLACK)

COIN CELL ENCLOSURE CONTACT LAYOUTS



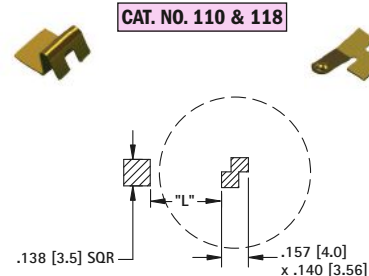
Refer to page 12 for Part Details

CAT. NO. 112 & 118



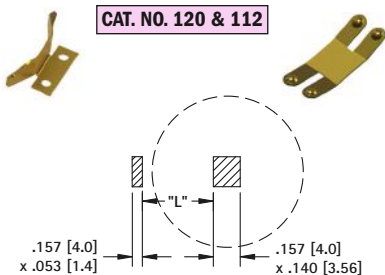
CAT. NO.	BATTERY REFERENCE	L
120 & 118	CR1216, CR1220	.178 (4.5)
	CR1612, CR1616, CR1620	.256 (6.35)

CAT. NO. 110 & 118



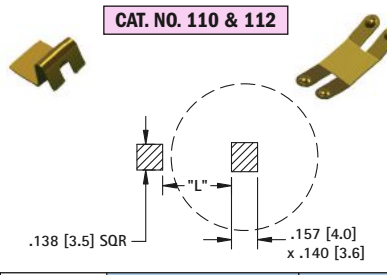
CAT. NO.	BATTERY REFERENCE	L
110 & 118	CR1225	.213 (5.4)
	CR1632	.291 (7.4)

CAT. NO. 120 & 112



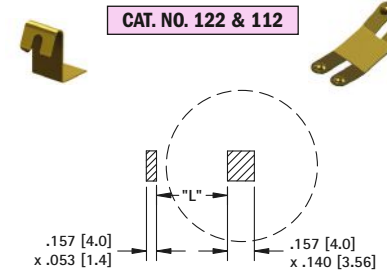
CAT. NO.	BATTERY REFERENCE	L
120 & 112	CR2012, CR2016, CR2020	.336 (8.5)
	CR2320	.395 (10.0)
	CR2412	.414 (10.5)

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)

SMT BATTERY CONTACT & PAD LAYOUTS

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

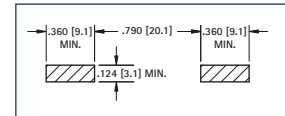


50
550

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

Refer to page 13 for Part Details

Pad Layout

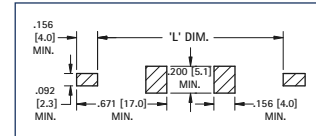


55
555

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

Refer to page 13 for Part Details

Pad Layout

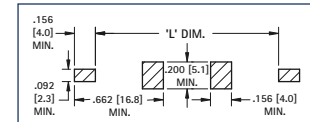


53
553

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

Refer to page 13 for Part Details

Pad Layout



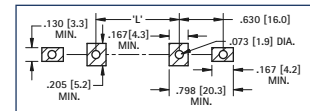
254
246

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

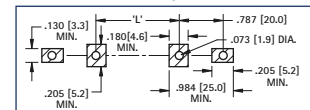
CAT. NO.	"L" DIMENSION		
	For "20600" 0.79 (20.0) × 2.36 (60.0)	For "20700" 0.79 (20.0) × 2.76 (70.0)	For "21700" 0.83 (21.0) × 2.76 (70.0)
246	1.10 (28.0)	1.50 (38.0)	1.49 (38.0)

Refer to page 13 for Part Details

Pad Layout



Pad Layout



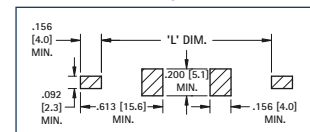
56
556
57
557

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

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

Refer to page 13 for Part Details

Pad Layout



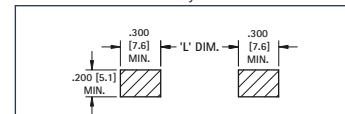
5231
5331
5230
5330

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

Refer to page 14 for Part Details

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

Pad Layout



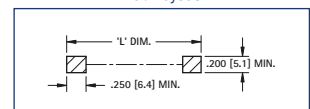
"L" dimensions reflect initial insertion deflection.



1016-1
1020-1

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

Pad Layout

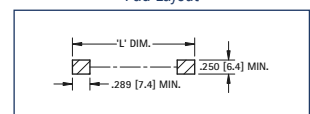


1076-2
1088-2

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

Refer to page 15 for Part Details

Pad Layout

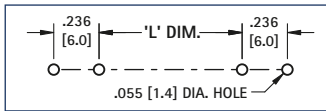


THM BATTERY CLIP & CONTACT LAYOUTS AND MOUNTING DETAILS

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

Refer to page 13 for Part Details

Mounting Detail

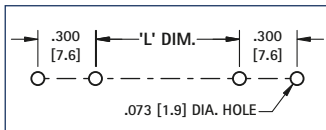


CAT. NO.	"L" DIMENSION	
	For "AAAA"	For "A27"
51	0.33 (8.4) × 1.67 (42.4)	0.300 (7.6) × 1.10 (27.9)



Refer to page 13 for Part Details

Mounting Detail



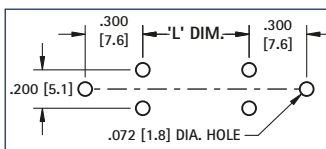
CAT. NO.	"L" DIMENSION		
	For "AAA"	For "N"	For "A23"
82	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)	0.40 (10.2) × 1.10 (27.9)



CAT. NO.	"L" DIMENSION		
	For "AA"	For "2/3 A"	For "CR2"
52	0.56 (14.2) × 1.98 (50.3)	0.67 (17.0) × 1.36 (34.5)	0.60 (15.2) × 1.05 (26.7)
92	1.32 (33.5)	0.67 (17.0)	0.39 (9.9)
2915	1.32 (33.5)	—	0.39 (9.9)

Refer to page 13 for Part Details

Mounting Detail

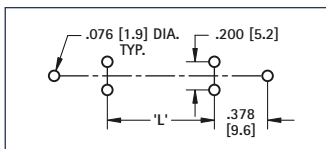


CAT. NO.	"L" DIMENSION			
	For "18650"	For "18350"	For "2/3 A"	For "17500"
54	0.71 (18.4) × 2.56 (65.0)	0.73 (18.5) × 1.38 (35.0)	0.67 (17.0) × 1.36 (34.5)	0.67 (17.0) × 1.97 (50.0)



Refer to page 13 for Part Details

Mounting Detail

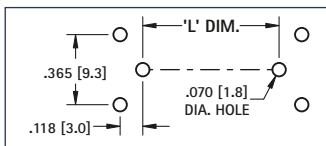


CAT. NO.	"L" DIMENSION		
	For "20600 A"	For "20700"	For "21700"
247	0.79 (20.0) × 2.36 (60.0)	0.79 (20.0) × 2.76 (70.0)	0.83 (21.0) × 2.76 (70.0)



Refer to page 14 for Part Details

Mounting Detail

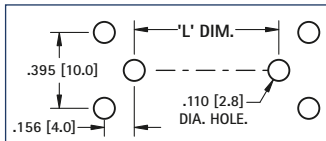


CAT. NO.	"L" DIMENSION		
	For "2/3 A"	For "CR2"	For "AA"
595 with 628	0.67 (17.0) × 1.36 (34.5)	0.60 (15.2) × 1.05 (26.7)	0.56 (14.2) × 1.98 (50.3)



Refer to page 14 for Part Details

Mounting Detail

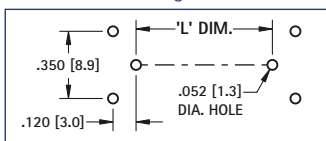


CAT. NO.	"L" DIMENSION		
	For "AAA"	For "N"	For "A23"
637 with 629	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)	0.40 (10.2) × 1.10 (27.9)



Refer to page 14 for Part Details

Mounting Detail



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



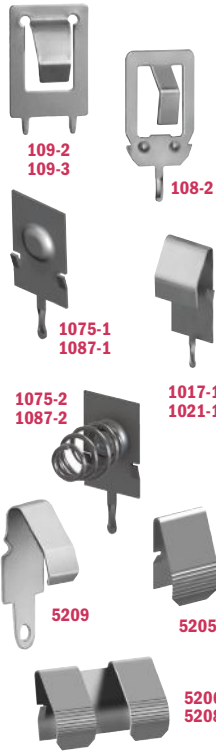
CAT. NO.	"L" DIMENSION		
	For "AAA"	For "N"	For "A23"
597 with 591	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)	0.40 (10.2) × 1.10 (27.9)
591 with 591	1.83 (46.5)	1.22 (31.0)	1.18 (30.0)

"L" dimensions reflect initial insertion deflection.

BATTERY CONTACT LAYOUTS AND MOUNTING DETAILS

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

Refer to page 15 & 21 for Part Details



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

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

CAT. NO.	FIG. NO.	L DIMENSION				
		For "AAAA"	For "A27"	For "A23"	For "AAA"	For "N"
1021-1 1075-1 1075-2	3	0.33 (8.4) × 1.67 (42.4)	0.30 (7.6) × 1.10 (27.9)	0.40 (10.2) × 1.10 (27.9)	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)
1075-2 1087-2	3	1.88 (47.8)	1.31 (33.3)	1.31 (33.3)	1.96 (49.8)	1.35 (34.3)

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

CAT. NO.	FIG. NO.	L DIMENSION								
		For "AA"	For "CR2"	For "2/3 A"	For "17500"*	For "18350"*	For "18650"*	For "C"	For "26650"	For "D"
		0.56 (14.2) × 1.98 (50.3)	0.60 (15.2) × 1.05 (26.7)	0.67 (17.0) × 1.24 (31.5)	0.67 (17.0) × 1.97 (50.0)	0.71 (18.0) × 1.38 (35.0)	0.71 (18.0) × 2.56 (65.0)	0.99 (25.0) × 1.97 (50.0)	1.02 (26.0) × 2.56 (65.0)	1.30 (33.0) × 2.24 (56.9)
1107-1	3	2.19 (55.6)	1.26 (32.0)	1.52 (38.6)	2.18 (55.4)	1.59 (40.4)	2.77 (70.4)	2.18 (55.4)	2.77 (70.4)	2.45 (62.2)
109-2	3	2.22 (56.4)	1.29 (32.8)	1.55 (39.4)	2.21 (56.1)	1.62 (41.1)	2.80 (71.1)	N/A	N/A	N/A
109-3	3	N/A	N/A	N/A	N/A	N/A	N/A	2.21 (56.1)	1.62 (41.1)	2.48 (63.0)

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

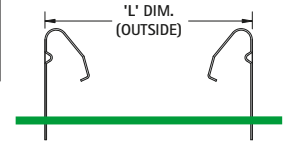


Fig. 3 PC Mount
L dimensions reflect initial insertion deflection.



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

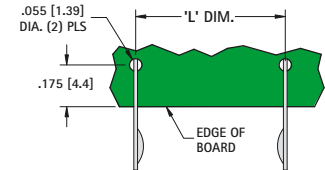
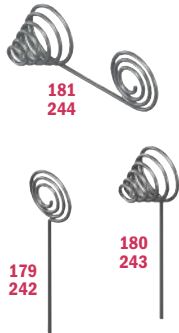


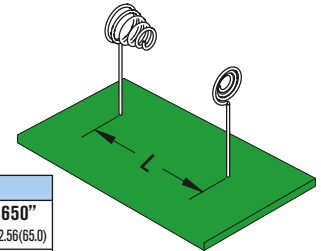
Fig. 5 Off-Board Mount

Refer to page 16 for Part Details

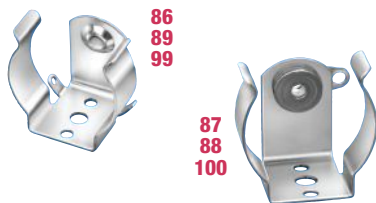


CAT. NO.	L DIMENSION				
	For "AAAA"	For "A27"	For "A23"	For "AAA"	For "N"
181 244	0.33 (8.4) × 1.67 (42.4)	0.30 (7.6) × 1.10 (27.9)	0.40 (10.2) × 1.10 (27.9)	0.41 (10.4) × 1.75 (44.5)	0.45 (11.4) × 1.14 (29.0)
179 180 181	1.88 (47.8)	1.27 (32.3)	1.23 (31.2)	1.23 (31.2)	1.80 (45.7)

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

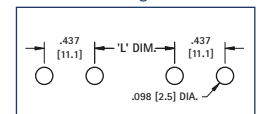


Refer to page 22 for Part Details

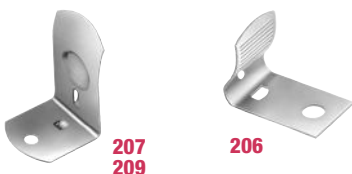


CAT. NO.	"L" DIMENSION		
	For "AA"	For "C"	For "D"
99	0.56 (14.2) × 1.98 (50.3)	1.00 (25.4) × 1.97 (50.0)	1.30 (33.0) × 2.42 (61.5)
86	0.91 (23.0)	—	—
87	—	0.91 (23.0)	—
88	—	—	1.19 (30.2)
89	—	—	—

Mounting Detail

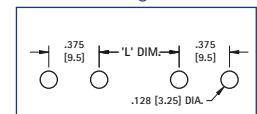


Refer to page 22 for Part Details



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

Mounting Detail

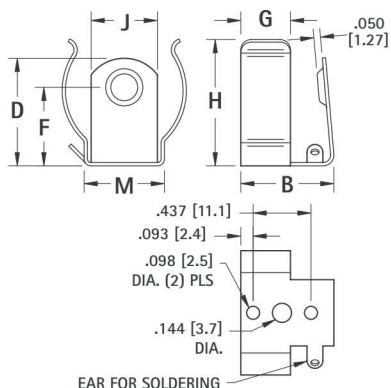


RUGGED STEEL BATTERY CLIPS

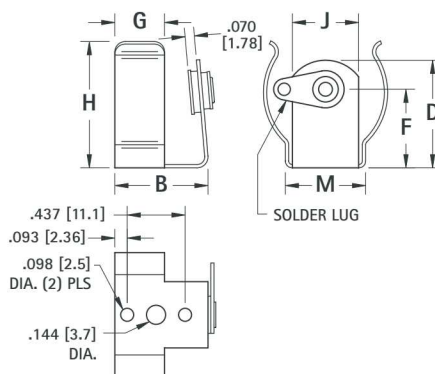
For "AA" • "C" • "D"

SPECIFICATIONS Clips: Spring Steel, Nickel Plate **Contact Eyelets:** Brass, Nickel Plate
Insulating Washers: Moisture Proof, Resin Impregnated Fibre **Solder Lugs:** Brass, Tin Plate

- Available with insulated or non-insulated contact. Positive contact grips battery securely.



DWG. 1
Non-Insulated Contact

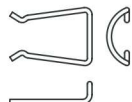


DWG. 2
Insulated Contact

CAT. NO.	DWG. NO.	B	C	D	F	G	H	J	M	STEEL THICKNESS	BATTERY DIAMETER MIN. - MAX.	CELL SIZE
86	1	.703 (17.9)	.391 (9.9)	.812 (20.6)	.593 (15.1)	.375 (9.5)	.937 (23.8)	.500 (12.7)	.605 (15.4)	.020 (.51)	.875 to 1.125 (22.2 to 28.6)	"C"
87	2	.775 (19.7)	.463 (11.8)	1.075 (27.3)	.750 (19.1)	.437 (11.1)	1.187 (30.1)	.500 (12.7)	.609 (15.5)	.020 (.51)	1.187 to 1.350 (30.1 to 34.3)	"D"
88	2	.703 (17.9)	.391 (9.9)	.609 (15.5)	.375 (9.5)	.375 (9.5)	.609 (15.5)	.312 (7.9)	.353 (9.0)	.015 (.39)	.531 to .650 (13.5 to 16.5)	"AA"
89	1											
99	1											
100	2											

BATTERY RETAINER CLIPS

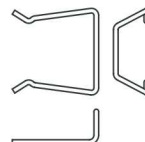
- Prevents battery from loosening in battery holder
- Retainer clip slips on the ears of the battery holder clip



Retainer for "AA" or cells with diameters of .532 (13.5) to .562 (14.3).
Used with Keystone Battery Clips
Cat. No. 91, 92, 95, 99, 100 and 2915.

MATERIAL: Stainless Steel

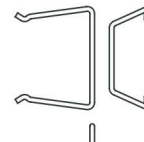
CAT. NO. 61



Retainer for "C" cells or similar size batteries to 1.032 (26.2) diameter.
Used with Keystone Battery Clips
Cat. No. 86, 87, 93 and 222.

MATERIAL: Spring Steel, Nickel Plate

CAT. NO. 62



Retainer for "D" cells or similar size batteries to 1.343 (34.1) diameter. Used with Keystone Battery Clips Cat. No. 88, 89 and 94.

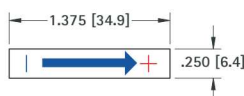
MATERIAL: Spring Steel, Nickel Plate

CAT. NO. 63

POLARITY INDICATING LABEL

- No Gluing or Wetting Needed
- Pressure Sensitive Adhesive Back
- Economical
- Adheres To All Surfaces

Recommended where proper polarity of battery insertion or circuit polarity is to be shown. Labels are two color, (+) positive side red; arrow, (-) negative side blue.

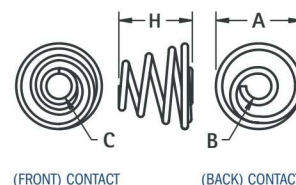


CAT. NO. 58

BATTERY SPRING CONTACTS

For "A" • "AA" • "C" • "D"

Easy to assemble with eyelets or rivets. Refer to page 124.



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	"A" • "AA"
211-D	.850 (21.6)	.650 (16.5)	.162 (4.1)	.300 (7.6)	.040 (1.0) Dia. Spring Steel, Nickel Plate	"C" • "D"

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.



CAT. NO. 59 (RED)

CAT. NO. 60 (BLACK)

MATERIAL: Molded Polyethylene

KEYSTONE®

RoHS COMPLIANT ~ ISO 9001 CERTIFIED

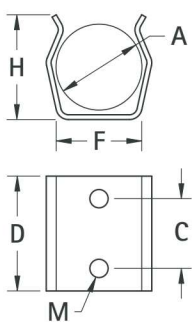
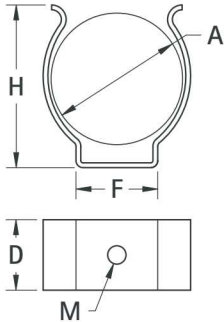
www.keyelco.com

31-07 20th Road - Astoria, NY 11105-2017

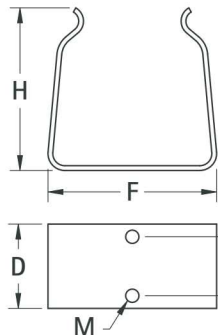
Tel (718) 956-8900 • Fax (718) 956-9040
(800) 221-5510 • kec@keyelco.com

ALUMINUM & STEEL CLIPS

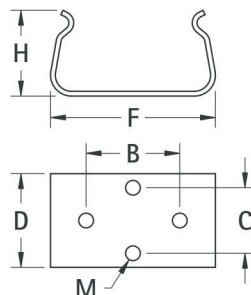
Precision made spring clips are available in a wide range of sizes. These clips will hold round, square and rectangular batteries or components with similar dimensions. Clips are manufactured from Aluminum or Spring Steel.

**DWG. 1**

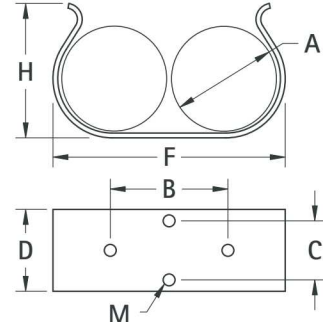
DWG. 2



DWG. 3



DWG. 4



DWG. 5

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

CAT. NO.	DWG. NO.	A MIN MAX DIA. OR SIZE	FOR CELLS	B	C	D	F	H	M MTG HOLE(S)	MATERIAL THICKNESS	TYPE
67	3	.375 x .125 (9.5 x 3.2)	CRYSTAL	—	.187 (4.7)	.350 (8.9)	.410 (10.4)	.210 (5.3)	.067 (1.7)	.016 (.41)	Steel
69	4	.562 (14.3)	AA (2)	.625 (15.9)	.437 (11.1)	.625 (15.9)	1.125 (28.6)	.562 (14.3)	.098 (2.5)	.015 (.39)	Steel
70	4	.656 (16.7)	RM12 (2)	.625 (15.9)	.437 (11.1)	.625 (15.9)	1.343 (34.1)	.740 (18.8)	.098 (2.5)	.020 (.51)	Alum.
71	3	.593 x 1.031 (15.1 x 26.2)	9 VOLT	—	.437 (11.1)	.625 (15.9)	1.031 (26.2)	.687 (17.4)	.098 (2.5)	.015 (.39)	Steel
78	2	1.187 to 1.350 (30.1 to 34.3)	D	—	—	.500 (12.7)	.562 (14.3)	1.218 (30.9)	.136 (3.5)	.020 (.51)	Steel
79	4	.650 x 1.280 (16.5 x 32.5)	9 VOLT	.625 (15.9)	.437 (11.1)	.625 (15.9)	1.050 (26.7)	.765 (19.4)	.098 (2.5)	.015 (.39)	Steel
80	3	.650 x 1.280 (16.5 x 32.5)	9 VOLT	—	.437 (11.1)	.625 (15.9)	.675 (17.1)	1.187 (30.1)	.098 (2.5)	.015 (.39)	Steel
90	1	.375 to .468 (9.5 to 11.9)	AAA	—	.437 (11.1)	.625 (15.9)	.312 (7.9)	.453 (11.5)	.098 (2.5)	.020 (.51)	Alum.
91	1	.531 to .656 (13.5 to 16.7)	AA	—	.437 (11.1)	.625 (15.9)	.406 (10.3)	.562 (14.3)	.098 (2.5)	.020 (.51)	Alum.
93	1	.875 to 1.125 (22.2 to 28.6)	C	—	.437 (11.1)	.625 (15.9)	.937 (23.8)	.921 (23.4)	.098 (2.5)	.020 (.51)	Alum.
94	3	1.187 to 1.375 (30.1 to 34.9)	D	—	.437 (11.1)	.625 (15.9)	1.250 (31.8)	1.218 (30.9)	.098 (2.5)	.032 (.81)	Alum.
95	3	.625 x 1.000 (15.9 x 25.4)	9 VOLT	—	.437 (11.1)	.625 (15.9)	.656 (16.7)	1.125 (28.6)	.098 (2.5)	.020 (.51)	Alum.
97	5	1.031 (26.2)	C (2)	—	.437 (11.1)	.625 (15.9)	2.062 (52.4)	1.125 (28.6)	.098 (2.5)	.020 (.51)	Alum.
98	5	1.312 (33.3)	D (2)	1.125 (28.6)	.437 (11.1)	1.000 (25.4)	2.656 (67.5)	1.437 (36.5)	.098 (2.5)	.032 (.81)	Alum.
217	2	1.375 to 1.500 (34.9 to 38.1)	NiCd	—	—	.812 (20.6)	1.218 (30.9)	1.430 (36.3)	.157 (4.0)	.025 (.64)	Steel
218	2	1.437 to 1.687 (36.5 to 42.8)	NiCd	—	—	.812 (20.6)	1.375 (34.9)	1.531 (38.9)	.157 (4.0)	.025 (.64)	Steel
219	2	2.000 to 2.500 (50.8 to 63.5)	NiCd	—	—	.812 (20.6)	1.687 (42.8)	2.156 (54.8)	.157 (4.0)	.025 (.64)	Steel
220	2	.187 to .203 (4.7 to 5.2)	5mm	—	—	.315 (8.0)	.158 (4.0)	.280 (7.1)	.093 (2.4)	.010 (.25)	Steel
221	2	.859 to .890 (21.8 to 22.6)	.875 (22.2)	—	—	.468 (11.9)	.828 (21.0)	.906 (23.0)	.157 (4.0)	.020 (.51)	Steel
222	1	.875 to 1.125 (22.2 to 28.6)	C	—	.437 (11.1)	.625 (15.9)	.937 (23.8)	.921 (23.4)	.098 (2.5)	.020 (.51)	Steel

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