



VRLA Rechargeable Battery

SH4.5-12 (SH4.5-12FR)



Measures

Technology

Values

Innovation

FEATURES

- Maintenance free(no water topping-up required)
- No free acid(Non-spillable battery)
- Can be used in any orientation(excluding used inverted)
- The battery is designed for high rate usage
- Its design life is 3~5 years in floating application at 77°F/25°C
- Absorbent Glass Mat technology for efficient gas recombination
- The power density at 5 min~15min discharging rate is 30% higher than BP series

APPLICATION

- UPS
- Toy-Cars
- Fans
- Electronic Doorbells

SPECIFICATIONS

Nominal Voltage	12V	
Nominal Capacity	20 Hour Rate (225mA, 10.5V)	4.50 Ah
	10 Hour Rate (428mA, 10.5V)	4.28 Ah
	5 Hour Rate (765mA, 10.5V)	3.83 Ah
	15 Min Rate (108W, 7.8V)	2.25 Ah
	3 C Rate (13.5A, 10.5V)	1.91 Ah
Approx. Weight	1530g(3.37lbs.)	
Terminals	T1 (Faston Tab 187) T2 is optional	
Max. Discharge Current	67.5 A (5 sec.)	
Max. Charge Current	1.35 A	
Operating Temperature Range	Charge	0°C~40°C(32°F~104°F)
	Discharge	-20°C~50°C(-4°F~122°F)
	Storage	-20°C~40°C(-4°F~104°F)
Self Discharge	< 3% per month (25°C)	
Internal Resistance	≤42mΩ (Fully Charged)	

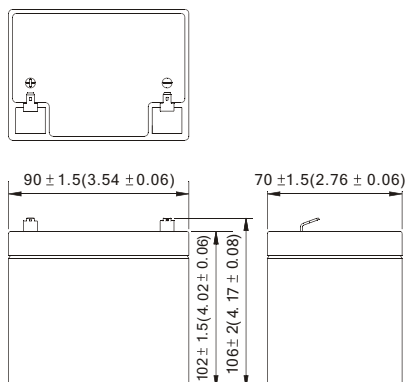


CONTAINER MATERIAL

- SH4.5-12:
ABS: UL 94-HB (Dark gray color)
- SH4.5-12FR:
ABS: UL 94-V0 (Light gray color)

 ISO 9001	 ISO 14001
 UL	 CE
• IEC61056 • GB/T 19639	• JIS C 8702

OUTER DIMENSIONS mm(inch)



Length (L)

Width (W)

Container Height (H)

Total Height (TH)

90±1.5(3.54±0.06)

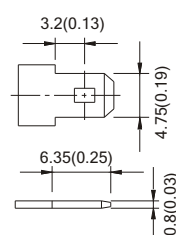
70±1.5(2.76±0.06)

102±1.5(4.02±0.06)

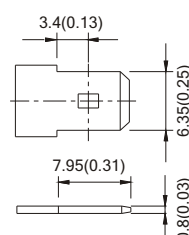
106±2.0(4.17±0.08)

TERMINAL TYPE

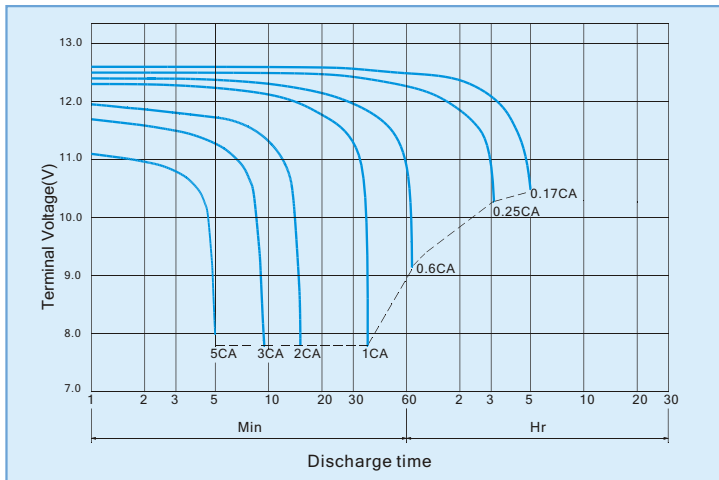
Terminal T1



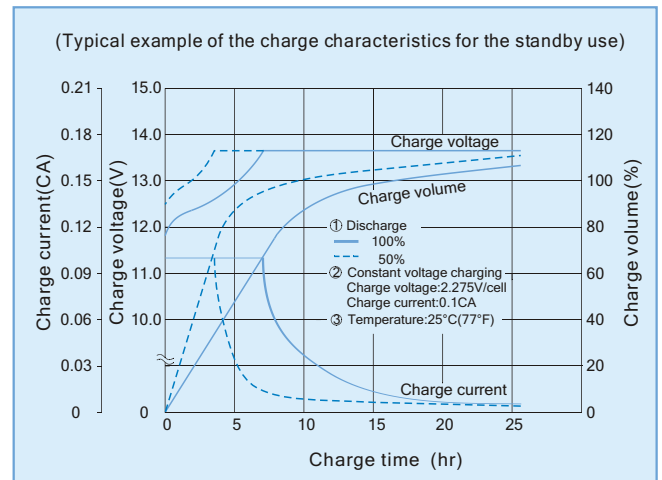
Terminal T2



SH4.5-12 (SH4.5-12FR) discharge characteristics (25°C /77°F)



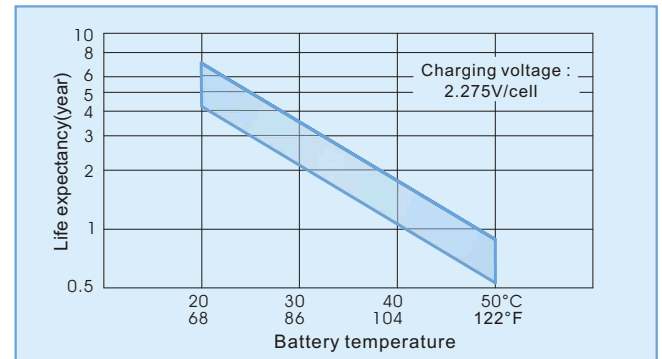
Battery Charging Characteristics



Charging Procedure

Application	Charging method	Charging Voltage at 25°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/°C /cell)	Max. charging current (CA)	Charging time 0.1CA, 25°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging (with current restriction)	2.25~2.30	-3	0.3	24	20	0~40 (32~104°F)
For cycle service		2.40~2.50	-4	0.3	16	10	

Effect Of Temperature On Long Term Float Life



Constant power discharge characteristics at 25 °C/77 °F

Unit: W

F.V. (V/cell) \ Discharge Time	5 Min	10 Min	15 Min	30 Min	1 Hr	3 Hr	5 Hr	10 Hr	20 Hr
1.80V	182.6	122.7	92.0	54.4	29.75	13.26	8.96	4.99	2.66
1.70V	194.2	130.6	98.3	56.8	30.49	13.45	9.18	5.14	2.70
1.60V	208.4	134.9	101.7	57.2	31.45	13.50	9.23	5.15	2.71
1.50V	217.2	138.5	104.8	58.4	32.13	13.62	9.26	5.16	2.72
1.40V	223.9	140.3	107.5	59.2	32.37	13.67	9.29	5.17	2.73
1.30V	224.1	141.2	108.0	59.5	32.52	13.68	9.30	5.17	2.73

Constant current discharge characteristics at 25 °C/77 °F

Unit: A

F.V. (V/cell) \ Discharge Time	5 Min	10 Min	15 Min	30 Min	1 Hr	3 Hr	5 Hr	10 Hr	20 Hr
1.80V	16.45	10.80	8.00	4.61	2.50	1.105	0.747	0.416	0.222
1.70V	17.81	11.50	8.55	4.81	2.56	1.121	0.765	0.428	0.225
1.60V	19.12	11.88	8.84	4.85	2.64	1.125	0.769	0.429	0.226
1.50V	19.93	12.19	9.11	4.95	2.70	1.135	0.772	0.430	0.227
1.40V	20.54	12.42	9.35	5.02	2.72	1.139	0.774	0.431	0.228
1.30V	20.56	12.43	9.39	5.04	2.73	1.140	0.775	0.431	0.228

All data shall be changed without prior notice, BB reserves the right to explain and update the information contained herein.

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