

# SPA 12 - 2C | VRLA Battery



## Specifications

Nominal Voltage	12 V		
Number of cells	6		
Design Life	10 years		
Dimensions	Length	144 mm	
	Width	24 mm	
	Height	65 mm	
	Total Height	65 mm	
Approx. Weight	0.65 kg		
Nominal Capacity (25°C)	20 hours rate (0.100 A, 10.5 V)	2.00 Ah	
	10 hours rate (0.191 A, 10.5 V)	1.91 Ah	
	5 hours rate (0.340 A, 10.5 V)	1.70 Ah	
	1 hour rate (1.300 A, 9.6 V)	1.30 Ah	
Max. Discharge Current (25°C)	10 A (5s)		
Max. Charging Current (25°C)	0.6 A		
Internal Resistance	70 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	195 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	

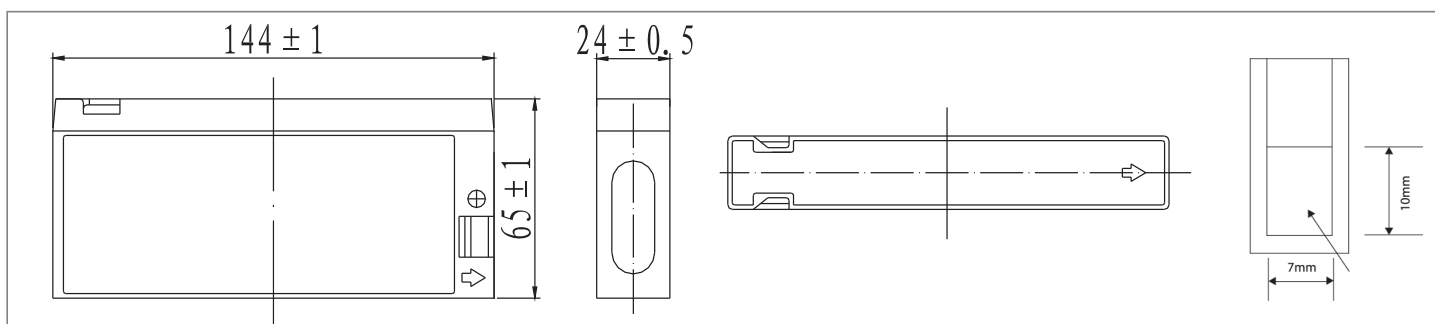
## Applications

- 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

## 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	4.80	3.80	2.13	1.30	0.71	0.51	0.41	0.35	0.225	0.184	0.104
1.65 V	4.65	3.71	2.08	1.28	0.71	0.51	0.40	0.35	0.225	0.144	0.104
1.70 V	4.46	3.58	2.01	1.25	0.70	0.50	0.40	0.34	0.223	0.188	0.101
1.75 V	4.28	3.45	1.96	1.23	0.69	0.50	0.40	0.34	0.219	0.191	0.100
1.80 V	4.04	3.26	1.89	1.19	0.68	0.49	0.39	0.33	0.213	0.191	0.098

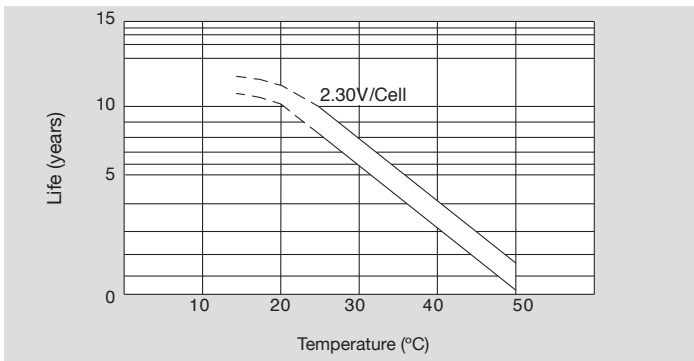
## Constant Power Discharge (Watts) at 25°C

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	54.1	43.4	24.3	15.0	8.31	6.06	4.86	4.14	2.69	2.26	1.21
1.65 V	52.5	42.3	23.8	14.9	8.26	6.03	4.83	4.11	2.68	2.26	1.21
1.70 V	50.4	40.8	23.1	14.5	8.19	5.99	4.80	4.09	2.66	2.25	1.21
1.75 V	48.3	39.4	22.5	14.1	8.06	5.94	4.76	4.06	2.64	2.24	1.20
1.80 V	45.5	37.3	21.8	13.8	7.86	5.76	4.63	3.94	2.56	2.19	1.18

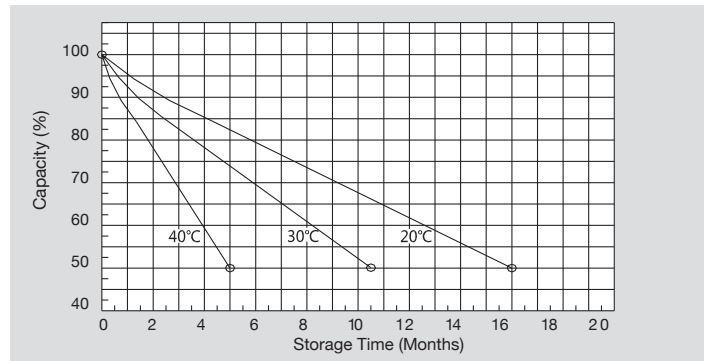
(Note) The above characteristics data are average values obtained within three charge/discharge cycles.

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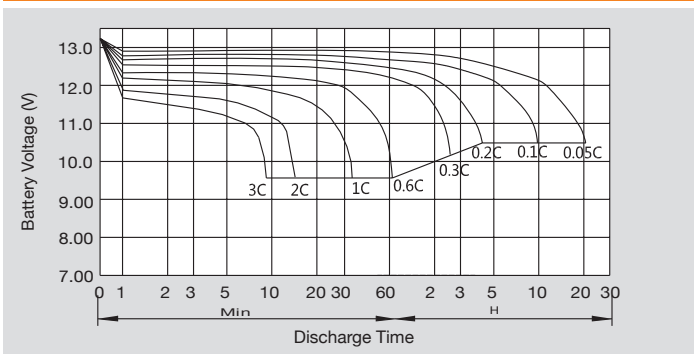
## Temperature Effects on Float Life



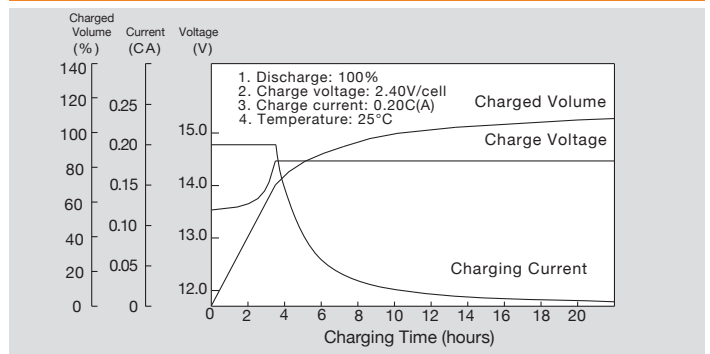
## Self Discharge Characteristics



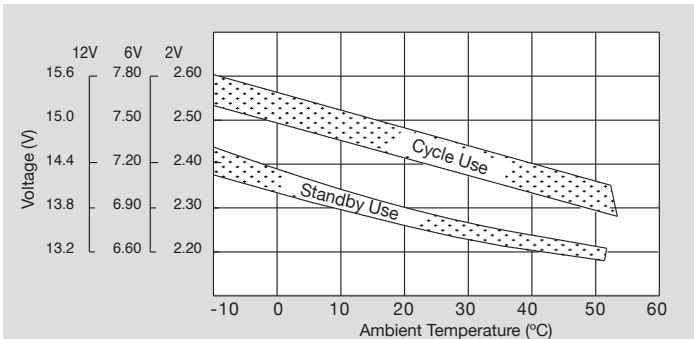
## Discharge Characteristics (25°C)



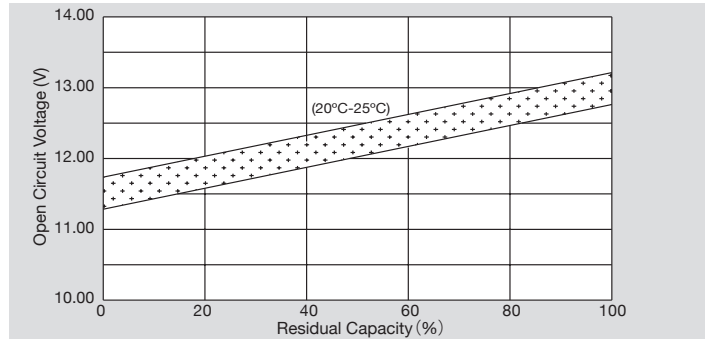
## Constant Voltage Charging Characteristic 25°C



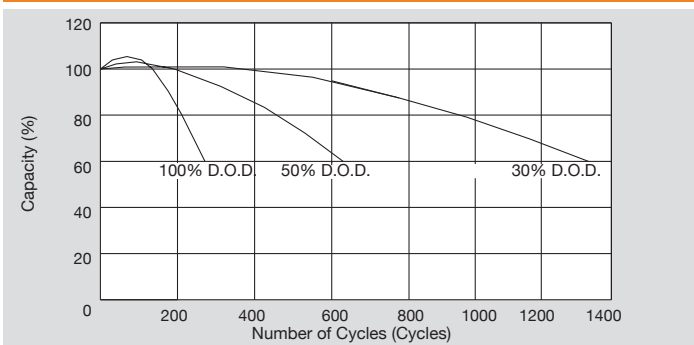
## Relationship Between Charging Voltage and Temperature



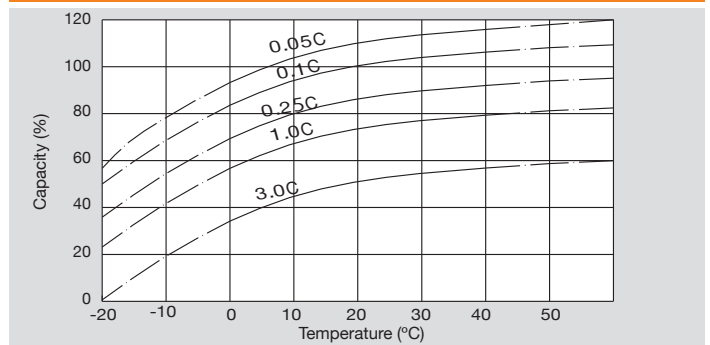
## Relationship Between Open Circuit Voltage and Residual Capacity (25°C)



## Cycle Service Life in Relation to Depth of Discharge



## Temperature Effects on Capacity



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