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1

Batteries, Chargers & Holders



Alkaline Batteries

Alkaline Manganese - Duracell Plus
Mercury Free

DURACELL



- High performance alkaline batteries with a corrosion free construction and a long shelf life
- New advanced formula offers long lasting power for your favourite devices
- Large multi-pack quantities for increased value

Note: Supplied and priced in blister packs

Voltage	Can Style	Max. L	Dimensions Dia	Weight (g)		Order Code
				Approx.		
1.5	AAA	44.5	10.5	11		387-6536
1.5	AA	50.5	14.5	23.8		387-6548
1.5	C	50	26.2	69		387-6550
1.5	D	61.5	34.2	139		387-6561
9	PP3	48.5 x 26.5 x 17.5mm		45		387-6573

233514

Can Style	Pack Qty.	Order Code	Price Per Pack	
			1+	3+
AAA	8	387-6536		
AA	8	387-6548		
C	4	387-6550		
D	4	387-6561		
PP3	2	387-6573		

Alkaline Manganese - Ultra M3
For Hi-Tech Power Hungry Appliances

DURACELL



- Ultra M3 is the best Duracell battery for high drain devices
- Last up to 50% longer than standard alkaline batteries in high current drain applications
- Long shelf life
- Corrosion free construction
- Powercheck indicator shows how much power is left in the battery
- Available in standard card packs or multipacks

Voltage	Can Style	Max. L	Dimensions Dia	Weight (g)		Mfrs. List No.	Order Code
				Approx.			
1.5	AAAA	42.5	8.3	7		ULTRA AAAA 2PK	100-3456
1.5	AAA	44.5	10.5	11		M3 AAA 4PK	378-5749
1.5	AAA	44.5	10.5	11		M3 AAA 8PK	495-1475
1.5	AA	50.5	14.5	24		M3 AA 4PK	378-5750
1.5	AA	50.5	14.5	24		M3 AA 12PK	495-1487
1.5	C	50	26.2	65		M3 C 2PK	378-5762
1.5	C	50	26.2	65		M3 C 6PK	495-1499
1.5	D	61.5	34.19	138		M3 D 2PK	378-5774
1.5	D	61.5	34.2	138		M3 D 6PK	495-1505
9	PP3	48.5 x 26.5 x 17.5		46		M3 PP3	378-5786
9	PP3	48.5 x 26.5 x 17.5		46		M3 PP3 10PK	495-1517

233512

Can Style	Pack Qty.	Order Code	Price Per Pack			
			1+	3+	12+	25+
Card Packs						
AAAA	NEW 2	100-3456				
AAA	4	378-5749				
AA	4	378-5750				
C	2	378-5762				
D	2	378-5774				
PP3	1	378-5786				
Multi Packs						
AAA	8	495-1475				
AA	12	495-1487				
C	6	495-1499				
D	6	495-1505				
PP3	10	495-1517				

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www.farnell-newarkinson.com.sg

The very latest NEW products

Alkaline Manganese-'PROCELL'



- Industrial high performance alkaline batteries
- Corrosion free construction
- Long shelf life
- Special branding to reduce pilferage

Voltage	Can Style	Capacity mAh	Max. Dimensions			Weight (g) Approx.	Mfrs. List No.	Order Code
			L	W	D			
1.5	AAA	1175	44.5	—	10.5	11	MN2400	249-816
1.5	AA	2700	50.5	—	14.5	22	MN1500	249-828
1.5	C	7750	50	—	26.2	67	MN1400	249-830
1.5	D	18000	61.5	—	34.2	141	MN1300	249-841
9	PP3	550	48.5	26.5	17.5	45	MN1604	249-853

Note: Supplied and priced in packs

230455

10 Per Pack Can Style	Mfrs. List No.	Order Code	Price Per Pack				
			1+	5+	10+	25+	+
AAA	MN2400	249-816	21.29	18.20	16.09	13.16	--
AA	MN1500	249-828	21.45	18.20	16.09	13.16	--
C	MN1400	249-830	36.89	32.18	28.28	24.38	--
D	MN1300	249-841	40.30	35.75	33.48	27.63	--
PP3	MN1604	249-853	76.70	67.60	60.45	50.38	--

Alkaline Manganese-Specialised

DURACELL



A range of specialised alkaline manganese batteries offering a long life and corrosion free construction together with high reliability.

Voltage	Can Style	Capacity mAh	Max. Dimensions		Weight (g) Approx.	Small Pack Qty	Mfrs. List No.	Order Code
			L	Dia				
1.5	—	100	5.4	11.6	2	10	LR44	300-329
1.5	—	105	5.4	11.6	2	10	LR44 2PK	495-1451
1.5	N	825	30.2	12	8	10	MN9100	300-251
4.5	—	5400	67	67 x 62 x 20	151	10	MN1203	300-342
6	J	500	48.3	48.3 x 35.6 x 9.2	34	10	7K67	300-366
12	—	33	28	10	8	10	MN21	300-378

- For convenience of handling we recommend small pack multiples, but we will supply to any quantity required

230457

Mfrs. List No.	Order Code	Price Each			
		1+	10+	100+	1K+
LR44	300-329	1.91	--	--	--
LR44 2PK	NEW 495-1451	5.60	5.31	4.92	4.46
MN9100	300-251	2.58	2.21	2.08	1.92
MN1203	300-342	8.68	7.96	7.44	6.89
7K67	300-366	8.29	6.89	6.44	5.98
MN21	300-378	4.00	3.58	3.35	3.19

Lithium Batteries

1.5 Volt Lithium Iron Disulphide



Ultimate Lithium



L=50.5, Dia=14.3

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

- Up to 10 year shelf life
 - Wide operating temperature range
 - No significant loss in capacity at low temperatures
 - Higher capacity than alkaline versions in certain applications
 - Weighs 30% less than alkaline equivalent
 - Thermal overload protected
- Ideal for use in high drain devices, such as digital cameras, MP3 players and portable TVs.

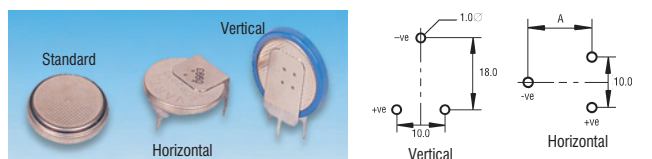
A unique battery offering the advantages of lithium technology but with a 1.5 volt output.

Voltage (V)	Can Style	Typical Capacity (mAh)	Weight (g)
1.5	AA	3000	15
1.5	AAA	1250	8

386918

Can Style	Pack Qty	Order Code	Price Each				
			1+	12+	24+	48+	+
AA	1	114-8046	9.93	8.92	8.76	7.84	--
AA	2	880-4249	18.10	17.38	16.73	16.08	--
AA	4	880-4257	31.57	30.47	29.46	28.48	--
AAA	2	NEW 100-0099	16.14	15.56	15.04	14.52	--
AAA	4	NEW 100-2811	28.58	27.37	26.33	25.39	--

Lithium Manganese Coin Cells DURACELL VARTA Microbattery



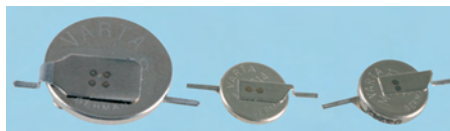
- Non-rechargeable lithium ion cells
- Applications include remote control keyfobs, calculators, memory back-up and real time clocks
- Laser-welded PCB mount versions available

Voltage (V)	Capacity mAh	Dimensions L Dia. A	Weight (g) Approx.	Mfrs. List No.	Order Code
Standard					
3	25	1.6 12 —	0.7	CR1216 (V)	863-877
3	35	2 12.5 —	0.8	CR1220 (V)	863-889
3	55	1.6 16 —	1.2	CR1616 (V)	863-890
3	60	2 16 —	1.2	CR1620 (V)	300-410
3	90	1.6 20 —	1.8	CR2016 (V)	300-421
3	170	2.5 20 —	2.5	CR2025 (V)	300-433
3	230	3.2 20 —	3	CR2032 (V)	300-445
3	280	3 24.5 —	4	CR2430 (V)	300-457
3	560	5 24.5 —	6.2	CR2450 (D)	863-907
PCB Mounting, Horizontal					
3	90	3.2 20 —	3	CR2016PCB (V)	863-6230
3	170	2.5 20 —	4	CR2025PCB (V)	863-6257
3	230	6.5 20 —	3	CR2032PCB (V)	249-877
3	280	6.5 24.5 —	5	CR2430PCB (V)	425-345
PCB Mounting, Vertical					
3	90	2.6 20.5 —	3	CR2016SLF (V)	863-6249
3	170	3.5 20.5 —	4	CR2025SLF (V)	863-6265
3	230	4.2 21.5 4.2	3	CR2032SLF (V)	249-889
3	280	4 25.8 4.0	5	CR2430SLF (V)	249-890

Manufacturer; D = Duracell, V = Varta *Overall height above PCB when mounted

Mfr List No.	Order Code	1+	10+	100+	250+
Standard					
CR1216 (V)	863-877	3.64	3.28	2.63	2.47
CR1220 (V)	863-889	4.48	4.23	3.71	3.02
CR1616 (V)	863-890	4.49	4.23	3.71	3.02
CR1620 (V)	300-410	4.49	4.23	3.71	3.02
CR2016 (V)	300-421	2.74	2.46	2.34	2.22
CR2025 (V)	300-433	4.54	4.42	3.87	3.25
CR2032 (V)	300-445	4.91	4.78	4.03	3.51
CR2430 (V)	300-457	5.17	4.84	4.39	3.71
CR2450 (D)	863-907	7.61	7.41	6.63	5.20
PCB Mounting, Horizontal					
CR2016PCB (V)	NEW 863-6230	6.22	5.50	4.95	4.39
CR2025PCB (V)	NEW 863-6257	6.22	5.50	4.95	4.39
CR2032PCB (V)	249-877	5.87	5.30	4.75	4.19
CR2430PCB (V)	425-345	5.94	5.53	4.68	4.29
PCB Mounting, Vertical					
CR2016SLF (V)	NEW 863-6249	6.22	5.50	4.95	4.39
CR2025SLF (V)	NEW 863-6265	6.22	5.50	4.95	4.39
CR2032SLF (V)	249-889	6.10	5.49	4.94	4.36
CR2430SLF (V)	249-890	6.13	5.72	4.84	4.62

Rechargeable Lithium Coin Cells



- Compact size and lightweight Li-Ion cells
- Wide operating temperature -20° to +60°C
- Low self discharge <5% per annum
- Capable of being flow soldered
- Applications include memory back-up, real time clock, cameras, PDAs, tablet PCs and communication equipment

NEW

Nominal Voltage (V)	Typical Capacity (at 20°C)(mAh)	Dimensions LxDia (mm)	Weight (g)	Mfrs. List No.	Order Code
3	16	2x12.5	1.0	ML1220SM	108-3712
3	1.5	1.4x6.8	0.18	MC614SM	108-3713
3	3	2.15x6.8	0.24	MC621SM	108-3714

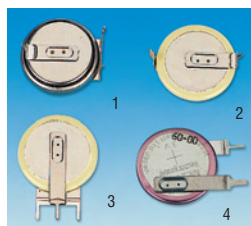
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Mfrs. List No.	Order Code	1+	10+	25+	50+	+
ML1220SM	108-3712	7.84	7.13	6.54	6.05	--
MC614SM	108-3713	7.36	6.58	5.96	5.40	--
MC621SM	108-3714	7.36	6.58	5.96	5.40	--

Lithium Battery



Rechargeable Lithium Coin Cells



- Nominal 3 volts
- Temperature range -20°C to +60°C
- Standard charge current is 0.2mA, cut off voltage is 3.25V
- CMOS RAM back up

A range of rechargeable lithium manganese dioxide batteries with various pin configurations. Suitable for all types of back up applications because of their low internal resistance.

Voltage	Capacity mAh	Dimensions (H Dia.)	Charge/Discharge Cycles	Weight (g) Approx.	Cell Type
3V	25	1.6 20	1500 cycles @ 2.5mA	1.8	2016
3V	65	3.2 20	1000 cycles @ 6.5mA	3	2032

- 1 T25 3 Pin Horiz. mount Pins on outer dia. All 3mm
- 2 T6 2 Pin Horiz. mount Pins on outer dia. 1.8(+), 0.75(-)
- 3 T26 3 Pin Vert. mount one centre Pin other Pin 4.92 from dia. All 0.75mm
- 4 T17 2 Pin Vert. mount Pins 4mm on outer dia. 1.8(+), 0.75(-)

203234

Pict. Ref.	Cell Type	Order Code	1+	10+	25+	50+	+
1	2016	303-1986	8.12	7.80	7.61	6.60	--
2	2016	303-1962	8.12	7.80	7.61	6.60	--
4	2016	303-1974	8.12	7.80	7.61	6.60	--
1	2032	303-2000	8.12	7.80	7.61	6.60	--
3	2032	303-2012	8.12	7.80	7.61	6.60	--
4	2032	303-1998	8.12	7.80	7.61	6.60	--

Lithium Manganese



Lithium manganese dioxide batteries offer practically double the cell voltage of carbon-zinc, mercury or silver oxide batteries. Despite their small size, their energy density is very high making them ideal for miniature electronic equipment.

Voltage (V)	Capacity mAh	Dimensions L Dia.	Weight (g) Approx.	Pack Qty.	Mfrs. List No.	Order Code
3	160	10.8 11.6	3	1	DL1/3N	300-469
3	1500	34 16.9	16	1	DL123AB1 ULTRA M3	300-470
3	1500	34 16.9	16	2	DL123AB1 ULTRA M3 2pk	495-1530
6	160	25.2 13	9	1	PX28L	300-482

230464

Mfrs. List No.	Pack Qty	Order Code	1+	10+	100+	1K+
DL1/3N	1	300-469	10.86	9.75	8.78	8.26
DL123AB1 ULTRAM3	1	300-470	17.78	15.99	10.69	9.98
DL123AB1 ULTRA M3	2	NEW 495-1530	32.00	31.64	28.81	26.33
PX28L	1	300-482	21.39	19.24	17.23	16.32



3/6V Lithium Manganese Ultra M3

DURACELL



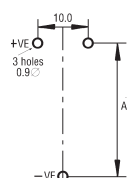
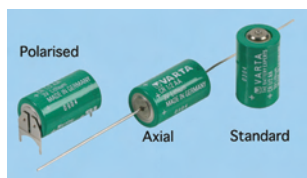
- Non-rechargeable batteries
- Suitable for high drain photographic equipment, instruments and memory back-up
- High performance Ultra M3 formula
- 10 year shelf life
- CR-V3 battery provides the most powerful solution for today's digital cameras-interchangeable with 'AA' type batteries

Operating temperature		-30°C to + 60°C					
Voltage (V)	Capacity mAh	H	W	D	Weight (g) Approx.	Mfrs. List No.	Order Code
3	950	27	—	15.6	11	DL223A	463-334
3	950	27	—	15.6	11	DL223A	463-334
6	1500	35.8	34.8	19.3	45	DL245	207-512
6	1500	45	34	17	31	DL245	207-512
3	3000	52	28.4	14.4	38	DL245	207-512

Mfrs. List No.	Pack Qty.	Order Code	1+	10+	100+
DL223A	1	463-334	27.79	23.50	21.78
DL245	1	207-512	32.18	28.44	25.87
DL245	1	433-3974	27.79	23.50	21.78

3 Volt Lithium Manganese

VARTA Microbattery mobility for you



PCB Drilling pattern (polarised)

See below for additional dimensions
 Note: Polarisation is different to the 3.7 Volt Lithium Manganese

- Non-rechargeable 3V lithium manganese
- Wide operating temperature
- High energy density
- Applications include memory back-up (RAM), real time clocks, alarm systems, sensors and water, gas and electricity meters
- Long storage and operating time in excess of 10 years

Operating temperature		-30°C to +75°C		Axial lead length		45	
Voltage	Can Style	Capacity mAh	Max. Current Drain mA	Dimensions A/L Dia.	Weight (g) Approx.	Mfrs. List No.	Order Code
Axial	3 1/2AA	950	10	25.1 14.75	11.5	CR1/2AACD	463-292
	3 AA	2000	20	50.5 14.75	21.5	CRAACD	463-309
	3 2/3AA	1350	15	33.5 14.8	14.8	CR2/3AACD	304-4853
Polarised	3 1/2AA	950	10	25.1 14.75	11.5	CR1/2AASLF	463-310
	3 AA	2000	20	50.7 14.75	21.5	CRAASLF	463-322
	3 2/3AA	1350	15	33.5 14.8	14.8	CR2/3AASLF	304-4841
Standard	3 1/2AA	950	10	25.1 14.75	11.5	CR1/2AA	863-6206
	3 AA	2000	20	50.5 14.75	21.5	CRAA	863-6192
	3 2/3AA	1350	15	33.5 14.75	15	CR2/3AA	863-6214
	3 2/3AH	1350	1500	33.9 17	16	CR2/3AH	508-8276

Note: These batteries are designed to be PCB mounted and must not be used to replace standard zinc carbon or alkaline manganese batteries due to the terminal voltage. High power CR2/3AH is supplied as a standard cell only.

Mfrs. Can Style	Order Code	1+	20+	100+	
Axial	1/2AA	463-292	11.60	11.15	9.98
	AA	463-309	16.41	15.73	14.37
	2/3AA	304-4853	14.30	13.20	11.90
Polarised	1/2AA	463-310	11.60	10.82	9.98
	AA	463-322	16.41	15.28	14.11
	2/3AA	304-4841	14.30	13.20	11.90
Standard	1/2AA	NEW 863-6206	9.63	8.98	8.50
	AA	NEW 863-6192	14.71	13.87	13.18
	2/3AA	NEW 863-6214	12.76	11.98	11.39
	2/3AH	508-8276	10.51	9.90	9.31

3.6V Volt Lithium Thionyl Chloride



Memory Back-Up



- Lithium wafer cells
- Long shelf life in excess of 10 years
- Low self discharge (1% or less per year)
- Applications include circuit board mounting, memory back-up, real time clocks and similar applications where PCB height is critical

Operating temperature		-55°C to +75°C			
Voltage	Can Style	Capacity Ah	Dimensions H Dia.	Weight (g) Approx.	Order Code
3.6	BEL	0.4	7.0 * 22.8	5	869-8368
3.6	1/6D	1.7	9.7 * 33	22	604-872
3.6	1/10D	1	6.2 * 33	17	604-884

* Height excluding pins 230473

Mfrs. List No.	Order Code	1+	25+	100+
SL340/P	869-8368	20.54	20.12	19.73
SL386/P	604-872	21.22	20.90	20.25
SL389/P	604-884	22.28	21.94	21.26

3.6 Volt Lithium Thionyl Chloride



Tagged/Untagged Standard Size Cells



- Very high capacity
- Non-rechargeable cells in standard can sizes
- Very high energy density
- High terminal voltage
- Level discharge characteristics
- Wide operating temperature
- Up to 10 year shelf life
- Hermetically sealed

Recognised under the component programme of the Underwriters Laboratory Inc. (UL) Note: Due to the high terminal voltage these cells must not be used to replace standard cells of similar can styles. Operating temperatures -55°C to +85°C Note: UL Certified, file number MH12827. Do no recharge. Incorporate a blocking diode and current limiting resistor in circuits to prevent charging.

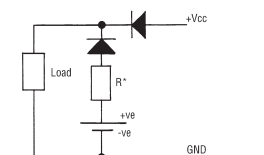
Voltage	Can Style	Capacity Ah	Max. Current Drain mA	Dimensions A	Weight (g) Approx.	Mfrs. List No.	Order Code
V3.6	1/2AA	1	6	25.2 14.7	9	SL350S	206-520
V3.6	AA	2.3	20	50.5 14.7	18	SL360S	206-532
V3.6	C	8.5	100	49.8 26.2	50	SL2770/S	521-498
V3.6	C	8.5	100	50 26.2	50	SL2770/T	869-8392
V3.6	D	19.0	200	61.3 32.9	92	SL2780/S	521-504
V3.6	D	8.5	200	61.5 32.9	92	SL2780/T	869-8406

Can Style	Order Code	1+	10+	20+	100+	
1/2AA	SL350S	206-520	14.09	13.78	13.39	12.35
AA	SL360S	206-532	14.91	14.63	14.40	13.29
C	SL2770/S	521-498	39.31	37.73	35.72	33.15
C	SL2770/T Tagged	869-8392	39.52	38.64	36.59	33.95
D	SL2780/S	521-504	49.33	47.32	44.82	41.54
D	SL2780/T Tagged	869-8406	49.54	48.47	45.93	42.58

3.6 Volt Lithium Thionyl Chloride



Polarised Axial

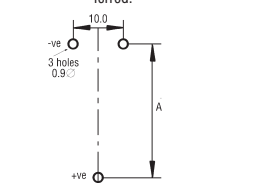


*current limiting resistor R is recommended in case of diode failure and should be mounted adjacent to the +ve terminal of the battery. This resistor may be replaced with another diode if preferred.

- New improved capacity
- Non-rechargeable cells
- Designed for low current drain applications
- Hermetically sealed
- 10 year shelf life

Recognised under the component programme of the Underwriters Laboratory Inc (UL).

Operating temperature	-55°C to +85°C
Capacity loss typically	1% per annum
Axial lead length	45mm



PCB Drilling pattern (polarised) See below for additional dimensions.



Voltage	Can Style	Capacity Ah	Max. Current Drain mA	Dimensions A/L Dia.	Weight (g) Approx.	Mfrs. List No.	Order Code
Axial							
3.6V	1/2AA	1	6	25.2 14.7	9	SL350P	206-416
3.6V	AA	2.3	20	50.5 14.7	18	SL360P	206-428
Polarised							
3.6V	1/2AA	1	6	25.2 14.7	9	SL350PT	206-430
3.6V	AA	2.3	20	50.5 14.7	18	SL360PT	206-441

Note: These batteries are designed to be PCB mounted and must not be used to replace standard zinc carbon or alkaline manganese batteries due to the terminal voltage.

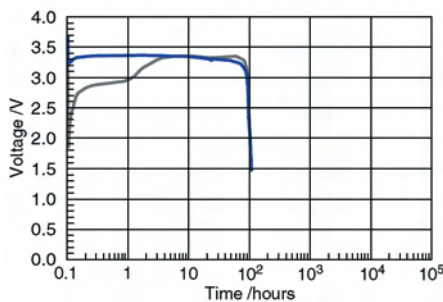
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	Can Style	Order Code	1+	25+	100+
Axial	1/2AA	206-416	13.59	13.29	12.64
	AA	206-428	15.12	14.85	14.14
Polarised	1/2AA	206-430	14.59	14.30	13.39
	AA	206-441	15.12	14.85	14.14

3.6V Lithium Thionyl Chloride
Enhanced Start Performance



NEW



- Major improvement of voltage delay (TMV) after storage
- Good pulse capability
- Suited for medium current levels
- Operates between -55°C and +85°C
- Untagged or polarized pins

Note: UL certified, file number MH12827.

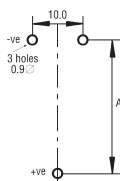
Do not recharge. Incorporates a blocking diode and current limiting resistor in circuits to prevent charging

Voltage	Can Style	Capacity (Ah)	Dimensions L Dia.	Weight (g) Approx.	Mfrs. List No.	Order Code
3.6V	1/2AA	0.95	25.2 14.7	9	SL750/S	869-8376
3.6V	1/2AA	0.95	25.2 14.7	9	SL750/PT	869-8384
3.6V	AA	2.1	50.5 14.7	18	SL760/S	553-8592
3.6V	AA	2.1	50.5 14.7	18	SL760/PT	890-8214

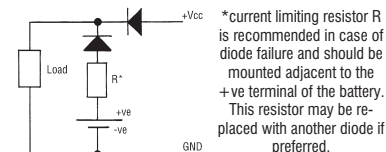
386501

Mfrs. List No.	Order Code	1+	25+	100+
SL750/S	869-8376	12.60	12.11	11.69
SL750/PT	869-8384	12.86	12.34	11.88
SL760/S	553-8592	13.51	--	--
SL760/PT	890-8214	16.18	15.53	14.94

High Temperature
3.6 Volt Lithium Thionyl Chloride



PCB Drilling pattern (polarised)
See below for additional dimensions.



*current limiting resistor R is recommended in case of diode failure and should be mounted adjacent to the +ve terminal of the battery. This resistor may be replaced with another diode if preferred.

- Non-rechargeable 3.6V lithium thionyl chloride cells
- Low self discharge (1% or less per year at +20°C)
- For use up to 130°C
- Excellent memory back-up characteristics
- Shelf life in excess of 10 years
- Hermetically sealed case

Operating temperature -55°C to +130°C

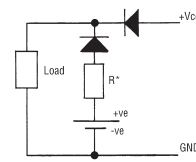
Voltage	Can Style	Capacity Ah	Max. Current Drain mA	Dimensions A/L Dia.	Weight (g) Approx.	Order Code
3.6V	2/3AA	1	10	33.5 14.7	12	864-110
3.6V	1/2AA	0.8	6	25.2 14.7	9	864-109
3.6V	AA	1.7	20	50.5 14.7	18	864-122

230469

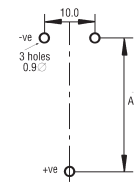
Mfrs. List No.	Order Code	1+	25+	100+
SL561/PT	864-110	31.06	29.80	28.34
SL550/PT	864-109	27.32	26.20	24.90
SL560/PT	864-122	31.93	30.65	29.09

3.6 Volt Lithium Thionyl Chloride

SAFT



*current limiting resistor R is recommended in case of diode failure and should be mounted adjacent to the +ve terminal of the battery. This resistor may be replaced with another diode if preferred.



PCB Drilling pattern (polarised)
See below for additional dimensions.

- PCB mounting non-rechargeable cells
- Very high energy density
- Designed for low to medium current drain applications including memory and real time clocks
- Very long shelf life due to low discharge rates

Recognised under the component programme of the Underwriters Laboratory Inc. (UL)

The cells are designed to be safe under normal operating and short circuit conditions. Charging and forced discharge must be avoided.

Supplied individually boxed with instructions for safe use and disposal. Details on series or parallel connections of more than one cell are available upon request.

Operating temperature -55°C to +70°C

Capacity loss typically 2% per annum

Voltage	Can Style	Capacity mAh	Max. Current Drain mA	Dimensions A/L Dia.	Weight (g) Approx.
1/2AA	3.6	1000	40	25.2 14.5	9
2/3A	3.6	1700	45	33 16.6	13
AA	3.6	2200	60	50.8 14.5	16

Note: These batteries are designed to be PCB mounted and must not be used to replace standard zinc carbon or alkaline manganese batteries due to the terminal voltage.

230470

	Can Style	Order Code	1+	25+	100+
Axial	1/2AA	773-992	14.44	12.90	11.60
	2/3A	774-017	15.75	14.07	12.64
	AA	774-005	16.41	--	--
Polarised	1/2AA	575-860	15.34	13.75	12.81
	2/3A	575-872	16.83	15.11	14.07
	AA	575-884	15.78	14.40	13.39

Lithium Thionyl Chloride
Non-Rechargeable 6V and 3.6V

SAFT



- Lithium Thionyl Chloride for use in real time clocks and RAM functions
- Designed for low current drain applications
- Batteries contain internal resistors
- Types 223 and 2AA contain anti-charge diode
- Recognised under the component programme of the underwriters Laboratories Inc. (UL)

	Voltage	Capacity	Dimensions (mm) L W H	Weight (g) Approx.	Mfrs. List No.	Order Code
T223A/H	6V	1.5	34 19.5 36	37	T223A/H	774-042
T223A/J	6V	1.5	34 19.5 36	40	T223A/J	774-054
T2AA/J	6V	1.9	38.5 20.5 58.8	59	T2AA/J	774-030
T1AA/C	3.6V	1.9	60 15 18	30	T1AA/C	774-029

Compliant
Non-compliant
Limited stock - RoHS replacement available
RoHS

Mfrs. List No.	Order Code	Price Each			
		1+	10+	100+	500+
V386	300-858	3.58	3.40	--	--
V389	300-834	3.98	3.58	3.09	2.89
V390	304-7969	3.45	3.09	2.67	2.34
V391	300-822	2.05	1.85	1.59	1.43
V392	300-792	3.15	2.86	2.44	2.21
V393	300-809	2.58	2.31	2.08	1.82
V394	300-810	2.65	2.37	2.05	1.85
V395	174-567	2.52	2.34	2.11	1.92
V396	304-7970	2.52	2.28	1.95	1.72
V397	249-919	1.86	1.63	1.46	1.27
V399	304-7982	3.02	2.73	2.34	2.05

Silver Oxide Button Cell Equivalents

230513

Order Code	IEC	VARTA	DURACELL	Energizer	Panasonic	RAY-O-VAC	RENATA
304-4865	SR1154SW	V303	D303/WS14	303	SR44SW	303/357	
304-4877	SR67	V315	D315	315	SR716SW	315	315
304-7908	SR62	V317	D317	317	SR516SW	317	317
174-531	SR64	V319	D319	319	SR527SW	319	319
174-520	SR65	V321	D321	321	SR616SW	321	321
304-7910	SR731SW	V329	D329	329	SR731SW	329	329
300-860	SR44	V357	D357/10L14	357	SR44W	303/357	357
300-780	SR58	V362	D36/10L180	362	SR721SW	361/362	362
300-779	SR60	V364	D364	364	SR621SW	364	364
304-7921	SR69	V370	D370	370	SR920SW	370/371	370
174-555	SR69	V371	D371	371	SR916SW	370/371	371
304-7933	SR68	V373	D373	373	SR626SW	373	373
174-543	SR66	V377	D377	377	SR521SW	376/377	377
249-907	SR63	V379	D379	379	SR1120SW	379	379
304-7945	SR55	V381	D381/10R130	381	SR41SW	381/391	381
304-7957	SR41	V384	D384/10L15	384	SR43W	384/392	384
300-858	SR43	V386	D386/10L124	386	SR1130W	301/386	386
300-834	SR54	V389	D389/10L122	389	SR1130SW	389/390	389
304-7969	SR54	V390	D390	390	SR1120W	389/390	390
300-822	SR55	V391	D389/10L130	391	SR41W	381/391	391
300-792	SR41	V392	D392/10L125	392	SR754W	384/392	392
300-809	SR48	V393	D393/10L123	393	SR936SW	309/393	393
300-810	SR45	V394	D394/10L126	394	SR927SW	394	394
174-567	SR57	V395	D395	395	SR726W	395/399	395
304-7970	SR59	V396	D396/10R102	396	SR726W	396/397	396
249-919	SR59	V397	D397	397	SR726SW	396/397	397
304-7982	SR57	V399	D399	399	SR927W	395/399	399

Rechargeable Nickel Cadmium Batteries

Single 1.2 Volt Cells

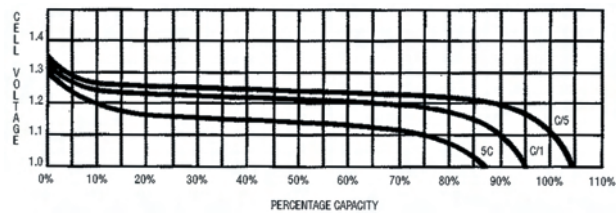
The main uses for sealed nickel cadmium batteries stem from the two outstanding characteristics, freedom from the maintenance and the ability to yield high, sustained, continuous power.

Cells can be charged and discharged hundreds or even thousands of times, depending on conditions of use.

Performance

It is convenient to express battery currents in terms of multiples and sub-multiples of the 'C' or one hour rate. Thus the C/5 rate would discharge the battery in 5hrs., and the 5C rate in 12 minutes.

Typical discharge curves are shown in the graph below and points to note are the flatness of the voltage curves and the slight decrease of capacity with higher currents. The currents can be continuous or intermittent, it makes little difference to the capacity delivered.



230514

Ni-Cad Consumer Batteries



- Ideal for all high drain devices
- Up to 1000 cycles
- Supplied in a discharged state, require charging before use
- Prolonged shelf life
- Supplied in blister packaging

NEW

Type	Nominal Voltage (V)	Nominal Capacity (mAh)	Dimensions		Order Code
			dia (mm)	height (mm)	
AAA	1.2	300	10.5	44.5	101-1460
AA-600	1.2	600	14.5	50.0	101-1461
AA-1000	1.2	1000	14.5	50.0	101-1462
C	1.2	1600	26.2	50.0	101-1463
D	1.2	1600	34.2	61.5	101-1464

416071

Type	Pack Qty	Order Code	Price/Pack	
			1+	10+
AAA	2	101-1460	6.64	6.38
AA-600	4	101-1461	9.11	8.76
AA-1000	4	101-1462	14.22	13.77
C	2	101-1463	12.89	12.37
D	2	101-1464	14.06	13.51

Standard Batteries/Cells



Nickel Cadmium rechargeable batteries equivalent in size to popular primary types. The AA cells have solder tags fitted enabling battery pack manufacture.

High+	Nominal Capacity Ah	Dimensions L Dia.	Weight (g) Approx.	Mfrs. List No.	Order Code
1.2 N	0.23	31 13	8	GP23NKC	206-465
1.2 AAA	0.3	46 11	10	GP30AAKC	174-671
1.2 AA	0.6	50.5 15	20	GP60AAKHB	521-541
1.2 D	4.5	61 32.3	135	GP450DKNBH	908-770

230478

Type	Order Code	Price Each				
		1+	10+	20+	100+	+
N	206-465	6.63	6.31	6.01	4.97	--
AAA	174-671	6.60	6.34	6.08	5.10	--
AA	521-541	4.94	4.75	4.55	3.80	--
D	908-770	18.59	17.84	17.13	14.37	--

Specialised Cells/Battery Packs



A range of nickel cadmium single cells fitted with solder tags and a battery pack used in more specialised areas

Volt- age	Can Style	Nominal Capacity Ah	Charge Rate (14-16 hrs)	Dimensions L Dia.	Weight (g) Approx.	Solder Tags	Mfrs. List No.	Order Code
1.2V	2/3AF	0.7	70 mA	29.2 17	18	Yes	GP70AFKHB	451-435
1.2V	RR	2.0	200 mA	42.2 22.2	48	Yes	GP200SCKHB	605-487
6V	5D	4.5	450 mA	63.5 x 34.7 x	176	Yes	GP450DKNB	908-769

230478

Can Style	Order Code	1+	10+	20+	100+	+
2/3AF (1/2A)	451-435	7.29	7.12	6.96	6.63	--
RR (C ₂)	605-487	8.75	8.35	7.93	6.50	--
5D	908-769	99.45	94.48	87.85	70.69	--

High Capacity Battery/Cells



- Rechargeable nickel cadmium cells
- High capacities for extended discharge times
- Capable of 700+ full charge/discharge cycles
- Solder tags fitted to some cells for battery pack assembly

Compliant
Non-compliant
+ Limited stock - RoHS replacement available

RoHS



Vol- age	Can Style	Nominal Capacity Ah	Charge Rate (14 hrs)	Dimensions L Dia.	Weight (g) Approx.	Solder Tags	Mfrs. List No.	Order Code
1.2	AAA	0.3	30 mA	45 11	10	Yes	GP30AAKHB	174-683
1.2	1/3AA	0.18	18 mA	16.9 14.6	7	Yes	GP18AAKHB	451-393
1.2	2/3AA	0.4	40 mA	30.7 14.6	12	Yes	GP40AAKHB	451-400
1.2	AA	0.95	95 mA	50 14.6	25	No	GP100AAKC	908-540
1.2	AA	0.95	95 mA	50.2 14.6	25	Yes	GP100AAKHB	908-538
1.2	2/3AF	0.7	70 mA	29.2 17	18	Yes	GP70AFKHB	451-435
1.2	4/5AF	1.2	120 mA	43.2 17	28	Yes	GP120AFKHB	451-447
1.2	AF	1.4	140 mA	50.2 17	33	Yes	GP140AFKHB	451-459
1.2	7/5AF	2	200 mA	66.2 17.2	43	Yes	GP200AFKHB	451-460

230479

Can Style	Order Code	Price Each				
		1+	10+	20+	100+	+
AAA	174-683	6.29	5.92	5.72	4.71	--
1/3AA	451-393	5.76	5.49	5.30	4.49	--
2/3AA	451-400	4.24	4.00	3.74	3.09	--
AA(not tagged)	908-540	6.29	6.01	5.85	4.91	--
AA	908-538	7.16	6.86	6.70	5.59	--
2/3AF	451-435	7.29	7.12	6.96	6.63	--
4/5AF	451-447	7.79	7.38	7.02	6.01	--
AF	451-459	8.52	8.09	7.70	6.05	--
7/5AF	451-460	13.42	12.77	12.09	10.21	--

High Temperature Batteries

C and D Cell Sticks



- Designed for use in high ambient temperatures
- All have solder tags for ease of connection
- Applications include emergency lighting and other standby uses where high ambient temperatures are experienced



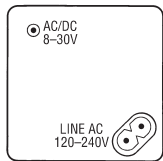
Operating temperature -20°C to +65°C

Voltage	Can Style	Nominal Capacity Ah	Dimensions L Dia.	Weight (g) Approx.	Mfrs. List No.	Order Code
1.2	C	2.5	50 26	72	GP250CKTHB	318-9788
2.4	C	2.5	100 26	144	GP250CK2THB	318-9790
3.6	C	2.5	150 26	216	GP250CK3HNB	318-9806
1.2	D	4.5	61 32.3	125	GP450DKTHB	174-646
2.4	2D	4.5	125 32.3	250	GP450DKT2A4B	174-658
3.6	3D	4.5	185 32.3	375	GP450DKT3A4B	174-660
4.8	4D	4.5	245 32.3	500	GP450DKT4	380-3764
6	5D	4.5	305 32.3	625	GP450DKT5	380-3776

230480

Can Style	Order Code	Price Each				
		1+	10+	25+	100+	+
Single C Cell	318-9788	10.44	9.91	9.43	8.71	--
2 C Cell	318-9790	22.38	21.26	20.18	18.69	--
3 C Cell	318-9806	32.99	31.33	29.77	27.59	--
Single D Cell	174-646	18.56	17.65	16.74	15.11	--
2 2D Cell	174-658	34.80	33.09	31.43	28.34	--
3 3D Cell	174-660	54.69	51.97	49.40	44.56	--
4 4D Cell	380-3764	76.01	66.37	--	--	--
5 5D Cell	380-3776	96.14	83.95	--	--	--

Standard Battery, Built-In Charger



Connections in battery base

The 'X-cell' comprises of a set of nickel cadmium cells and charger contained in a PJ996, 6V lantern battery case. The battery can be charged up to 3000 times from a wide range of dc and ac voltages. Supplied complete with charging leads.

Vol- age	Can Style	Nom. Capacity Ah	Max Drain Curr. A	Re-charge Time Hrs	Recharge Voltage V	Max. Dimensions H W D	Weight (g) Approx.	Mfrs. List No.	Order Code
6V	PJ996	1.2	4	12/14	8 to 30 dc/ac or 110 to 240 ac	110 65 65	585	X-CELL PLUS	207-901
6V	PJ996	2.4	4	16/18		110 65 65	655	X-CELL MAJOR	207-913

231153

Capacity Ah	Order Code	Price Each			
		1+	5+	+	+
1.2	207-901	117.16	112.76	--	--
2.4	207-913	161.49	--	--	--

Laptop Computer Batteries

NiMH and Li-Ion



- A range of replacement batteries for laptop computers
- The batteries are available as "Dumb" or "Smart"
- The "Smart" batteries technology monitors the battery usage and status, reporting via the smbus

Voltage	Capacity mAh	Dimensions (H W D)		Smart	Mfrs. List No.
NiMH	10.8V	1.7	19 145 53	Y	DR15S
	7.2V	1700	18 145 36		DR17
	7.2V	2.4	18 113 71		DR30
	10.8V	2.4	18 208 53		DR31
	10.8V	3.1	19 216 53		DR35
	10.8V	3.1	19 216 53	Y	DR35S
	12V	3100	20 150 89	Y	B905S
Li-ion	11.1V	5400	20 150 89	Y	DR202S

230482

Mfrs. List No.	Order Code	Price Each		
		1+	5+	10+
DR15S	318-9831	134.12	128.25	122.66
DR17	318-9843	94.87	91.03	86.45
DR30	318-9855	98.54	94.54	89.80
DR31	318-9867	137.93	132.34	125.74
DR35	318-9879	113.37	--	--
DR35S	318-9880	161.01	154.44	146.74
B905S	318-9892	178.81	169.85	161.36
DR202S	318-9910	301.34	289.09	274.66

Rechargeable Nickel Metal Hydride

Nickel Metal Hydride (Ni-MH) rechargeable batteries offer certain advantages over traditional Ni-Cad cells.

- They have a greater energy density than Ni-Cad, typical capacity for AA Ni-Cad=800mAh; NiMH=1800mAh
- Advanced Ni-MH technology offers up to 50% more life
- Longer life cycle, up to 500 charge/discharge cycles
- Superior temperature range
- Improved self discharge characteristics
- No memory effect-can be topped up
- Do not need to be discharged before charging
- More environmentally friendly than Ni-Cad batteries-zero percent cadmium

230484

Charger and AA NiMH Batteries

PowerBank



- Charger complete with 4xAA Ni-MH batteries
- More than 500 charge/discharge cycles, under normal usage
- Batteries are 1300mAh Nickel Metal Hydride, ideal for high drain applications
- NiMH batteries do not suffer from memory effect
- Replacement/spare batteries available

Charging temperature	0°C to 40°C
Battery storage temperature	-20°C to 35°C
Dimensions	118x75x40mm

Mfrs. List No. GPKB01BS-C4=319-7384, GPK01GS-C4=319-7396, GP130AAHC=604-549

203243

UK Charger + 4 AA	Order Code	Price Each			
		1+	5+	10+	+
Euro Charger + 4 AA	319-7384	48.96	46.50	44.19	
Spare Batteries	319-7396	48.96	46.50	44.19	
AA NiMH Battery	604-549	9.61	9.04	8.68	7.83
					--

Primary Style Rechargeable Cells



Note: Supplied and priced in blister packs

- High capacity Duracell Supreme NiMH, 900mAh (AAA), 2500mAh (AA)
- Premium quality range of Nickel Metal Hydride (NiMH) cells from Duracell
- Premium capacity
- Designed for high drain devices
- Does not need discharging before charging
- Duracell NiMH multi charger
- Universal desktop unit designed for AAA, AA, C, D, PP3 NiMH batteries only
- Fitted with UK 3-pin mains plug

Batteries

Voltage	Can Style	Typical capacity (mAh)	Dimensions		Weight Approx. (g)	Order Code
			L	Dia		
1.2	AAA SUPREME	900	44.5	10.5	32	100-3457
1.2	AA SUPREME	2500	50.5	14.5	103	100-3459
1.2	AAA	750	44.5	10.5	32	829-9820
1.2	AA	1700	50.5	14.5	103	100-3461
1.2	AA	2300	50.5	14.5	57	829-9846
1.2	C	2200	50	26.2	128	414-0280
1.2	D	2200	61.1	34.19	145	414-0291
9	PP3	150	48.5 x 26.5 x 17.5		52	414-0308

Charger	(mAh) Capacity	Charging Current	Charge Time (Hours)
AAA	750	120mA	7
AA	1800	310mA	7
C	2200	440mA	7
D	2200	440mA	7
9V	150	15mA	11

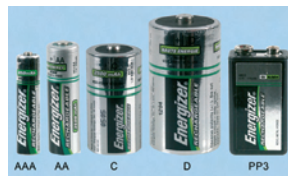
239875

Can Style	Pack Qty	Order Code	Price Per Pack			
			1+	5+	10+	25+
AAA SUPREME	4	NEW 100-3457	25.84	25.55	25.06	24.54
AA SUPREME	4	NEW 100-3459	27.44	27.15	26.63	26.11
AAA-750	4	829-9820	25.84	25.55	25.06	24.54
AA-1700	4	NEW 100-3461	24.02	22.82	21.55	20.44
AA-2300	4	829-9846	27.44	27.15	26.63	26.11
C	2	414-0280	25.35	24.70	24.70	24.44
D	2	414-0291	25.35	24.70	24.70	24.44
PP3	1	414-0308	22.56	22.36	22.26	21.74
Multi Charger		110-1339	56.57	55.43	54.33	--

Primary Style Rechargeable Cells



- A range of Nickel Metal Hydride (NiMH) cells
- Designed for high drain devices
- Do not need discharging before charging
- Longer service life
- Rechargeable up to 1000 times
- No memory effect - can be topped up
- Universal fast charger for up to 4xAAA, AA, C and D batteries or 2x9V batteries
- Charges Nickel Metal Hydride (Ni-MH) and Nickel Cadmium (Ni-Cad) rechargeable batteries



- Microprocessor technology to maximise battery life protection
- LED charging status indication
- Automatic switch to trickle charge for AAA, AA, C and D Cells
- Automatic reverse polarity protection
- Powered via a UK 3-pin mains plug

Batteries

Voltage	Can Style	Typical capacity (mAh)	Dimensions		Weight Approx. (g)	Order Code
			L	Dia		
1.2V	AAA	850	44.5	10.5	12	880-4168
1.2V	AAA	1000	44.5	10.5	12	119-1556
1.2V	AA	1700	50.5	14.5	27	508-1579
1.2V	AA	2500	50.5	14.5	27	880-4184
1.2V	C	2500	50	26	64.5	880-4192
1.2V	D	2500	61.1	34.2	77.5	880-4206
8.4V	PP3	175	61	26.6	55	880-4214

Charger	Type	Capacity (mAh)	Charge Time	Charging Current	Trickle Current
AAA	NiMH	650-1000	3h - 3h 45mins	140mA	30mA
AAA	NiCad	300	1h 20mins	140mA	30mA
AA	NiMH	1600-2500	3h 20 - 3h 45mins	275mA	30mA
AA	NiCad	800	1h 45mins	275mA	30mA
C	NiMH	2500	5h	550mA	30mA
C	NiCad	1500	3h	550mA	30mA
D	NiMH	2500	5h	550mA	30mA
D	NiCad	1500	3h	550mA	30mA
9V	NiMH	175	12h	12-16mA	-
9V	NiCad	120	10h	12-16mA	-

Note: Supplied and priced in blister packs

386856

Can Style	Pack Qty	Order Code	Price Each			
			1+	5+	10+	25+
AAA-850	2	880-4168	13.70	13.25	12.63	11.88
AAA-850	4	NEW 119-1555	23.73	22.72	21.78	20.90
AAA-1000	4	NEW 119-1556	25.23	24.09	23.08	22.20
AA-1700	4	508-1579	23.66	22.65	21.71	20.83
AA-2500	2	880-4176	14.26	13.77	13.31	12.89
AA-2500	4	880-4184	26.89	26.01	25.13	24.35
C	2	880-4192	27.44	26.56	26.30	24.31
D	2	880-4206	27.44	26.56	26.30	24.31
PP3	1	880-4214	27.44	26.56	26.30	24.31
Charger	1	432-7240	65.10	63.45	61.86	--

Primary Style Rechargeable Cells



- Improved performance over Ni-Cad
- Ideal for high drain devices
- Long service life
- No memory effect
- Do not need to be discharged before charging

New Varta Microbattery primary style rechargeable Ni-MH cells in PowerOne livery are available in the five standard consumer sizes, AAA, AA, C, D, and 9V. PowerOne Ni-MH round cells are the perfect choice for today's high power applications. They can be used with high discharge currents and can be recharged quickly. With a high number of charge and discharge cycles, they are the cost effective alternative to standard primary cells.

Can Style	Voltage	Capacity mAh	Max. Dimensions		Weight (g) Approx.	Mftrs. List No.	Order Code
	V	mAh	L	W/Dia. D			
AAA	1.2	700	44.5	10.5	13	5103210501	508-8045
AA	1.2	2300	50.5	14.3	26	5206210501	109-6322
C	1.2	3150	50.0	26.0	60	5114210501	508-8069
D	1.2	3150	61.5	33.2	70	5120210501	508-8070
9V	8.4	180	48.5	26.7	15.6	5122210401	108-3709

338558

Can Style	Pack Qty	Order Code	Price Each		
			1+	5+	10+
AAA	1	508-8045	7.62	7.16	6.87
AA-2300	1	NEW 109-6322	7.84	7.45	7.00
AA-2300	2	NEW 108-3708	14.52	13.90	13.31
C	1	508-8069	18.88	17.87	17.28
D	1	508-8070	19.63	18.55	17.94
9V-180	1	NEW 108-3709	16.08	15.17	14.32

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www.farnell-newarkinone.com.sg

The very latest NEW products

Compliant
 Non-compliant
 Limited stock - RoHS replacement available
RoHS



Standard/Specialised Cells



- A range of rechargeable Nickel Metal Hydride cells
- Enhanced capacity over Nickel Cadmium cells
- No memory effect
- Longer cycle life
- Solder tags fitted to some batteries for battery pack assembly

Operating temperature 0°C to + 40°C

Voltage	Can Style	Nom. Cap. Ah	Charge Rate (14hrs) mA	Max. Discharge Rate mA	Dimensions L Dia. Approx.	Weight (g)	Solder Tags	Mfrs List No.	Order Code
V1.2	N	0.36	36	1080	29.5 11.6	8.6	No	GP36NH	938-4448
V1.2	1/2AF	0.6	60	1800	22 17	14	Yes	GP60AFH	604-513
V1.2	2/3AAA	0.30	30	840	29 10.2	9	Yes	GP30AAAHMB	206-519
V1.2	2/3AF	1	100	3000	29 17	19	Yes	GP100AFHBB	908-551
V1.2	2/3AA	0.75	75	1800	30.5 14.6	13	Yes	GP75AAHBB	507-027
V1.2	4/5AF	1.8	180	5400	43 17	32	Yes	GP181AFH	604-525
V1.2	4/5AA	1.2	120	3600	43 14.4	22	Yes	GP121AAM	604-537
V1.2	AAA	0.5	55	1650	44 10.5	13	Yes	GP60AAAHBB	174-695
V1.2	AAA	850	85	2550	45.5 10.5	14.5	No	GP85AAAH	505-6810
V1.2	AA	1.3	130	3600	49.5 14.5	25	No	GP130AAHC	604-549
V1.2	AA	1.8	180	4500	50.5 14.5	27	No	GP180AAHC	206-490
V1.2	AA	1.8	180	3600	50 14.6	25	Yes	GP180AAHBB	536-970
V1.2	AA	2.15	215	6300	50.5 14.5	27	No	GP220AAHC	505-6809
V1.2	AF	2.5	250	6300	50 17	37	Yes	GP250AFH	604-550
V1.2	7/5AAA	0.8	80	2400	66.2 10.5	17	Yes	GP80AAAH	604-562
V1.2	7/5AF	3.7	370	10800	67 18	53	Yes	GP380AFHBB	174-701
V1.2	CS	3.0	300	6600	43 23	47	Yes	GP300SCHBB	174-713
V8.4	PP3	0.17	17	300	48.5 26.5	42	No	GP17R8H	206-477

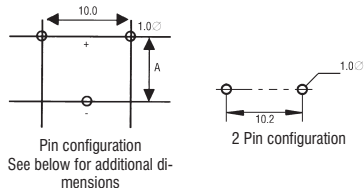
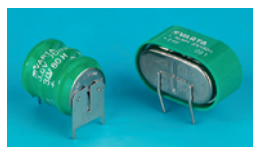
*Note: Charge times may need adjusting due to different charge currents.

230486

Can Style	Order Code	Price Each				
		1+	10+	25+	100+	+
N	NEW 938-4448	6.51	6.18	5.63	5.14	--
1/2AF	604-513	9.12	8.65	8.29	7.51	--
2/3AAA	206-519	3.98	3.87	3.77	2.99	--
2/3AF	908-551	8.19	7.70	7.38	6.70	--
2/3AA	507-027	6.50	6.14	5.88	5.27	--
4/5AF	604-525	15.25	14.33	13.78	12.42	--
4/5AA	604-537	11.21	10.53	10.11	9.10	--
AAA	174-695	10.28	10.01	9.78	8.81	--
AAA	NEW 505-6810	10.42	10.09	9.93	9.18	--
AA	604-549	9.61	9.04	8.68	7.83	--
AA	206-490	9.95	9.62	9.46	7.96	--
AA	536-970	11.73	11.28	10.86	9.75	--
AA	NEW 505-6809	10.42	10.09	9.93	9.18	--
AF	604-550	18.06	16.97	16.32	14.89	--
7/5AAA	604-562	13.42	12.61	12.09	10.95	--
7/5AF	174-701	23.53	22.98	22.36	20.22	--
CS	174-713	14.91	14.53	14.20	12.81	--
PP3	206-477	13.59	13.23	12.90	11.96	--

PCB Mounting

NiMH MemPac Memory Protection Range



- Drop-in replacement for existing nickel cadmium batteries of equivalent sizes
- More environmentally friendly than nickel cadmium versions

Note: The minimum voltage across the terminals when charging is 1.45V per cell, i.e. Order Code 279-341 has 3x1.45V = 4.35V

Operating temperature 0°C to +60°C

Voltage	Nom. Cap. mAh	Charge (14hrs) mA	Max. Discharge Rate mA	Dimensions H W/Dia. A	Weight (g) Approx.	Mfrs List No.	Order Code
V1.2	150	14	4.2	5.9 14.1 6.35	6.2	1/V150H	863-968
V2.4	80	7	2.1	12 16.5	8.3	2/V80H KM SLF	854-657
V2.4	150	14	4.2	11.9 25.6 12.8	12.7	2/V150H	279-330
V2.4	15	1.4	0.45	6.7 12 7.4	2.2	2/V15H	863-956
V2.4	220	20	6	14 25.6 15.5	17	2/V200H	351-9569

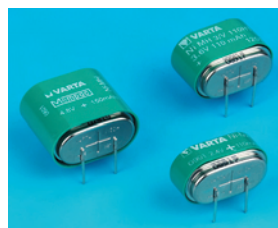
V2.4	250	24	7.2	480	26	26	14	22	2/V250H	351-9582
V3.6	12	1.4	0.45	22	10.5	12	10.1	3.3	3/V15H	524-864
V3.6	80	7	2.1	120	18.3	16.5	19.1	12.5	3/V80H	279-341
V3.6	150	14	4.2	220	18	15.3	18.8	19	3/V150H	279-353
V3.6	220	20	6	300	14	25.6	23	24	3/V200H	351-9570
V3.6	250	24	7.2	480	26	26	20.5	33	3/V250H	351-9594
V4.8	150	14	4.2	220	24	15.3	24.8	25.6	4/V150H	863-970
V6	150	14	4.2	220	30	15.3	30.8	32.2	5/V150H	863-981
V6	300	28	8.4	560	44.5	26.3	42.4	61.5	5/CP300H	863-993

230487

Voltage	Capacity mAh	Order Code	Price Each			
			1+	10+	100+	500+
V1.2	150	863-968	3.85	3.45	3.32	3.28
V2.4	80	854-657	5.92	5.30	5.07	4.75
V2.4	150	279-330	7.66	6.89	6.60	6.21
V2.4	15	863-956	4.88	4.36	4.19	3.93
V2.4	220	351-9569	8.62	7.83	7.28	7.02
V2.4	250	351-9582	10.80	9.82	9.10	8.81
V3.6	12	524-864	7.35	6.60	6.34	5.95
V3.6	80	279-341	9.21	8.48	8.19	7.90
V3.6	150	279-353	11.27	10.14	9.69	9.10
V3.6	220	351-9570	12.86	11.70	10.82	10.43
V3.6	250	351-9594	14.65	13.29	12.32	11.96
V4.8	150	863-970	14.82	13.33	12.90	8.60
V6	150	863-981	20.69	18.59	17.45	15.18
V6	300	863-993	18.89	17.36	16.84	15.99

High Temperature NiMH MemPac range Rechargeable

VARTA Microbattery



- Designed for memory protection applications where climatic conditions are less controlled
- Enhanced performance at high temperature
- Long life expectancy
- Resistant to deep discharging and polar reversing
- Compact construction
- Environmentally friendly

Voltage (V)	Nominal Capacity	Weight (g) Approx.	Mfrs. List No.	Order Code
2.4	110mAh	12	2/V110HT	390-7211
3.6	110mAh	18	3/V110HT	390-7223
4.8	110mAh	24	4/V110HT	390-7235

233552

Voltage	Order Code	Price Each		
		1+	10+	100+
2.4V	390-7211	8.02	7.22	6.89
3.6V	390-7223	11.64	10.47	9.85
4.8V	390-7235	15.15	13.94	13.36

Cylindrical & Prismatic NiMH

VARTA Microbattery



- High capacity cylindrical and prismatic NiMH cells
- Over 500 cycles
- Proven technology
- Tagged for combining into larger battery packs
- Applications include portable power systems, hand terminals and cordless telephones

Voltage	Nominal Capacity mAh	Standard Charge Rate (14 hrs)	Dimensions H W/Dia. D	Mfrs. List No.	Order Code
V1.2	600	55	33.7 15.9 6.6	1/VH640	305-5954
V1.2	785	55	47.8 17.0 6.3	1/VH860	864-055
V1.2	1550	155	50 14.5 -	1/VH1600	863-6273
V1.2	1900	195	41 16 -	1/VH2100	868-3042
V1.2	3650	370	67 17 -	1/VH4000	863-6281

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Mfrs. List No.	Order Code	Price Each			
		1+	10+	25+	100+
1/VH640	305-5954	9.98	9.69	9.36	8.91
1/VH860	864-055	16.84	16.02	15.34	13.62
1/VH1600	NEW 863-6273	8.76	8.30	8.04	7.75
1/VH2100	NEW 868-3042	13.31	12.76	12.14	11.62
1/VH4000	NEW 863-6281	17.58	16.89	16.18	15.66

Ruggedised Mempac S-H Memory Protection

VARTA Microbattery



- Designed for memory protection
- MEMPACS have been hermetically sealed by resin encapsulation
- Injection moulded plastic casing
- Capable of withstanding less control controlled atmospheres
- Ideally suited for direct mounting on PCBs

Voltage	Capacity mAh	Dimensions			Weight (g) Approx.	Mfrs. List No.	Order Code
		H	L	W			
2.4V	80	10	10	20	10	2/V80H	434-3700
2.4V	150	11.9	14.1	25.6	12.7	2/V150H	279-330
3.6V	80	10.0	55	20	15	3V80H S-H	305-5930
3.6V	150	16	22.2	40.3	21	3V150H S-H	305-5942

Mfrs. List No.	Order Code	1+	10+	25+	50+	+
2V80H	434-3700	12.77	12.25	11.44	8.94	--
2/V150H	279-330	7.66	6.89	6.60	6.21	--
3V80H S-H	305-5930	18.99	18.53	17.78	14.92	--
3V150H S-H	305-5942	22.04	21.48	20.61	17.29	--

Nickel Cadmium Chargers

NiCad/NiMH Desktop Charger/Discharger

EB202 Plus



- Charger/discharger for up to 4xAAA, AA, C or D cells and 1xPP3 cell
- Automatic change from discharge to timed charge and then to trickle charge
- LED charge/discharge status indicators
- Supplied with 1.9m mains lead

H = 140, W = 145, D = 68

Input voltage 230V ac, 50Hz Charging time 2 hours (AAA, AA type)
6 hours (C, D, 9V PP3 type)
(depending on battery capacity)

	Order Code	1+	5+	10+
UK Version	433-3901	69.69	65.79	60.90
European Version	358-6303	69.69	65.79	60.90

Eco II Desktop Alkaline Battery Charger



- LCD clearly displays charging cycle and all other relevant information (time left to completion etc...)
- Built-in microprocessor and precision current control handles the batteries in each channel separately ensuring optimum charging performance and conditioning
- Designed to charge primary batteries (Zinc Carbon, Zinc Chloride and alkaline types) as well as high capacity NiCd and NiMH rechargeables
- Recharges AAA, AA, C, D battery types
- Automatically rejects all bad / dead batteries ensuring maximum safety when charging
- Recharges up to 4 batteries

Order Code	1+	Price Each	5+
830-6044	110.47		109.69

Nickel Cadmium/Nickel Metal Hydride Chargers

NiCd/NiMH Ultra Fast Desktop Charger

Disispeed 4



H=51,W=111,D=114mm

- Designed for rapid charging of 1-4 AA/AAA NiCd/NiMH cells
- -ΔV charging
- Safety timer
- Fan cooling technology for optimum battery performance
- NiCd/NiMH selectable
- Individual charging supervision of each cell
- LED charging status indicator for each cell
- Faulty cell detection
- Trickle charge keeps cells topped up after fast charge
- 230V AC adaptor for mains use
- 12V DC car adaptor for mobile use
- Supplied with 3x 2600 NiMH AA cells
- Protected against reverse polarity
- UK and Euro versions
- CE and e-mark approved
- 3 year manufacturers warranty

NEW

1

Battery Type	Capacity (mAh)	Charging Current (mA)	Charge Time (Hrs)
AA NiMH	700-2600	1750	30 mins - 1 hr 40 mins
AAA NiMH	350-900	750	30 mins - 1 hr 30 mins
AA NiCd	700-1000	700	1 hr 10 mins - 1 hr 40 mins
AAA NiCd	250-400	300	1 hr - 1 hr 40 mins

Description	Mfrs. List No.	Order Code	1+	5+	10+
Disispeed 4 UK	5707033/UK	100-2951	124.50	121.44	117.80
Disispeed 4 Euro	5707033/EU	462-5079	134.15	--	--

Intelligent NiCd/NiMH Plug-in Charger

Energy 4 Set



H=58,W=93,D=132mm

- For charging 1-4 AAA, AA, C and D cells and 1-2 9V PP3 type cells
- Automatic refresh/discharge function
- Microprocessor controlled super-fast charging with -ΔV disconnection and pulse maintenance charging, fully automatic control of the charge process
- Safety timer
- Individual monitoring of each inserted cell
- Faulty cell detection
- Switch mode power supply and interchangeable primary plug set for worldwide use including UK, Euro, Australia and Japan/USA
- LED status indicator for each cell
- Protected against reverse polarity
- Supplied with 4x 2400mAh NiMH cells
- 3 year manufacturer's warranty

NEW

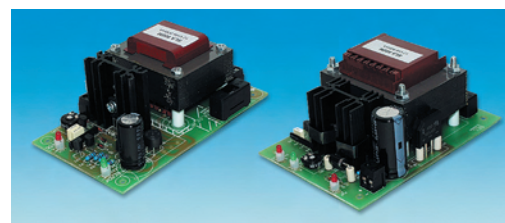
Battery Type (NiCd/NiMH)	Capacity (mAh)	Charging Current (mA)	Charge Time (Hrs)
AAA	250 - 900	300	1 Hr - 3 Hrs 40 Mins
AA	700 - 2600	650	1 Hr 20 Mins - 4 Hrs 40 Mins
PP3/9V	120 -250	70	2 Hr 20 Mins - 5 Hrs

Mfrs. List No.	Order Code	1+	5+	10+
5C07133..	948-5015	95.70	88.86	86.58

Lead Acid Chargers

Managed, Automatic Chargers

lawtronics



A range of open PCB managed, automatic chargers for rapid step charging of sealed lead acid batteries. These units should only be used when suitably enclosed, and are ideal for integration into OEM equipment. Corner mounting holes in PCB, with screw terminal blocks for electrical connections.

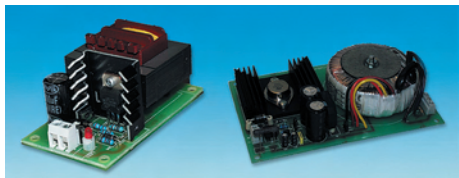
- Automatic current limited constant voltage charging cycle
- Minimum charge time
- Batteries may be left on indefinitely
- Will reform deep discharged batteries
- Charge cycle LED indicators
- Mains fused, short circuit and reverse polarity protected

	SLA500MPCB		SLA800MPCB	
	6V	12V	6V	12V
Battery voltage	6V	12V	6V	12V
Output current	650mA	500mA	1200mA	800mA
Battery capacity (suitability)	3 - 10Ah	2 - 6Ah	5 - 15Ah	4 - 10Ah
Input voltage	230V ac ±10%, 50Hz		230V ac ±10%, 50Hz	
LED Indicators	Charge, Ready		Power, Charge, Ready	
Thermal Fuse	Yes		No	
Size	115x70x45mm		120x85x55mm	
Weight	0.4kg		0.7kg	

244152

Mfrs. List No.	Order Code	1+	5+	10+	+
SLA500MPCB6V	427-1002	73.95	71.70	69.60	--
SLA500MPCB12V	119-7527	76.68	74.35	72.17	--
SLA800MPCB6V	427-1026	129.75	125.94	122.25	--
SLA800MPCB12V	119-7528	134.11	130.17	126.36	--

Non-Managed Chargers



A range of open PCB chargers for sealed lead acid batteries. These units should only be used when suitably enclosed, and are ideal for integration into OEM equipment. Corner mounting holes in PCB, with screw terminal blocks for electrical connections.

- Single step constant voltage charging
- May also be used as current limited power supply

	SLA250PCB12V	SLA1500PCB6/12	SLA1500PCB12/24
Battery voltage	12V	6V or 12V (links & trimmer)	12V or 24V (links & trimmer)
Output current	200mA	1500mA	1000mA
Battery capacity (suitability)	1 - 3Ah	>6Ah	>6Ah
Input Voltage	230V ac ±10%, 50Hz	230V ac ±10%, 50Hz	230V ac ±10%, 50Hz
LED Indicators	Power	None	None
Thermal Fuse	No	No	No
Size	75x45x40mm	160x100x45mm	160x100x45mm
Weight	0.2kg	0.8kg	0.8kg

244400

Mfrs. List No.	Order Code	1+	5+	10+	+
SLA250PCB12V	119-7522	44.99	43.58	42.34	--
SLA1500PCB6/12V	119-7524	138.88	129.50	118.31	--
SLA1500PCB12/24V	119-7525	131.50	127.49	123.79	--

6V/12V Constant Voltage



- Automatic managed charging cycle
- Recovers deeply discharged batteries
- Batteries may be left on-charge indefinitely
- Short circuit and overload protected
- Minimum charge time
- Initial surge current limit
- Reverse polarity protected

H = 75, W = 95, D = 160 H=55, W=60, D=85 Ex. pins

A range of managed, automatic chargers for rapid step charging of sealed lead acid cells. The units are double insulated and comply with EN60950/A1. Supplied with 1.8m lead with stripped, tinned ends.

	Plug-In		
	6V	12V	12V
Output current	450mA	300mA	800mA
Battery capacity (suitability)	1.8 to 5.4Ah	1.2 to 4.0Ah	3.2 to 9.6Ah
Input voltage	230V (+ 10%)		
Indication	Power On		

230509

Plug-In	Order Code	1+	5+	10+	+
6V, UK	119-7529	70.64	68.51	66.48	--
6V, Euro	119-7530	70.64	68.51	66.48	--
12V, UK	119-7531	70.64	68.51	66.48	--
12V, Euro	119-7532	70.64	68.51	66.48	--
Desk-Top					
6V, Euro	119-7533	152.47	147.88	143.45	--
12V, UK	119-7534	156.55	151.87	147.31	--
12V, Euro	119-7535	152.47	147.88	143.45	--

60W Bench Top Charger
ED1048 Series



A range of high efficiency switch mode chargers featuring 3 stage charging, fast charge, timer and float charge. The 12V version is approved to EN60601 medical standard making it suitable for use with medical equipment.

- 60W rated output
- High efficiency
- Reliable design
- Universal input
- 3 stage charging with 3 colour LED
- Certified to EN60601 medical standard (12V)
- Meets EN550022

Input Voltage Range	90-264V ac	Output Voltage	12V	Output Current Min.	0.1A	Output Current Max.	4.0A	Regulation	200mV	Efficiency	72%	Dimensions (WxHxD)	75x39x140	Mfrs. List No.	ED1048-12M	Order Code	830-4327
Input Frequency	47-63Hz	Output Ripple & Noise	100mV pk-pk (typ.)	0.1A	2.0A	200mV	200mV	72%	75x39x140	ED1048-24M	830-4335	386168					
Charging Voltage (12V Version)	14.7V ±0.2V for Fast Charging	Charging Voltage (24V Version)	29.4V ±0.2V for Fast Charging														
	13.8V ±0.2V for Trickle Charging		27.6V ±0.2V for Trickle Charging														
Short Circuit Protection	Continuous	Line Regulation	±1% max.														
Load Regulation	±1% max.	Isolation Voltage	2121V dc min.														
Operating Temperature	0° to 40°																

Mfrs. List No.	Order Code	1+	5+	10+	+
ED1048-12M	830-4327	156.04	152.17	148.23	--
ED1048-24M	830-4335	156.04	152.17	148.23	--

48W Bench Top Chargers
PSE48 Series



A range of constant current constant voltage power supplies suitable for charging 12V, 24V and 48V sealed lead acid battery packs. All units carry international safety approvals and are class 2 double insulated.

- 48W rated output
- High efficiency
- Reliable design
- Inversal input
- Constant Current/Constant Voltage output
- Class II insulation (double insulated)
- Approved to EN60950
- Meets EN55022

Input Voltage Range	90-264V ac	Output Voltage	13.8V dc	Output Current Min.	0.1A	Output Current Max.	3.5A	Regulation	1%	Efficiency	80%	Dimensions (WxHxD)	60x30x110	Mfrs. List No.	PSE48-13V8C8	Order Code	830-4297
Input Frequency	47-63Hz	Output Ripple & Noise	1% pk-pk (typ.)	0.1A	1.8A	1%	80%	60x30x110	PSE48-27V6C8	830-4300							
Short Circuit Protection	Continuous	Line Regulation	±1% max.														
		Load Regulation	±1% max.														
		Isolation Voltage	2121V dc min.														
		Operating Temperature	0° to 40°														

386234

Mfrs. List No.	Order Code	1+	5+	10+	+
PSE48-13V8C8	830-4297	113.44	110.60	107.77	--
PSE48-27V6C8	830-4300	113.44	110.60	107.77	--
PSE48-55V2C8	830-4319	113.44	110.60	107.77	--

Heavy Duty Startmaster



- Portable battery charger with start facility
- Trickle or boost charge
- Accurate ammeter
- Operates from a domestic 13 amp socket
- Thermal overload, short circuit, reverse polarity protection
- Supplied with heavy duty jump leads
- Housed in a strong steel case
- Capable of starting flat batteries on commercial vans, forklifts and domestic vehicles

Input Voltage	230V ac	Charge Rate Setting	Max/Med/Min
Output Voltage	12 24V dc	Packed Dimensions (H W L) mm	260 295 260
Charge Current	30A	Weight	21.1kg
Start Current	210A		

224339

Mftrs. List No.	Order Code	1+	4+	Price Each
03965	H 724-002	399.00	389.04	

H Heavy Item, special delivery, conditions apply.

Rechargeable Lead Acid Batteries

Sealed Lead Acid



A range of maintenance-free, rechargeable lead acid batteries in varying voltages and capacities.

The unique construction and sealing technique ensures no electrolyte leakage from the core or terminals. The method used for electrolyte suspension enables a maximum amount of electrolyte to be solidly bound in a dry state for providing maximum life and service, either in cyclic or standby operation. Connection is by tab terminals with the exception of those marked with ♦ which have bolt terminals.

May be charged/discharged or stored in any orientation excluding continuous use inverted.

Life Expectancy

Standby use:	3 to 5 years	NP Series
	7 to 10 years	NPL Series

Charging method (constant voltage 20°C)

Cyclic use:	6V battery	7.2V to 7.5V	Standby use:	6V battery	6.9V
	12V battery	14.4V to 15V		12V battery	13.8V

Capacity 20hr. Rate (Ah)	Max. Initial Charge Current (A)	Dimensions H* W D	Tab Size/ Bolt Hole	Weight (kg) approx.	Mftrs. List No.	Order Code
6 Volts						
1	0.25	57.5 51 42.5	4.7mm tab	0.25	NP1-6	146-534
1.2	0.3	57.5 97 25	4.7mm tab	0.31	NP1.2-6	143-564
2.8	0.7	67 134 34	4.7mm tab	0.57	NP2.8-6	279-377
4	1	109 70 47	4.7mm tab	0.85	NP4-6	143-566
7	1.75	101 151 34		1.28	NP7-6	152-245
10	2.5	101 151 50	4.7mm tab	2.2	NP10-6	147-471
12	3	101 151 50		2.05	NP12-6	174-774
12 Volts						
1.2	0.3	54.5 97 48	4.7mm tab	0.57	NP1.2-12	147-472
2	0.5	89 150 20	4.7mm tab	0.7	NP2-12	150-661
2.3	0.7	67 178 34		0.94	NP2.3-12	174-786
2.8	0.7	67 134 67		1.1	NP2.8-12	279-390
3.2	0.8	67 134 67		1.17	NP3.2-12	174-798
4	1	106 90 70		1.57	NP4.0-12	174-804
7	1.75	97.5 151 65	4.7mm tab	2.8	NP7-12	151-308
12	3	97.5 151 98		4	NP12-12	149-449
17	3.8	167 181 76	5.5♦	6.1	NP17-12	627-057
18	4.5	167 181 76	5.5♦	6.2	NP18.0-12	174-816

24	6	125	166	175	5.5♦	8.5	NP24-12	145-408
24	6	125	166	175	5.5♦	9	NPL24-12	521-681
38	9.5	170	197	165	5.5♦	13.8	NP38-12	145-409
38	9.5	170	197	165	5.5♦	14.7	NPL38-12	521-693
65	16.25	174	350	166	6.9♦	22.7	NP65-12	147-475
65	16.25	174	350	166	6.9	24	NPL65-12	521-700

H* = Height including terminals ♦ = Bolt terminals

224340

Capacity Ah	Order Code	1+	5+	25+	50+	+	Price Each
6 Volts							
1	146-534	37.89	35.23	32.76	30.52	--	
1.2	143-564	24.83	24.21	23.59	22.42	--	
2.8	279-377	33.04	30.82	29.32	27.30	--	
4	143-566	37.88	34.70	--	--	--	
7	152-245	39.90	38.30	--	--	--	
10	147-471	44.64	39.79	--	--	--	
12	174-774	40.70	36.58	34.45	34.45	--	
12 Volts							
1.2	147-472	34.64	33.83	32.08	32.08	--	
2	150-661	90.83	84.47	78.55	73.19	--	
2.1	279-389	46.91	40.96	40.89	38.16	--	
2.3	174-786	42.93	41.86	40.59	35.13	--	
2.8	279-390	51.61	45.18	43.88	40.89	--	
3.2	174-798	49.73	48.49	47.29	43.32	--	
4	174-804	51.38	49.73	48.49	45.63	--	
7	151-308	63.61	56.06	53.04	49.24	--	
12	149-449	116.27	103.84	102.96	95.94	--	
17	627-057	149.10	145.41	141.77	133.45	--	
18	174-816	136.58	133.15	129.16	111.80	--	
24*	145-408	173.99	155.63	155.25	142.32	--	
24*	521-681	201.99	180.58	177.39	177.39	--	
38*	145-409	246.59	220.48	--	--	--	
38*	521-693	290.19	260.07	--	--	--	
65*	H 147-475	424.28	388.31	--	--	--	
65*	H 521-700	562.28	502.61	--	--	--	

*7 to 10 Year Standby life expectancy
H Heavy Item, special delivery, conditions apply.

12 Volt Sealed Lead Acid Deep Discharge, Cyclic



Rechargeable maintenance-free lead acid batteries with excellent deep discharge recovery during cyclic applications. May be charged/discharged or stored in any orientation excluding continuous use inverted. Ideally suited to applications including, automatic guided vehicles, communications equipment, electric tools, wheelchairs, trolleys, etc.

Operating temperature: -15°C to +50°C
 Charging method: 2.5V Cyclic, 2.3V Standby

Mftrs. List No.	Max. Initial Charge Current (A)	Capacity 20hr. Rate (Ah)	Bolt Hole	Dimensions H W D	Weight (kg) Approx.	Order Code
NP17-12	3.8	17	5.5	167 76 181	6.1	627-069
NP24-12	6	24	5.5	125 168 175	9	249-683
NP38-12	9.5	38	5.5	170 197 165	14.2	249-695

224341

Capacity Ah	Order Code	1+	10+	25+	50+	+	Price Each
17	627-069	191.71	172.58	163.51	152.39	--	
24	249-683	194.26	177.78	174.17	162.24	--	
38	249-695	290.67	266.01	--	--	--	

Valve Regulated Lead Acid Batteries SWL Series



Compliant
 Non-compliant
 + Limited stock - RoHS replacement available

RoHS



1

Batteries, Chargers & Holders

The SWL range is an enhanced NP series design resulting in an improved energy to density ratio, giving up to 40% extra discharge capacity. All other attributes and operational characteristics are the same, thereby maintaining the benefit of a common mechanical and electrical design for users of both products.

NEW

- Valve regulated, sealed lead acid batteries
- High energy to density ratio
- Can be used in any orientation excluding continuous use inverted
- Standard case material is flame retardant to (UL94) HBO
- FR option case material is flame retardant to VO (UL94) (oxygen index 30)
- Manufactured within the ISO9000 Quality Assurance Standard
- FR option SWL's comply with BS6290 Part 4 (1997)
- Designed for UPS or any application requiring high power over a short duration
- Supplied with 2 terminal bolts

	SWL750	SWL1100	SWL1850	SWL2250	SWL1850-6
Nominal Voltage	12V	12V	12V	12V	6V
Nominal Wattage/Cell					
10 min to 1.6V/Cell	128	200	319	375	639
5 min to 1.6V/Cell	196	285	453	524	-
3 min to 1.6V/Cell	239	346	536	582	-
Energy Density (Wh/L)	88	96	88	100	90
Capacity (Ah)	10	16	26	31	26
Maximum Discharge Current/A	150A	200A	500A	500A	500A
Operating Temperature					
Charge	-15 to 50°C	-15 to 50°C	-15 to 50°C	-15 to 50°C	-15 to 50°C
Discharge	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Dimensions (HxWxD)	125x166 x175mm	170x197 x165mm	174x350 x166mm	177.5x380 x166mm	174x350 x166mm
Weight	9.3kg	14.5kg	23.8kg	28.4kg	23.5kg

418733

Mfrs. List No.	Order Code	1+	10+	25+
SWL750	109-3912	193.97	187.16	180.82
SWL1100	109-3913	293.15	282.86	273.26
SWL1850	109-3914	396.72	383.50	371.14
SWL1850-6	109-3917	396.72	383.50	371.14
Flame Retardant				
SWL750FR	109-3968	204.22	197.09	190.38
SWL1100FR	109-3970	308.57	297.77	287.68
SWL1850FR	109-3971	475.56	459.74	444.93
SWL1850-6FR	109-3972	475.56	459.74	444.93
SWL2250FR	109-3916	521.74	504.36	488.09

Sealed Gel Lead Acid-A500 Dryfit



Maintenance-free, rechargeable lead acid batteries with a unique thixotropic gel electrolyte and flat plate electrode construction. Designed for use in stand-by/float applications and cyclic.

Operating temperature -20°C to +50°C
 Charging method (constant voltage 20°C)
 Cyclic use: 6V battery 7.2V to 7.35V Standby use: 6V battery 6.9V to 7.05V
 12V battery 14.4V to 14.7V 12V battery 13.8V to 14.1V
 Maximum charge current 0.5A/Ah

Capacity 20hr. Rate (Ah)	Max. Discharge Current (A)	Dimensions			Weight (kg) Approx.	Mfrs. List No.	Order Code
		H*	W	D			
6 Volts							
1.2	40	54.9	97.3	25.5	0.3	A506/1.2S	463-360
3.5	60	64.4	134.5	34.5	0.75	A506/3.5S	463-371
6.5	80	98.4	151.5	34.5	1.33	A506/6.5S	463-383
10	80	98.4	151.7	50.5	2.05	A506/10.0S	463-395
12 Volts							
1.2	40	54.9	97.5	49.5	0.65	A512/1.2S	463-401
2	40	64.4	178.5	34.1	1	A512/2.0S	463-413
3.5	60	64.4	134.5	66.8	1.5	A512/3.5S	463-425
6.5	80	98.4	151.7	65.5	2.6	A512/6.5S	463-437
10	80	98.4	152	98	4.1	A512/10.0S	463-449
16	200	167	181	76	6	A512/16.0G	463-450
25	200	126	176	167	5◆	A512/25G	463-462
30	400	180	197	132	6◆	A512/30G	463-474
40	400	175	210	175	6◆	A512/40G	463-486
65	440	190	353	175	6◆	A512/65G	463-498

H* = Height including terminals ◆ = Bolt terminals

230510

	Capacity Ah	Order Code	1+	10+	25+	100+
6 Volts	1.2	463-360	46.41	44.10	41.89	40.43
	3.5	463-371	76.67	72.83	69.19	66.79
	6.5	463-383	94.47	89.77	85.25	82.29
	10	463-395	111.38	105.82	100.56	97.08
12 Volts	1.2	463-401	73.59	69.91	66.43	64.16
	2	463-413	92.39	87.78	83.40	80.54
	3.5	463-425	123.29	117.13	111.28	107.45

Capacity Ah	Order Code	Price Each			
		1+	10+	25+	100+
6.5	463-437	147.95	140.56	133.54	128.90
10	463-449	179.01	170.07	161.56	156.00
16	463-450	185.64	176.35	167.54	163.41
25	463-462	192.27	182.33	173.55	167.54
30	463-474	248.63	236.18	224.35	216.65
40	463-486	321.56	305.47	290.19	280.15
65	463-498	586.76	557.41	529.52	511.26

Heavy Item, special delivery, conditions apply.

Sealed Lead Acid L400 Longlife



- 12 year lifespan
- Valve regulated lead acid technology
- Direct output terminals with threaded inserts
- Anti-leak system to ensure operational safety when used in the horizontal or vertical position
- Flat anti-corrosion plates and anti-bypass separator to prevent short circuit
- Fire resistance lid and cover in accordance with UL94-VO
- Complete with all connections nuts and accessories

Reliable, high performing designed for sensitive stand by applications requiring an excellent relationship between lifespan and cost.

Operating temperature		15°C to +35°C		Charge voltage		13.68V @ 20°C	
Capacity 10h @ 1.8V/cell	Dimensions H W D	Weight(kg) Approx.	Output Type	Mfrs. List No.	Order Code		
32	168 175 198	13.5	M6 Bolt	L412/32	174-841		
42	190 169 234	18.5	M8 Bolt	L412/42	174-853		
55	189.5 166 271.5	22	M8 Bolt	L412/55	174-865		

203225

Mfrs. List No.	Order Code	1+	10+	25+	50+
L412/32	174-841	267.78	261.24	254.61	239.46
L412/42	174-853	329.51	321.30	313.27	294.68
L412/55	174-865	409.40	399.13	389.19	366.11

Cyclon Sealed Lead Acid Cells and Monoblocs

DMS technologies



A wide range of exceptionally high performance 2V cells, monoblocs and custom built packs designed for use in applications using the unique technology of spirally wound electrodes made of pure lead. The Cyclon range is designed for use in applications where high rate, high temperature and fast charge is required.

Charging
 For single cells and monoblocs: -
 Cyclic Charge Voltage: 2.35 to 2.5 VPC
 Float Charge Voltage: 2.27 to 2.35 VPC
 No current limit is required when using a voltage regulated charger.

- Cyclon Cells**
- High rate performance
 - Temperature range -65°C to +80°C
 - 2 years storage life at 25°C
 - Fast charge capability
 - Maximum assembly variations
 - No loose electrolyte
 - 15 year design life (float 20°C)
 - High cycle life
 - Shock and vibration resistant

- Cyclon Monoblocs**
- High rate performance
 - Standard voltage options
 - Temperature range -40°C to +40°C
 - 10 year design life (float 20°C)

Prices are in Singapore Dollars and exclusive of GST. Due to the volatile nature of certain products, prices are subject to change without notice.

- Fast charge capability
- No loose electrolyte
- Integral fixing holes
- 2 years storage life at 25°C

Single Cell Technical Information

Capacity	Max. Pulse Discharge (A)	Terminals	Dimensions Height (mm)	Diameter (mm)	Weight Kg	Mftrs. List No.	Order Code
2V 2.5Ah	200	4.75mm tab	67.3	35.5	0.2	9810-0004	147-180
2V 4.5Ah	200	4.74x0.64 tags	103	34	0.3	9860-0004	174-828
2V 5Ah	285	6.35mm tab	80.3	46	0.4	9800-0004	147-181
2V 8Ah	330	6.35mm tab	109	44	0.6	9850-0004	174-830
2V 25Ah	1335	M8 Stud + M6 Stud -	174	65	1.7	9820-0004	147-183

Monobloc Technical Information

Capacity	Max. Pulse Discharge (A)	Terminals	Length (mm)	Width (mm)	Height (mm)	Weight kg	Mftrs. List No.	Order Code
6V 2.5Ah	200	4.75mm tab	113	45	70	0.52	9819-0012	427-3369
6V 5.0Ah	285	6.35mm tab	139	54	77	0.98	9809-0012	427-3370
6V 8.0Ah	330	6.35mm tab	139	54	102	1.43	9859-0012	427-3382
12V 2.5Ah	200	4.75mm tab	113	90	70	1.2	9819-0020	121-8977
12V 5Ah	285	6.35mm tab	139	108	77	2.2	9809-0020	121-8981
12V 8Ah	330	6.35mm tab	139	108	102	3.3	9859-0020	121-8982

Cyclon Packs Technical Information

Capacity	Continuous Current (A)	Terminals	Length (mm)	Dimensions Width (mm)	Height (mm)	Weight kg	Mftrs. List No.	Order Code
12V 2.5Ah	17	150mm fly leads	100	69	64	1.2	9810-0115	121-8983
12V 5Ah	17	150mm fly leads	133	90	77	2.4	9800-0115	121-8984
12V 8Ah	17	150mm fly leads	133	90	102	3.8	7002-0015	121-8985

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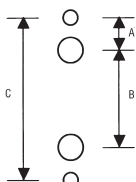
Mftrs. List No.	Order Code	1+	10+	25+	100+	+
Cyclon Cells						
9810-0004	147-180	14.25	13.65	12.94	11.96	--
9860-0004	174-828	18.67	18.30	17.81	16.80	--
9800-0004	147-181	19.66	18.46	17.78	16.28	--
9850-0004	174-830	28.35	27.79	27.04	25.51	--
9820-0004	147-183	81.88	77.74	74.26	68.41	--
Cyclon Monoblocs						
9819-0012	427-3369	30.49	29.97	29.48	27.59	--
9809-0012	427-3370	41.24	40.53	39.85	38.25	--
9859-0012	427-3382	53.69	52.85	51.90	49.47	--
9819-0020	NEW 121-8977	70.63	68.26	66.01	62.89	--
9809-0020	NEW 121-8981	91.89	88.80	85.83	81.83	--
9859-0020	NEW 121-8982	116.89	112.92	109.24	104.09	--
Cyclon Packs						
9810-0115	NEW 121-8983	131.57	127.11	122.94	117.15	--
9800-0115	NEW 121-8984	181.99	175.84	170.04	162.07	--
7002-0015	NEW 121-8985	249.04	240.74	232.99	222.22	--

Battery Holders

1/2AA, AAA, AA, C, D



PCB chassis Mounting



PCB Drilling pattern (see below for dimensions)

- A range of open frame battery holders
- Suitable for PCB or chassis mounting (1/2AA PCB only)
- Chassis mounting solder tags accept snap-on terminals (2.8 0.5)
- Interlocking lugs allow multiple assemblies of the same holder (except 1/2AA)
- Manufactured in black filled nylon

Can Style	Dimensions W	H	D	Drilling Pattern A	B	C	Mftrs. List No.	Order Code
D	38.1	28.2	71.0	16.0	35.6	29.5	BX0037	301-097
C	30.25	26.7	59.1	11.9	31.8	55.6	BX0036	301-085
AA	17.5	25.0	60.3	11.9	33.0	56.8	BX0035	301-073
AAA	13.5	17.1	52.4	10.5	27.9	48.9	BX0034	301-061
1/2AA	16.5	15.2	34.5	10.7	15.5	29.5	BX0031	174-725

230515

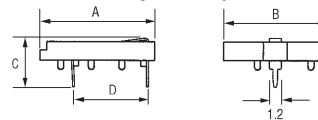
Can Style	Order Code	1+	25+	50+	100+	+	+
D	301-097	3.81	3.56	3.40	3.15	--	--
C	301-085	3.47	3.24	3.05	2.76	--	--
AA	301-073	2.97	2.76	2.63	2.41	--	--
AAA	301-061	2.87	2.66	2.54	2.28	--	--
1/2AA	174-725	3.51	3.05	2.82	2.38	--	--

Coin Cell Holders



KEYSTONE

- A range of PCB mountable coin cell holders
- PCB connections via solder pins
- Contacts are spring steel nickel plate and copper
- Suitable for single cells only



Maximum Cell Dia.	No. of Cells	A	B	C	D	Order Code
12mm	1	11.43	15.06	7.92	9.98	302-9839
12mm	2	11.43	15.06	9.65	9.98	908-630
16mm	1	22.79	19.05	7.93	11.76	676-482
20mm	1	28.35	22.76	8.50	20.50	676-469
20mm	2	30.96	27.76	11.48	20.50	302-9827
24mm	1	30.96	27.76	8.50	20.50	676-470
24mm	2	30.96	27.76	11.48	20.50	302-9815

230516

Cell Dia.	Order Code	1+	25+	50+	100+
12mm	302-9839	5.34	4.72	3.85	3.50
12mm	908-630	4.75	--	--	--
16mm	676-482	4.17	3.66	3.02	2.70
20mm	676-469	4.17	3.66	3.02	2.66
20mm	302-9827	4.21	3.70	3.05	2.69
24mm	676-470	4.17	3.66	3.02	2.66
24mm	302-9815	4.21	3.70	3.05	2.69

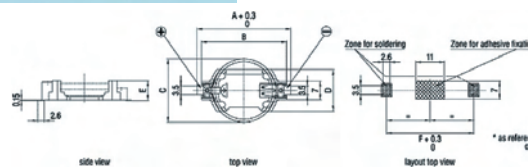
Lithium Coin Battery Holders



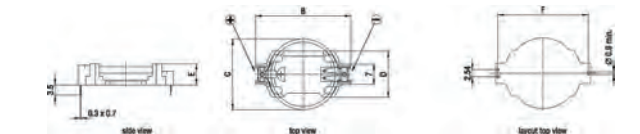
Surface Mount/Through Hole



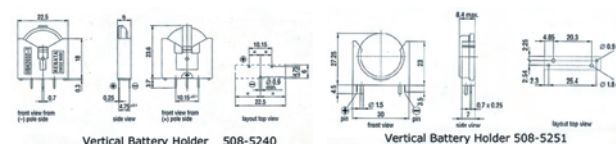
- Surface Mount (SMT) and Through Hole battery holders
- Designed for automatic 'pick and place' mounting
- Simple and fast replacement of battery
- Cell held firmly in position
- Clear separation of connections
- Heat resistant, glass fibre filled LCP/Flammability rating UL 94 V-0
- Short circuit and inverse polarity protection
- Solid design, Swiss made

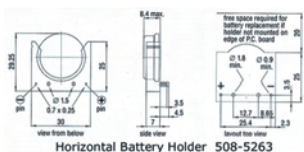


Model	Dimensions						Order Code
SMT Battery Holders	A	B	C	D	E	F	
SMTU 1225-1	23.7	20.3	12.5	12.7	4.8	21.1	508-5123
SMTU 1632-1	27.7	24.3	16.0	14.5	5.4	25.1	508-5135
SMTU 2032-1	32.0	28.5	20.0	16.1	5.4	29.3	508-5147
SMTU 2430-1	36.5	33.0	24.5	16.1	4.9	33.8	508-5159
SMTU 2450N-1	36.6	33.0	24.5	16.1	7.5	33.8	508-5160
SMTU 2477N-1	36.7	33.0	24.5	16.1	10.3	33.8	508-5172



Model	Dimensions						Order Code
Through Hole Battery Holders	B	C	D	E	F		
HU 1225-1	20.3	12.5	12.7	4.6	18.7	508-5184	
HU 1632-1	24.3	16.0	14.5	5.2	22.7	508-5196	
HU 2032-1	28.5	20.0	16.1	5.2	26.9	508-5202	
HU 2430-1	33.0	24.5	16.1	4.7	31.5	508-5214	
HU 2450N-1	33.0	24.5	16.1	7.3	31.5	508-5226	
HU 2477N-1	33.0	24.5	16.1	10.1	31.5	508-5238	





337057

Type	Order Code	Price Each			
		1+	25+	100+	250+
SMT Battery Holders					
SMTU 1225-1.	419-9431	2.60	--	--	--
SMTU 1632-1	508-5135	2.60	2.47	2.34	2.21
SMTU 2032-1.	419-9443	2.34	--	--	--
SMTU 2430-1.	419-9455	2.60	--	--	--
SMTU 2450N-1.	419-9467	2.67	--	--	--
SMTU 2477N-1.	419-9479	3.58	--	--	--
Through Hole Battery Holders					
HU 1225-1	419-9480	2.60	--	--	--
HU 1632-1	508-5196	2.60	2.47	2.34	2.21
HU 2032-1	419-9492	2.34	--	--	--
HU 2430-1	419-9509	2.60	--	--	--
HU 2450N-1.	419-9510	2.67	--	--	--
HU2477N-1	419-9522	3.58	--	--	--
Vertical Mount Holders					
VBH2032-1.	419-9534	2.67	--	--	--
NH5077.	419-9546	6.71	--	--	--
NL5077.	419-9558	6.71	--	--	--

Aluminium Holders

KEYSTONE

PCB and Chassis Mounting



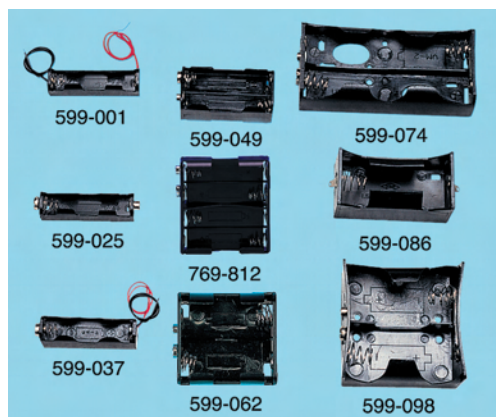
- Sturdy construction
- Low cost and lightweight
- Brass eyelets and lugs, nickel plated
- Moisture proof insulation washer
- Single and multicell configuration
- Both solder lugs and direct pcb mounting types available

203230

5 Per Pack	Order Code	Price Per Pack		
		1+	5+	20+
AA (PCB)	206-696	25.62	24.60	23.41
AA (PCB)	206-738	40.46	39.46	36.76
AA (Solder)	206-751	25.62	24.60	20.23
AA (Solder)	206-763	40.06	39.07	36.40
C (Solder)	206-775	27.04	26.39	25.04
C (Solder)	206-805	43.07	42.05	39.90
D (Solder)	206-817	47.54	46.36	44.03
D (Solder)	206-921	47.07	45.90	43.59

Single/Multicell

PRO-POWER



A range of general purpose battery holders moulded in black plastic suitable for project work.

Can Style	Connection	W	D	H	Order Code
AA	Leads	56	16	13	118-3113
AA	Leads	58	25	17	118-3115
AA	Snap terminals	56	25	17	118-3116
AA	Snap terminals	60	30	28	118-3117
AA	Snap terminals	58	29	59	118-3118
C	Snap terminals	60	53	21	118-3119
C	Snap terminals	108	53	23	118-3120
D	Solder tags	69	36	27	118-3121
D	Snap terminals	68	68	30	118-3122

Note: Not suitable for use with nickel cadmium cells or for industrial applications

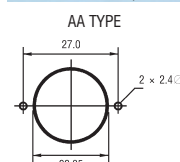
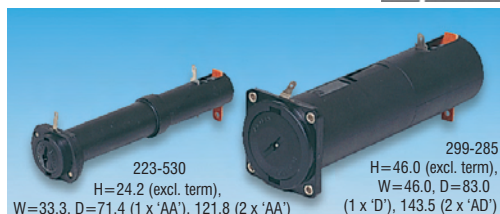
224348

5 Per Pack

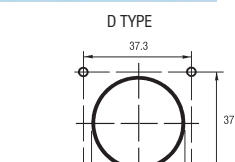
Can Style	Order Code	Price Per Pack		
		1+	5+	20+
AA	118-3113	3.06	2.67	2.31
AA	118-3115	3.76	3.20	2.79
AA	118-3116	3.58	3.04	2.68
AA	118-3117	3.87	3.35	2.93
AA	118-3118	9.21	8.95	8.04
C	118-3119	5.08	4.43	3.84
C	118-3120	6.28	5.44	4.85
D	118-3121	5.02	4.23	3.78
D	118-3122	6.41	5.53	4.92

Panel Mounting AA, D

BULGIN



Panel cutout max. panel thickness=3.2



Panel cutout max. panel thickness=4.0

Panel mounting battery holders suitable for 1 'AA', 2 'AA' or 1 'D', can style batteries. They are simply mounted from the rear of the panel leaving the circular matt face visible. The flush fitting bayonet cap with coin slot is clearly marked 'Battery'. Good battery contact is ensured by a spring at the rear of the holder which also aids with cell ejection. Connections are made via snap-on terminals (2.8 0.5, 'AA' can styles; 4.8 0.5, 'D' can style). See **CONNECTORS - CRIMP TERMINALS** Section. The 'AA' versions are manufactured in black polyester (cap is nylon) and the 'D' version is manufactured in black polycarbonate (cap is glass filled nylon).

Contact rating 10A max, AA style Contacts Brass, Tin plated and Nickel Silver (AA)
20A max, D style Brass, Nickel plated (D)

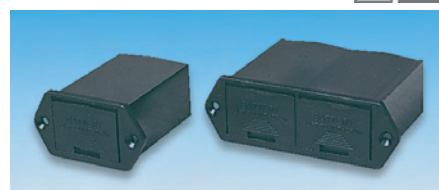
Mfrs. List No. BX0011/1=223-529, BX0012/1=223-530, BX0017=299-285, BX0016=908-629

224350/BAT47

Can Style	Order Code	Price Each			
		1+	25+	50+	100+
1 AA	223-529	8.98	8.31	7.45	6.13
2 AA	223-530	9.95	9.08	8.15	6.81
1 D	908-629	11.56	9.24	8.44	7.16
2 D	299-285	19.76	17.82	16.34	13.26

Enclosed PP3

BULGIN



145-359 Depth behind panel=54 Panel cut-out=34.5 24.5 Fixing centres=43
146-770 Depth behind panel=54 Panel cut-out=67.1 24.5 Fixing centres=75.6

PP3 battery magazines, suitable for panel of chassis mounting, finished in matt black. The 145-359 has one removable PP3 battery magazine, the 146-770 has two removable PP3 battery magazines. The battery is self-contacting as the magazine is locked in full insertion position. The holder is fitted with rear solder tag terminals.

Mfrs. List Nos: BX0023 = 145-359, BX0026 = 146-770

224353

Order Code	Price Each			
	1+	10+	25+	100+
118-4193	6.81	6.36	5.68	4.65
146-770	12.55	11.56	10.21	8.41

Battery Connectors

Snap-On

PRO-POWER



Snap-on connector for use with PP3 and PP6 batteries.

Type 1 replaces the BH9 connector. Type 2 has a rigid plastic housing with strain relief.

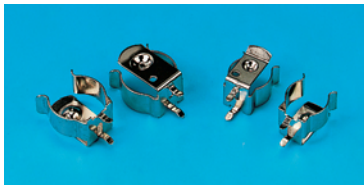
230522

10 Per Pack Type	Order Code	1+	25+	100+
1	118-3123 ●	3.95	3.24	2.85
2	118-3124 ●	7.22	6.48	5.85

Snap-In Battery Clips

KEYSTONE

PCB Mounting



- 2 types of battery clips in nickel plated steel
- Retains battery securely to withstand shock and vibration
- Advanced snap-in design for secure through hole mounting
- 908-721 AAA and N size cells
- Low profile, economical design
- 908-733 AA and A size cells

230531

5 Per Pack Order Code	1+	5+	20+
908-721	4.04	3.89	3.67
908-733	4.04	3.89	3.67

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1

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