

FZA 60-12

12V 60AH

General



FZA 60-12 / VRLA GEL



Physical Specification

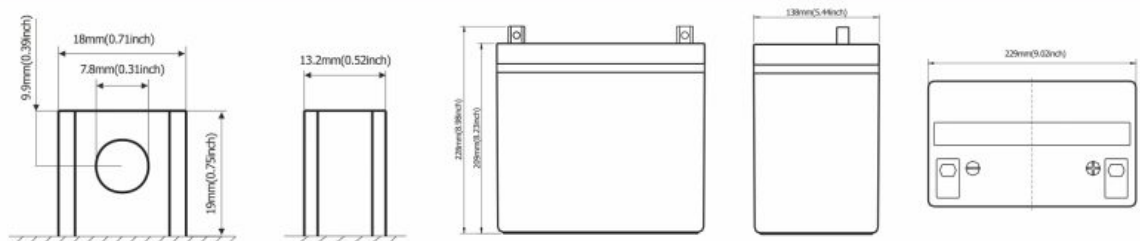
Part Number	FZA 60-12
Length	229 ± 2 mm
Width	138 ± 2 mm
Container Height	209 ± 2 mm
Total Height (with terminal)	228 ± 2 mm

Specifications

	Nominal Voltage	12V
	Nominal Capacity 20HR)	60 AH
Terminal Type	Standard Terminal	F9
	Optional Terminal	F6
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	ABS(UL94:VO)
Rated Capacity	20hr, 1.80V/cell, 25°C	61.0 AH/2.8A
	10hr, 1.80V/cell, 25°C	52.25 AH/5.225A
	5hr, 1.75V/cell, 25°C	46.75 AH/9.35A
	1hr, 1.60V/cell, 25°C	33.0 AH/33.0A
Max Discharge Current	16.5A	
Internal Resistance	0.006mΩ	
Discharge Characteristics	Operating Temp. Range	Discharge: -15 ~ 50°C
		Charge: 0 ~ 40°C
		Storage: -15 ~ 40°C
	Nominal Operating Temp. Range	25 ± 3°C
	Cycle Use	14.4V ~ 15.0V Temp. Coefficient -24mV/°C
	Standby Use	No limit on Initial Charging Current Voltage 13.6V ~ 13.8V Temp. Coefficient -18mV/°C
Capacity affect by Temperature	40°C	103%
	25°C	100%
	0°C	86%
Design Floating Life at 20°C	15 Years	

Dimensions

F9 Terminal



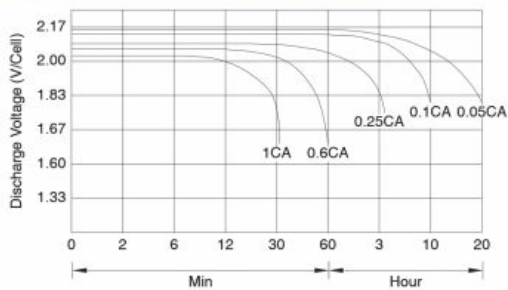
Constant Current Discharge (Amperes) at 20°C

F.V/Time	5 min	10 min	15 min	30 min	1h	3h	5h	10h	20h
1.60V/cell	193	132	96.3	57.8	36.3	15.0	10.5	5.83	2.90
1.67V/cell	173	120	93.5	56.1	36.2	15.0	10.4	5.74	2.89
1.70V/cell	164	116	90.2	55.0	36.1	15.0	10.4	5.70	2.89
1.75V/cell	146	107	85.3	53.9	35.8	14.9	10.3	5.60	2.88
1.80V/cell	132	100	81.4	52.3	35.3	14.8	10.2	5.50	2.77
1.85V/cell	100	82	70.4	48.1	34.9	14.7	10.2	5.41	2.73

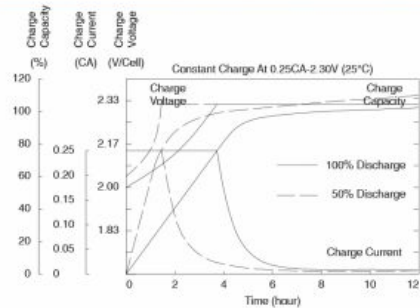
Constant Power Discharge (Watts) at 20°C

F.V/Time	5 min	10 min	15 min	30 min	1h	3h	5h	10h	20h
1.60V/cell	317	219	171	109	71.5	28.8	20.1	11.7	5.80
1.67V/cell	301	216	169	107	69.1	28.8	20.1	11.5	5.78
1.70V/cell	281	211	166	104	67.3	28.8	20.1	11.4	5.78
1.75V/cell	262	197	156	101	66.7	28.4	19.9	11.2	5.75
1.80V/cell	235	183	147	98.5	65.6	28.0	19.5	11.0	5.55
1.85V/cell	188	152	128	90.2	65.0	27.9	19.3	10.8	5.45

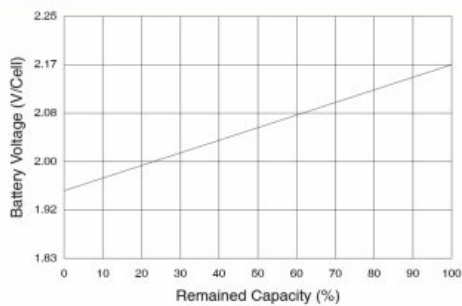
Discharge Characteristics



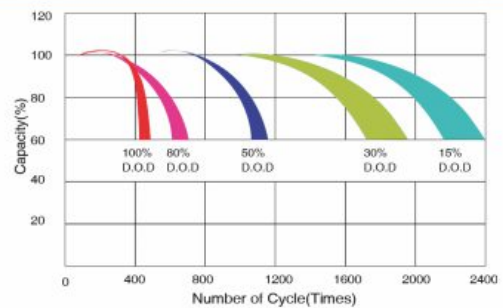
Float Charging Characteristics



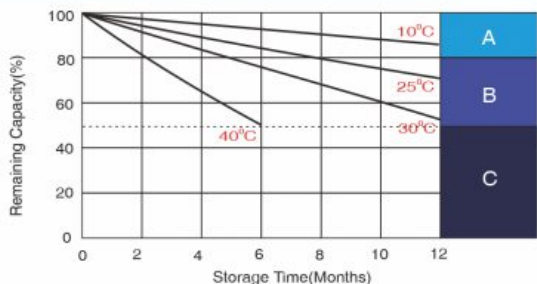
Temperature Effects in Relation to Battery Capacity



Life Characteristics of Cycle Use



Self Discharge Characteristics



- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant volatge 2.25V/cell.
2.Charged for above 20hours at limited current 0.25CA and constant volatge 2.45V/cell.
3.Charged for 8~10hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.