

Powered by



GP 645 ▶ 6V 4.5Ah

GP 645 is a general purpose battery up to 5 years in standby service or more than 260 cycles at 100% discharge in cycle service. As with all CSB batteries, all are rechargeable, highly efficient, leak proof and maintenance free.



MH14533(N)



ISO9001
No.:041005117



ISO 14001
NO.UM 1-12-0045

CSB-manufactured VRLA batteries are UL-recognized components under UL924 and UL1989.

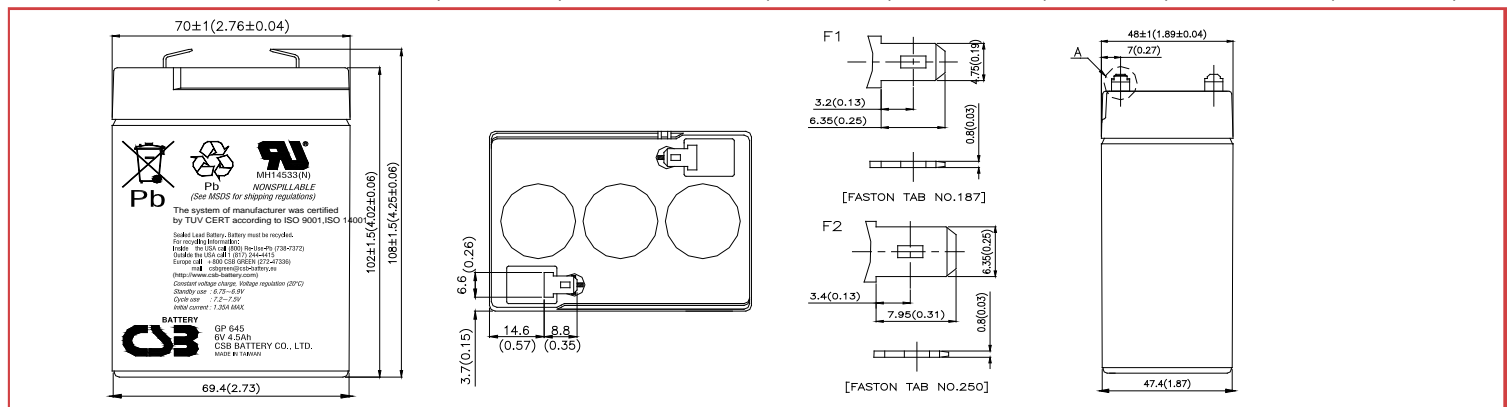
CSB is also certified by ISO9001 and ISO14001.

► Specification

Cells Per Unit	3
Voltage Per Unit	6
Capacity	4.5Ah @ 20hr-rate to 1.75V per cell @ 25°C (77°F)
Weight	Approx. 0.84 kg (1.85 lbs)
Maximum Discharge Current	60A/90A (5sec)
Internal Resistance	Approx. 19 mΩ
Operating Temperature Range	Discharge: -15°C~50°C (5°F~122°F) Charge: -15°C~40°C (5°F~104°F) Storage: -15°C~40°C (5°F~104°F)
Nominal Operating Temperature Range	25°C ± 3°C (77°F ± 5°F)
Float Charging Voltage	6.75 to 6.9VDC/unit Average at 25°C (77°F)
Recommended Maximum Charging Current Limit	1.35A
Equalization and Cycle Service	7.2 to 7.5VDC/unit Average at 25°C (77°F)
Self Discharge	CSB Batteries can be stored for more than 6 months at 25°C (77°F). Please charge batteries before using. For high temperatures the time interval will be shorter.
Terminal	F1/F2-Faston Tab 187/250
Container Material	ABS (UL 94-HB/File E50263)* Flammability resistance of (UL 94-V0/File E88637) can be available upon request.

► Dimensions :

Overall Height (H)	Container height (h)	Length (L)	Width (W)
Unit: mm (inch)	108 ± 1.5 (4.25 ± 0.06)	102 ± 1.5 (4.02 ± 0.06)	70 ± 1.0 (2.76 ± 0.04)



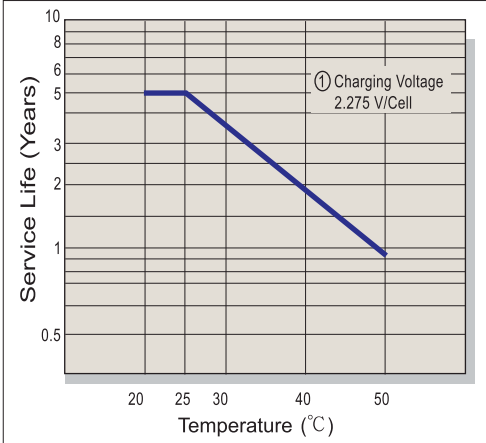
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

F.V/Time	5MIN	10MIN	15MIN	30MIN	60MIN	90MIN	2HR	3HR	5HR	8HR	10HR	20HR
1.60V	18.7	12.3	9.08	5.37	3.11	2.26	1.80	1.26	0.81	0.53	0.43	0.23
1.67V	17.6	11.8	8.88	5.31	3.09	2.25	1.79	1.24	0.80	0.53	0.43	0.23
1.70V	17.0	11.6	8.79	5.28	3.08	2.23	1.78	1.24	0.80	0.53	0.43	0.23
1.75V	16.1	11.2	8.62	5.21	3.06	2.22	1.77	1.23	0.80	0.53	0.43	0.22
1.80V	15.0	10.7	8.42	5.13	3.03	2.21	1.76	1.22	0.80	0.52	0.43	0.22
1.85V	13.8	10.3	8.21	5.04	3.00	2.18	1.74	1.21	0.79	0.52	0.42	0.22

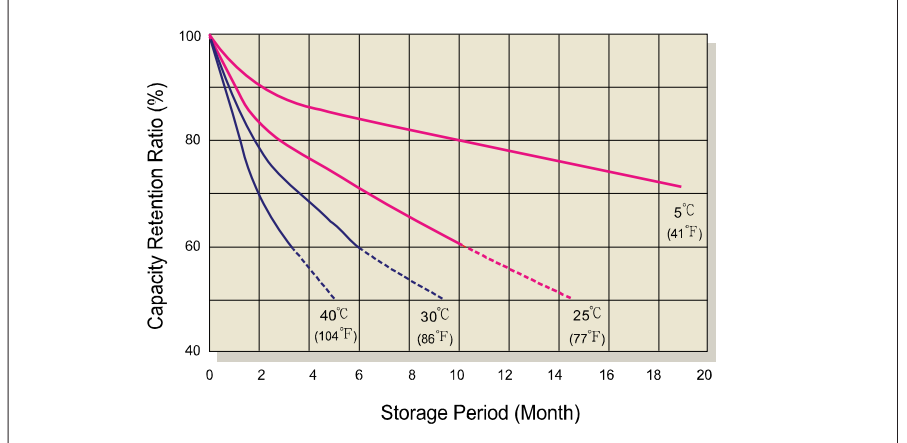
Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

F.V/Time	5MIN	10MIN	15MIN	30MIN	60MIN	90MIN	2HR	3HR	5HR	8HR	10HR	20HR
1.60V	111	72.4	54.8	32.9	19.3	14.0	11.1	8.05	5.33	3.54	2.89	1.59
1.67V	103	69.7	53.3	32.7	19.2	13.9	11.0	7.98	5.29	3.54	2.89	1.58
1.70V	100	68.6	52.5	32.4	19.1	13.8	10.9	7.95	5.24	3.52	2.88	1.58
1.75V	93.9	66.4	51.2	32.3	19.0	13.7	10.8	7.87	5.21	3.51	2.87	1.57
1.80V	88.5	64.1	50.0	31.8	18.8	13.5	10.7	7.85	5.16	3.48	2.85	1.56
1.85V	82.7	61.1	48.3	30.5	18.3	13.3	10.6	7.74	5.10	3.44	2.81	1.54

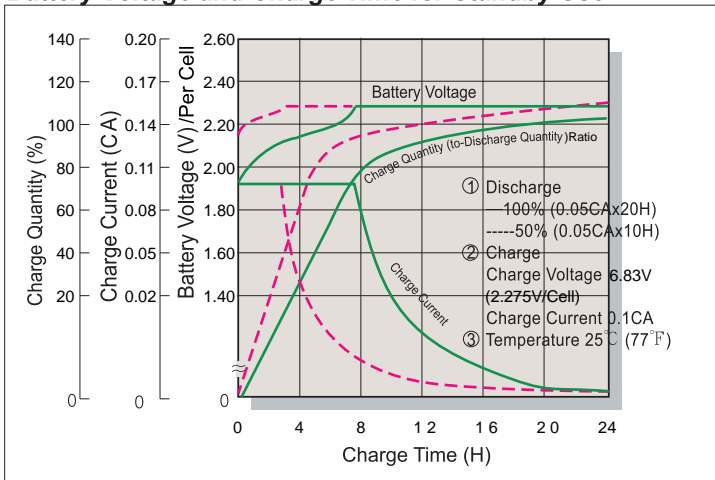
Trickle (or Float) Service Life



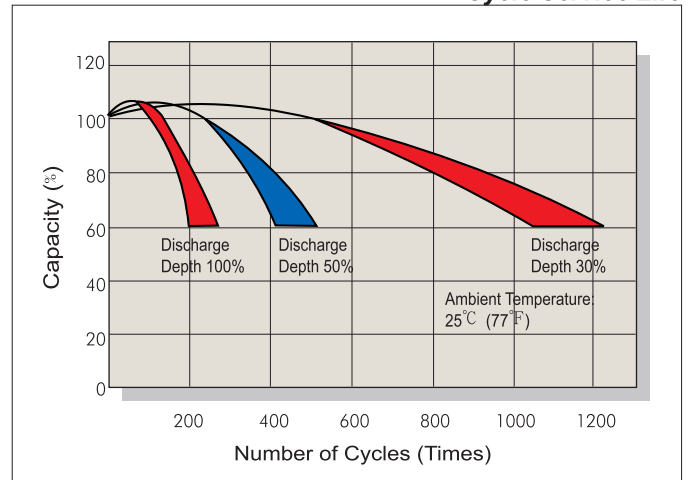
Capacity Retention Characteristic



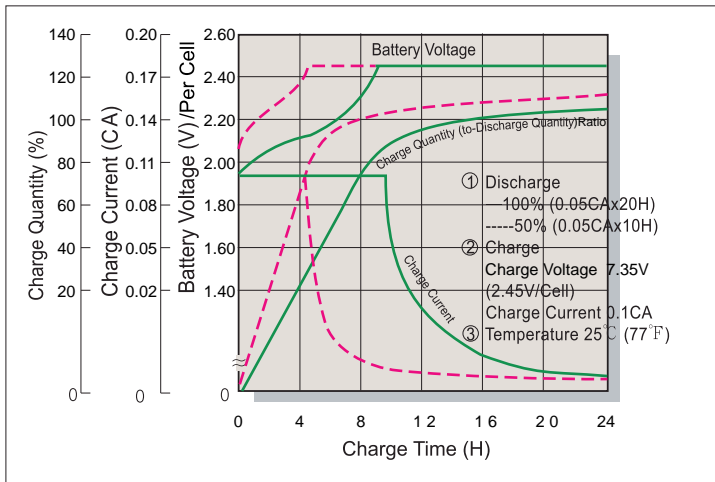
Battery Voltage and Charge Time for Standby Use



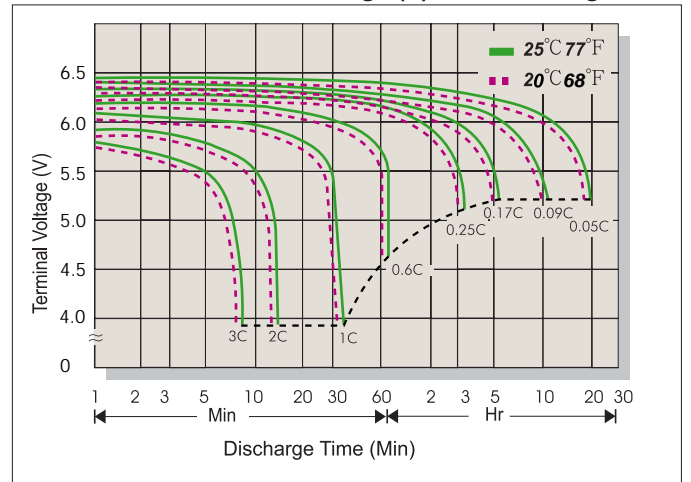
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time



Charging Procedures

Application	Charge Voltage (V/Cell)		Max. Charge Current
	Temperature	Set Point Allowable Range	
Cycle Use	25°C (77°F)	2.45 2.40 ~ 2.50	0.3C
Standby	25°C (77°F)	2.275 2.25 ~ 2.30	

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/Cell	1.75	1.70	1.60	1.30
Discharge Current (A)	0.2C > (A)	0.2C < (A) < 0.5C	0.5C < (A) < 1.0C (A)	> 1.0C

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