

# SPA 12 - 12 | 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

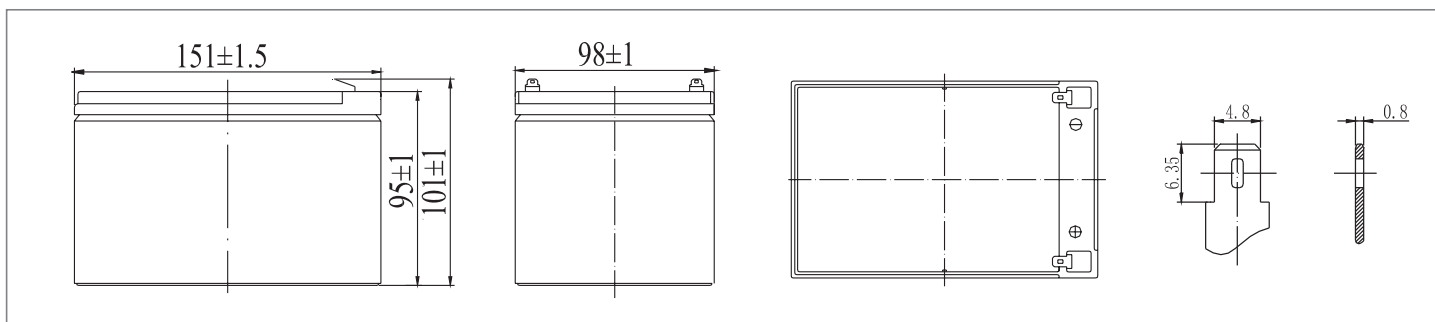
## Specifications

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	3.40 kg	
Nominal Capacity (25°C)	20 hours rate (0.60 A, 10.5 V)	12.00 Ah
	10 hours rate (1.13 A, 10.5 V)	11.30 Ah
	5 hours rate (1.92 A, 10.5 V)	9.60 Ah
	1 hour rate (7.36 A, 9.6 V)	7.36 Ah
Max. Discharge Current (25°C)	180 A (5s)	
Max. Charging Current (25°C)	38 A	
Internal Resistance	19 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	386 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)	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	27.1	21.4	12.0	7.36	4.06	2.90	2.26	1.96	1.29	1.14	0.61
1.65 V	26.2	20.9	11.8	7.25	4.03	2.88	2.25	1.95	1.28	1.14	0.60
1.70 V	25.1	20.1	11.4	7.06	4.00	2.86	2.24	1.93	1.27	1.13	0.60
1.75 V	24.1	19.4	11.1	6.92	3.94	2.84	2.22	1.92	1.26	1.13	0.60
1.80 V	22.7	18.4	10.7	6.71	3.84	2.76	2.15	1.86	1.22	1.11	0.56

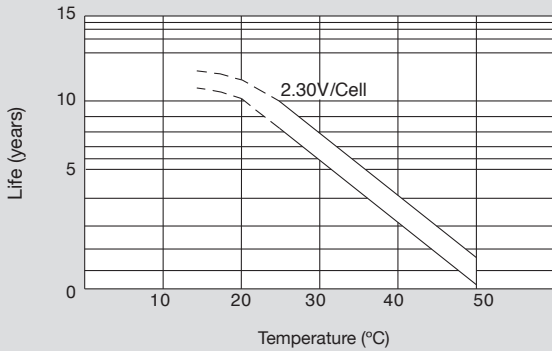
## Constant Power Discharge (Watts) at 25°C

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	305	244	138	85.2	47.5	34.5	27.0	23.4	15.4	13.7	7.29
1.65 V	296	238	135	83.9	47.2	34.3	26.8	23.2	15.3	13.7	7.26
1.70 V	284	229	131	81.8	46.8	34.0	26.6	23.1	15.2	13.6	7.21
1.75 V	271	221	127	80.2	46.1	33.8	26.4	22.9	15.1	13.5	7.20
1.80 V	256	210	123	77.7	44.9	32.8	25.6	22.2	14.7	13.3	6.77

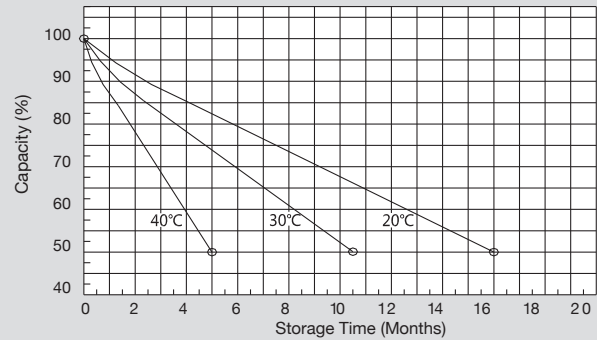
(Note) The above characteristics data are average values obtained within three charge/discharge cycles.

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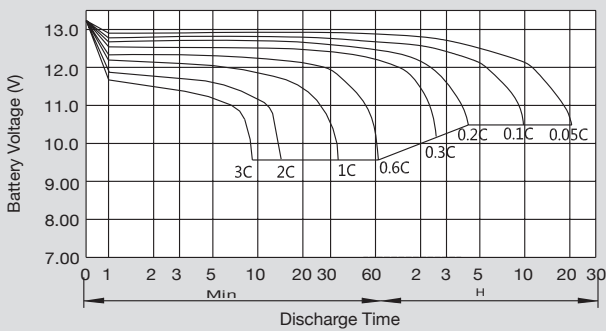
## Temperature Effects on Float Life



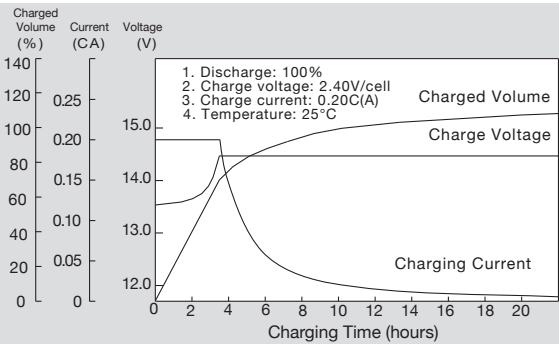
## Self Discharge Characteristics



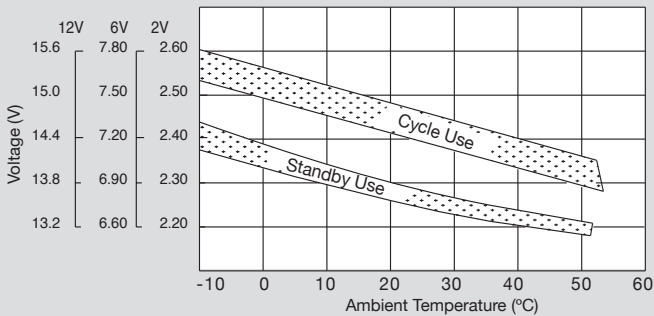
## Discharge Characteristics (25°C)



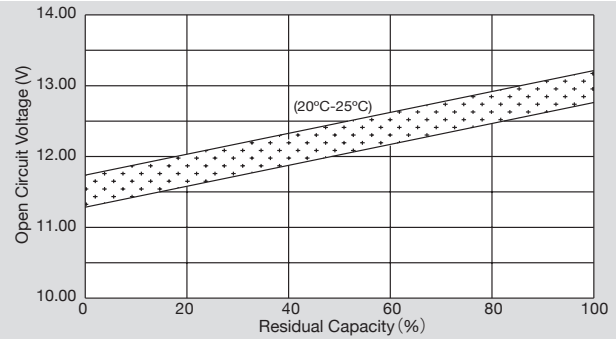
## Constant Voltage Charging Characteristic 25°C



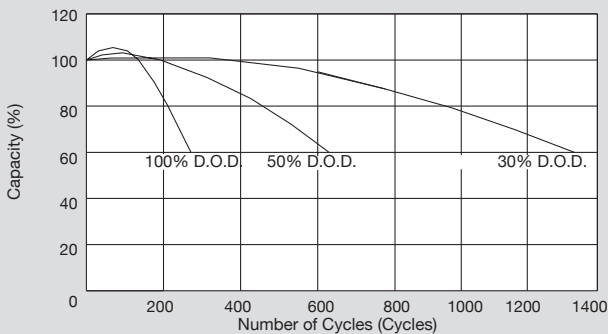
## Relationship Between Charging Voltage and Temperature



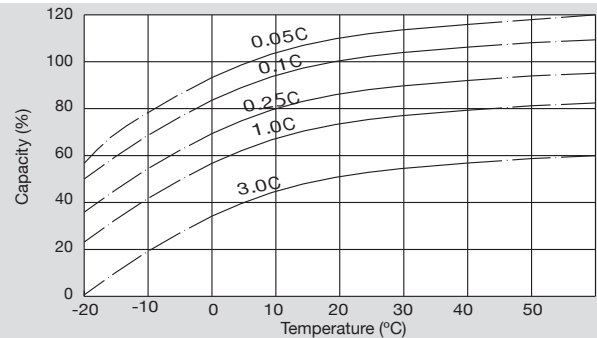
## Relationship Between Open Circuit Voltage and Residual Capacity (25°C)



## Cycle Service Life in Relation to Depth of Discharge



## Temperature Effects on Capacity



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