

FZA 33-12



Physical Specification

Part Number:	FZA 33-12
Length:	195 ± 2 mm (7.68 inches)
Width:	130 ± 2 mm (5.12 inches)
Container Height:	164 ± 2 mm (6.46 inches)
Total Height (with terminal):	180 ± 2 mm (7.01 inches)
Approx Weight:	Approx 10kg

Specifications

	Nominal Voltage	12V
	Nominal Capacity (20HR)	33AH
Terminal Type	Standard Terminal	F5
	Optional Terminal	F3 / F2 / F6 / F12
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	ABS (UL94:VO)
Rated Capacity	33.0 AH/1.65A	(20hr, 1.80V/cell, 25°C / 77°F)
	30.7 AH/3.07A	(10hr, 1.80V/cell, 25°C / 77°F)
	28.1 AH/5.61A	(5hr, 1.75V/cell, 25°C / 77°F)
	25.9 AH/8.65A	(3hr, 1.75V/cell, 25°C / 77°F)
	20.7 AH/20.7A	(1hr, 1.60V/cell, 25°C / 77°F)
Max Discharge Current	495A (5s)	
Internal Resistance	Approx 12mΩ	
Discharge Characteristics	Operating Temp. Range	Discharge: -15 ~ 50°C (5 ~ 122°F)
		Charge: 0 ~ 40°C (5 ~ 104°F)
		Storage: -15 ~ 40°C (5 ~ 104°F)
	Nominal Operating Temp. Range	25 ± 3°C (77 ± 5°F)
	Cycle Use	Initial Charging Current less than 9.9A. Voltage 14.4V ~ 15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C
	Standby Use	No limit on Initial Charging Current Voltage 13.5V ~ 13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C
Capacity affected by Temperature	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Design Floating Life at 20°C	10 Years	

Dimensions

F5 Terminal



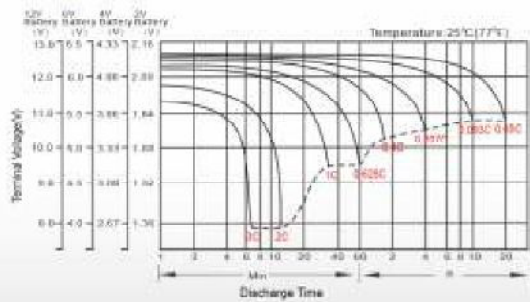
Constant Current Discharge (Amperes) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	62.8	48.3	40.0	34.6	26.7	19.69	16.6	9.81	7.68	6.24	5.09	4.42	3.56	2.98	1.63
1.80V/cell	84.4	61.7	48.3	40.9	31.5	22.9	18.6	10.7	8.26	6.67	5.46	4.74	3.78	3.07	1.65
1.75V/cell	95.1	67.8	52.8	44.0	32.7	23.8	19.4	11.1	8.42	6.81	5.61	4.87	3.84	3.15	1.67
1.70V/cell	104.7	73.9	56.3	46.2	34.1	24.7	20.1	11.4	8.65	7.00	5.75	4.97	3.90	3.21	1.70
1.65V/cell	115.5	79.7	59.9	49.1	35.9	25.3	20.5	11.6	9.02	7.24	5.91	5.08	3.96	3.28	1.72
1.60V/cell	127.4	86.5	64.1	52.3	38.0	26.4	20.7	12.0	9.29	7.46	6.11	5.19	4.00	3.32	1.73

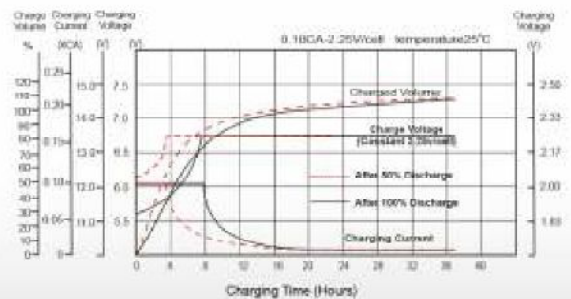
Constant Power Discharge (Watts) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	114.9	89.1	74.6	65.2	50.9	37.8	32.0	19.1	15.0	12.2	10.0	8.69	7.03	5.89	3.24
1.80V/cell	152.6	112.6	88.9	75.9	59.2	43.7	35.7	20.7	16.0	13.0	10.7	9.28	7.44	6.06	3.26
1.75V/cell	168.4	121.7	95.9	80.9	60.9	44.9	37.1	21.3	16.2	13.2	10.9	9.50	7.55	6.22	3.29
1.70V/cell	180.3	129.6	101.0	84.3	63.1	46.5	38.2	21.8	16.7	13.5	11.2	9.69	7.65	6.34	3.35
1.65V/cell	196.0	138.6	106.6	88.9	66.0	47.2	38.8	22.0	17.3	13.9	11.4	9.87	7.75	6.46	3.39
1.60V/cell	211.2	147.1	112.1	93.7	69.2	49.0	39.0	22.9	17.7	14.3	11.8	10.0	7.81	6.52	3.40

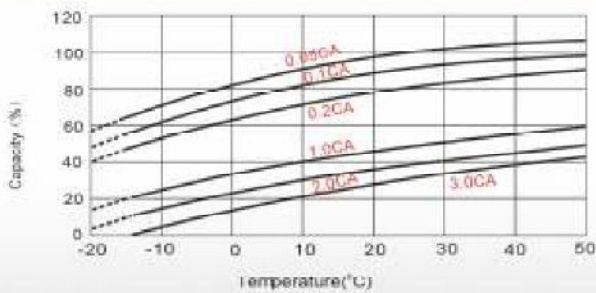
Discharge Characteristics



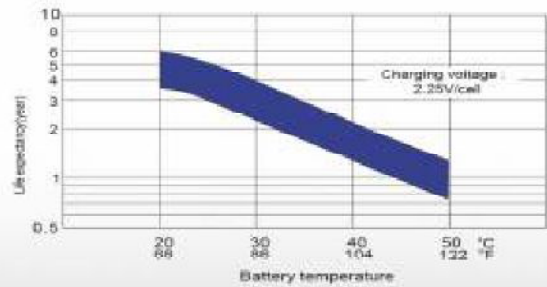
Float Charging Characteristics



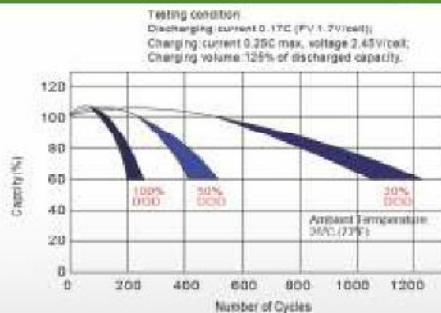
Temperature Effects in Relation to Battery Capacity



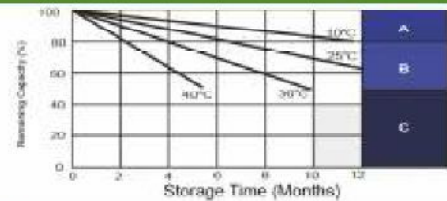
Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics



- A** No supplementary required.
(Control supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Control charging way as below:
1. Charged for about 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2. Charged for about 20 hours at limited current 0.25CA and constant voltage 2.35V/cell.
3. Charged for 8 - 10 hours at limited current 0.31 CA.
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing if this is reached.