

# SPA 12 - 10 | 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

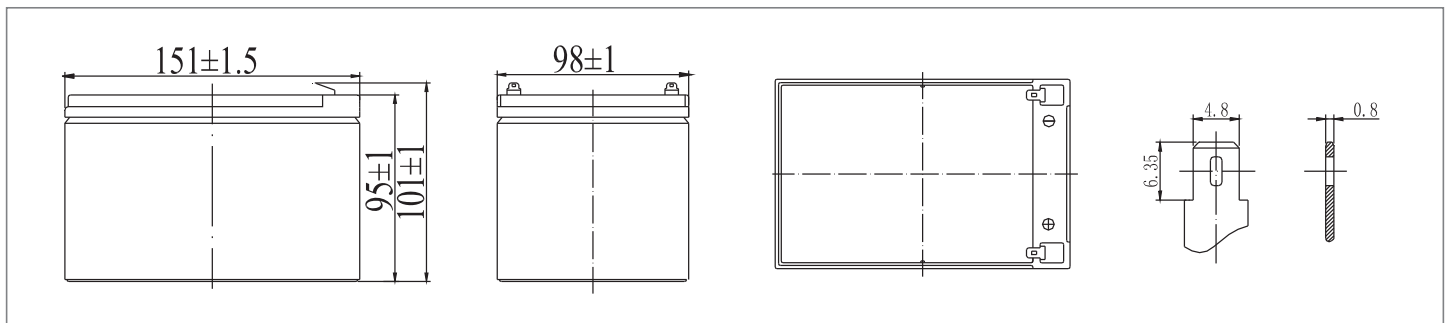
## Specifications

Nominal Voltage	12 V	
Number of cells	6	
Design Life	10 years	
Dimensions	Length	151 mm
	Width	98 mm
	Height	95 mm
	Total Height	101 mm
Approx. Weight	3.0 kg	
Nominal Capacity (25°C)	20 hours rate (0.50 A, 10.5 V)	10.0 Ah
	10 hours rate (0.93 A, 10.5 V)	9.3 Ah
	5 hours rate (1.70 A, 10.5 V)	8.5 Ah
	1 hour rate (6.50 A, 9.6 V)	6.5 Ah
Max. Discharge Current (25°C)	150 A (5s)	
Max. Charging Current (25°C)	3.0 A	
Internal Resistance	32 mOhms	
Fully Charged battery (25°C)		
Self-Discharge (25°C)	3% of capacity declined per month (average)	
	Discharge	-15~50°C
	Charge	-10~50°C
Operating Temperature Range	Storage : -20~50°C	
Short Circuit Current	320 A	
Charge Methods:	Cycle use	2.40-2.45 Vpc
	Temperature compensation	-30 mV/°C
Constant Voltage Charge (25°C)	Standby use	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)	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	8 h	10 h	20 h
1.60 V	24.0	19.0	10.6	6.50	3.55	2.55	2.04	1.73	1.12	0.94	0.51
1.65 V	23.3	18.5	10.4	6.40	3.53	2.54	2.03	1.72	1.12	0.94	0.51
1.70 V	22.3	17.9	10.1	6.24	3.50	2.52	2.01	1.71	1.11	0.94	0.50
1.75 V	21.4	17.3	9.83	6.12	3.45	2.50	2.00	1.70	1.10	0.93	0.50
1.80 V	20.2	16.3	9.47	5.93	3.36	2.43	1.94	1.65	1.07	0.91	0.49

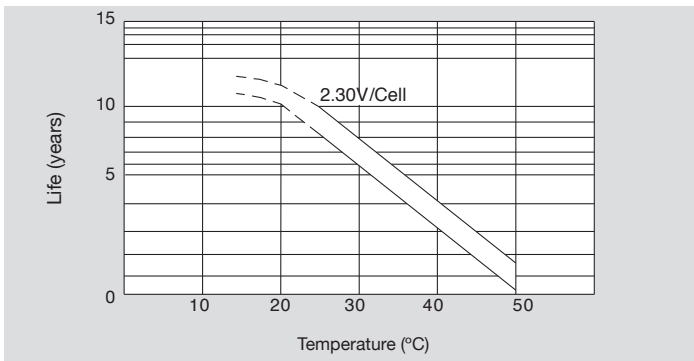
## Constant Power Discharge (Watts) at 25°C

End Voltage (Volts/Cell)	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	8 h	10 h	20 h
1.60 V	271	217	121	75.3	41.6	30.3	24.3	20.7	13.5	11.3	6.09
1.65 V	263	211	119	74.1	41.3	30.1	24.2	20.6	13.4	11.3	6.07
1.70 V	252	204	115	72.3	41.0	29.9	24.0	20.4	13.3	11.2	6.04
1.75 V	241	197	113	70.8	40.3	29.7	23.8	20.3	13.2	11.2	6.00
1.80 V	227	186	108	68.6	39.3	28.8	23.1	19.7	12.8	10.9	5.88

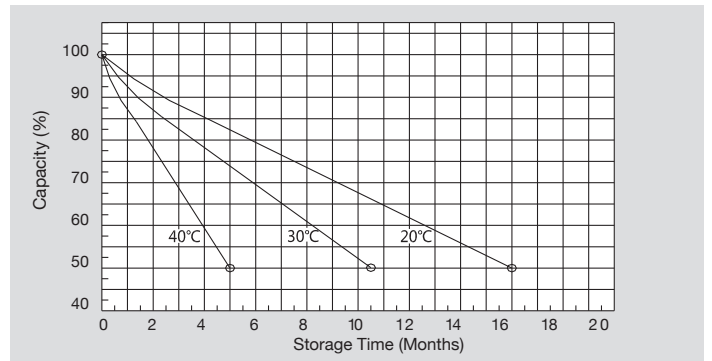
(Note) The above characteristics data are average values obtained within three charge/discharge cycles.

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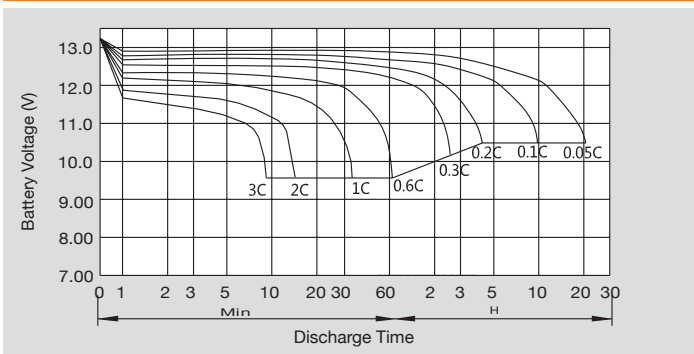
## Temperature Effects on Float Life



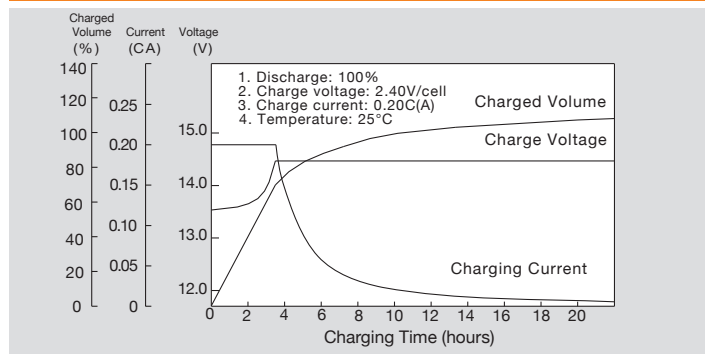
## Self Discharge Characteristics



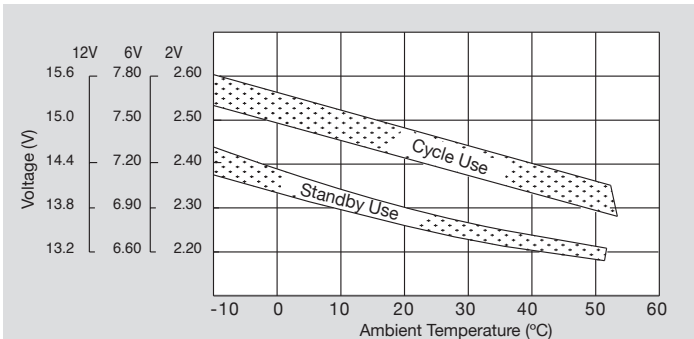
## Discharge Characteristics (25°C)



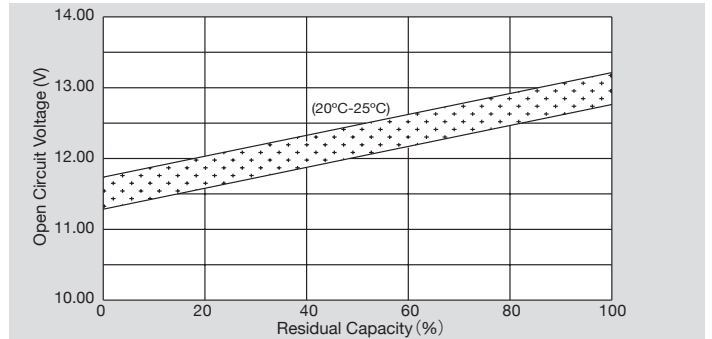
## Constant Voltage Charging Characteristic 25°C



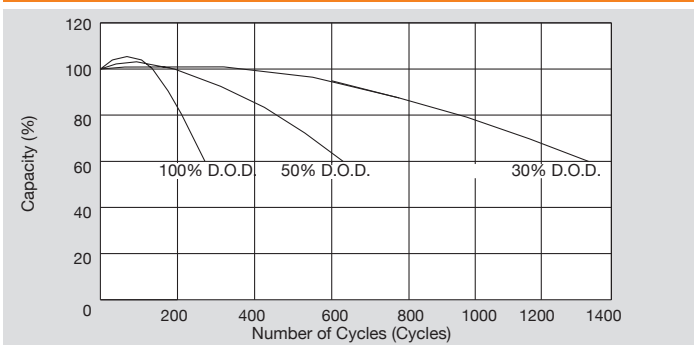
## Relationship Between Charging Voltage and Temperature



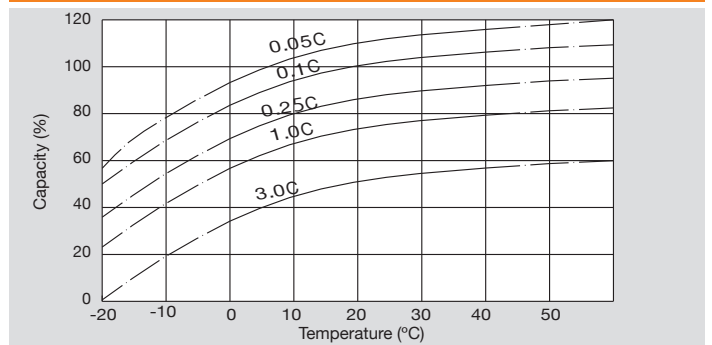
## Relationship Between Open Circuit Voltage and Residual Capacity (25°C)



## Cycle Service Life in Relation to Depth of Discharge



## Temperature Effects on Capacity



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