

SPA 12 - 1.3 | VRLA Battery



Applications

- Uninterruptible Power Supplies (UPS)
- Electric Power Systems (EPS)
- Emergency backup power supplies
- Electronic apparatus and equipment
- Communication power supplies
- DC power supplies
- Auto control system

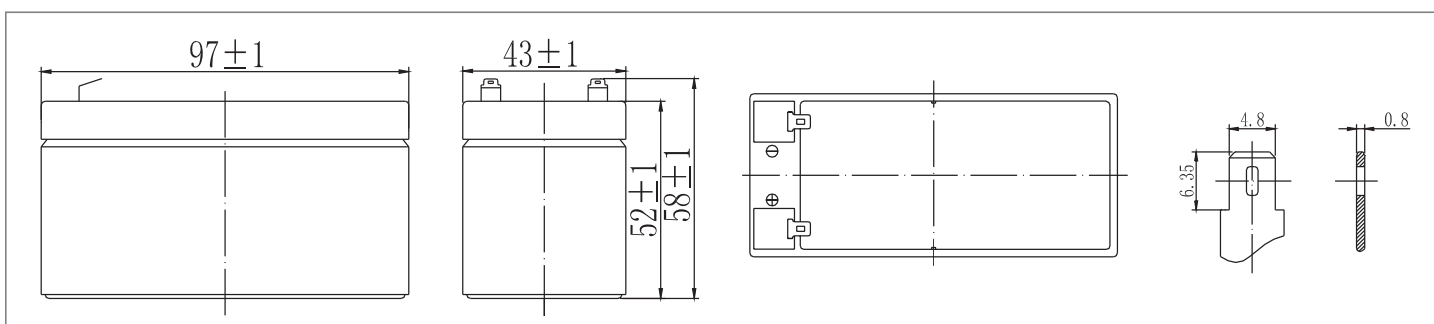
Specifications

Nominal Voltage	12 V	
Number of cells	6	
Design Life	10 years	
Dimensions	Length	97 mm
	Width	43 mm
	Height	52 mm
	Total Height	58 mm
Approx. Weight	0.52 kg	
Nominal Capacity (25°C)	20 hours rate (0.060 A, 10.5 V)	1.200 Ah
	10 hours rate (0.106 A, 10.5 V)	1.060 Ah
	5 hours rate (0.192 A, 10.5 V)	0.960 Ah
	1 hour rate (0.736 A, 9.6 V)	0.736 Ah
Max. Discharge Current (25°C)	18 A (5s)	
Max. Charging Current (25°C)	0.36 A	
Internal Resistance	90 mOhms	
Fully Charged battery (25°C)		
Self-Discharge (25°C)	3% of capacity declined per month (average)	
Operating Temperature Range	Discharge	: -15~50°C
	Charge	: -10~50°C
	Storage	: -20~50°C
Short Circuit Current	195 A	
Charging Characteristics (25°C)	Boost charging voltage	2.40-2.45 Vpc
	Temperature compensation	-30 mV/°C
	Float charging voltage	2.25-2.30 Vpc
	Temperature compensation	-18 mV/°C

Battery Construction

Component	Positive Plate	Negative Plate	Container	Cover	Safety Valve	Terminal	Separator	Electrolyte
Raw material	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

Dimensions



Constant Current Discharge (Amperes) at 25°C

End Voltage (Volts/Cell)	5 min	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	10 h	20 h
1.60 V	4.3	2.7	2.14	1.20	0.736	0.406	0.290	0.226	0.196	0.107	0.061
1.65 V	4.2	2.6	2.09	1.18	0.725	0.403	0.288	0.225	0.195	0.107	0.060
1.70 V	4.0	2.5	2.01	1.14	0.706	0.400	0.286	0.224	0.193	0.106	0.060
1.75 V	3.8	2.4	1.94	1.11	0.692	0.394	0.284	0.222	0.192	0.106	0.060
1.80 V	3.6	2.3	1.84	1.07	0.671	0.384	0.276	0.215	0.186	0.103	0.056

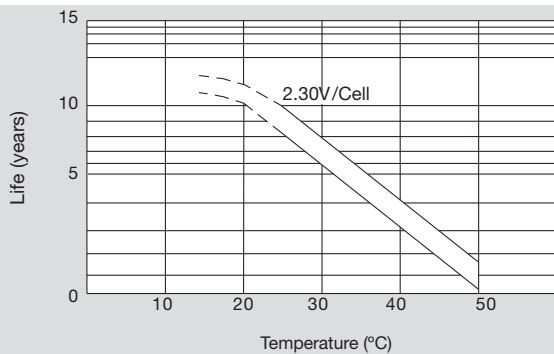
Constant Power Discharge (Watts) at 25°C

End Voltage (Volts/Cell)	5 min	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	10 h	20 h
1.60 V	48.0	30.6	24.4	13.8	8.52	4.75	3.45	2.70	2.34	1.29	0.729
1.65 V	46.4	29.6	23.8	13.5	8.39	4.72	3.43	2.68	2.32	1.28	0.726
1.70 V	44.5	28.4	22.9	13.1	8.18	4.68	3.40	2.66	2.31	1.27	0.721
1.75 V	42.6	27.2	22.1	12.7	8.02	4.61	3.38	2.64	2.29	1.27	0.720
1.80 V	39.7	25.6	21.0	12.3	7.77	4.49	3.28	2.56	2.22	1.24	0.677

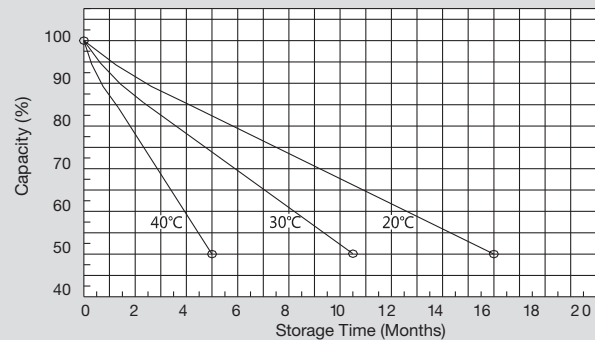
(Note) The above characteristics data are average values obtained within three charge/discharge cycles.

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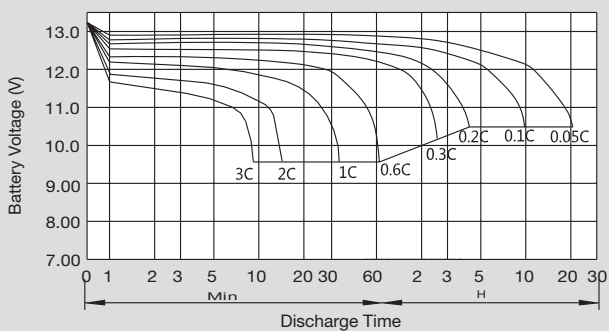
Temperature Effects on Float Life



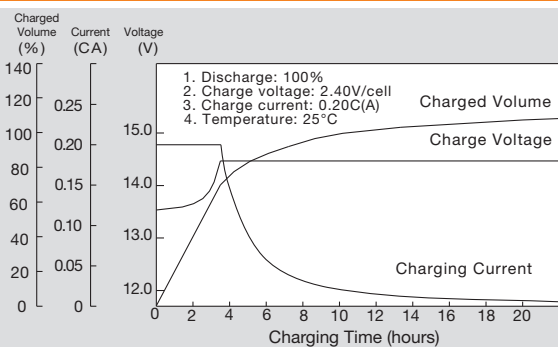
Self Discharge Characteristics



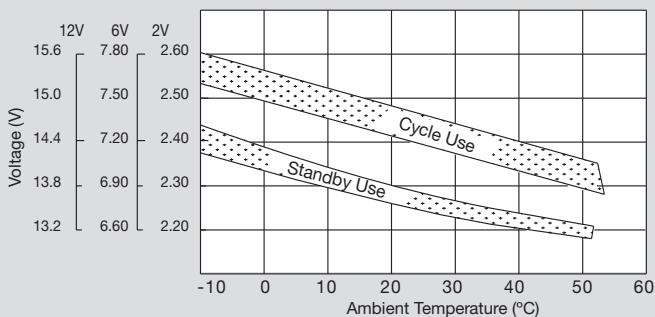
Discharge Characteristics (25°C)



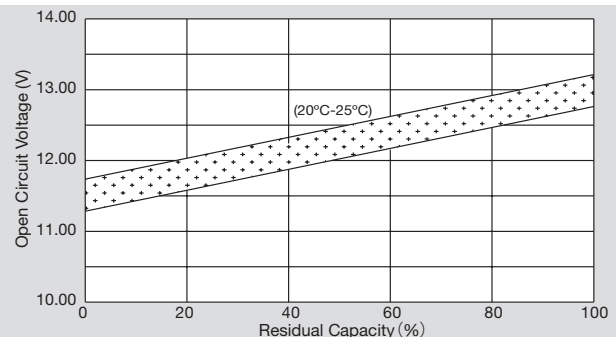
Charging Characteristics (25°C)



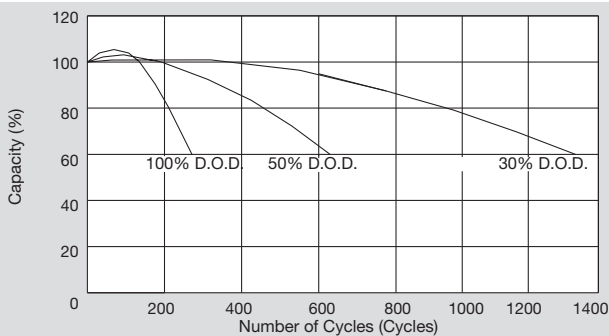
Relationship Between Charging Voltage and Temperature



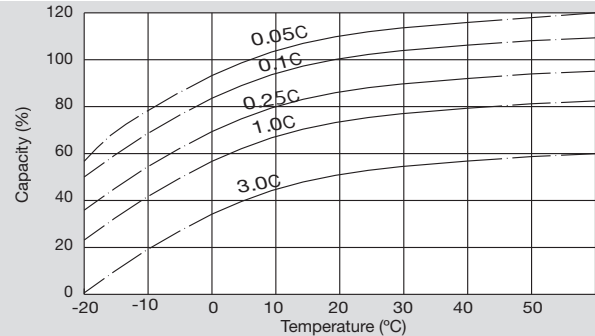
Relationship Between Open Circuit Voltage and Residual Capacity (25°C)



Cycle Service Life in Relation to Depth of Discharge



Temperature Effects on Capacity



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