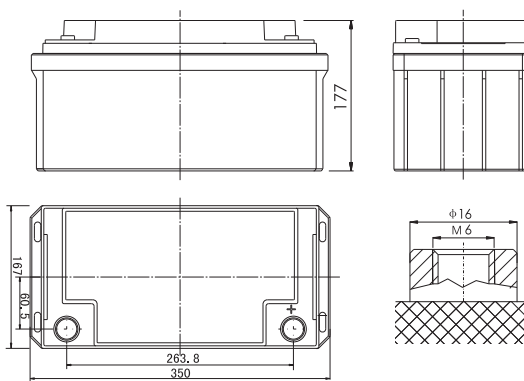


FM Series  
For General Use



Nominal Voltage		12V
Rated Capacity (20 hour rate)		65Ah
Dimensions	Total Height (with terminals)	6.97 inches(177mm)
	Height	6.97 inches(177mm)
	length	13.8 inches(350mm)
	width	6.57 inches(167mm)
Weight		Approx.44.0 Pound(20.0kg)

Capacity 77°F(25°C)		20 hour rate (3.25A)	65 Ah
		10 hour rate ( 6.10A)	61 Ah
		5 hour rate (10.4A)	52 Ah
		1hour rate (39.0A)	39 Ah
		15Minute Rate (107A)	26.8 Ah
Internal Resistance		Full charged Battery 77°F(25°C)	7.5 mΩ
Capacity affected by Temperature (20hour rate)		104°F(40°C)	102%
		77°F(25°C)	100%
		32°F(0°C)	85%
		5°F(-15°C)	65%
Self-Discharge 77°F(25°C)		Capacity after 3 month storage	91%
		Capacity after 6 month storage	81%
		Capacity after 12 month storage	60%
Max. Discharge Current 77°F(25°C)		650A(5S)	
Terminal		M2 / B5 / B11	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 19.5A	
		Voltage 14.4~14.7 V / 77°F(25°C)	
	Float	Voltage 13.5~13.8V / 77°F(25°C)	

The graph shows the variation of open circuit voltage ( $V_{oc}$ ) with ambient temperature for two modes: 'CYCLE USE' and 'STAND BY USE'. The x-axis represents Ambient temperature ( $^{\circ}\text{C}$ ) from -10 to 60. The left y-axis represents  $V_{oc}$  (V/6V) from 6.6 to 7.8. The right y-axis represents  $V_{oc}$  (V/12V) (V/CELL) from 13.2 to 15.6. Both modes show a linear decrease in  $V_{oc}$  as temperature increases.

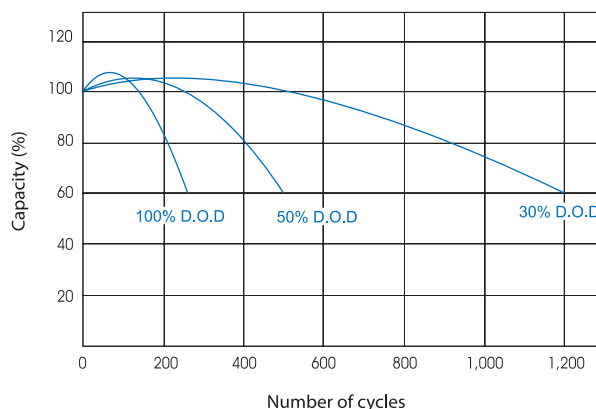
Ambient temperature ( $^{\circ}\text{C}$ )	$V_{oc}$ (V/6V) - CYCLE USE	$V_{oc}$ (V/6V) - STAND BY USE	$V_{oc}$ (V/12V) (V/CELL) - CYCLE USE	$V_{oc}$ (V/12V) (V/CELL) - STAND BY USE
-10	7.75	7.25	15.5	14.25
0	7.65	7.15	15.3	14.05
10	7.55	7.05	15.1	13.85
20	7.45	6.95	14.9	13.65
30	7.35	6.85	14.7	13.45
40	7.25	6.75	14.5	13.25
50	7.15	6.65	14.3	13.05
60	7.05	6.55	14.1	12.85

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.65	197	140	106	68.2	51.7	35.0	24.4	16.6	11.3	6.53	2.85
1.70	184	133	101	64.8	48.8	34.1	23.5	16.3	10.9	6.26	2.78
1.80	146	112	88.4	54	46.1	33.6	22.5	15.3	10.5	5.98	2.72

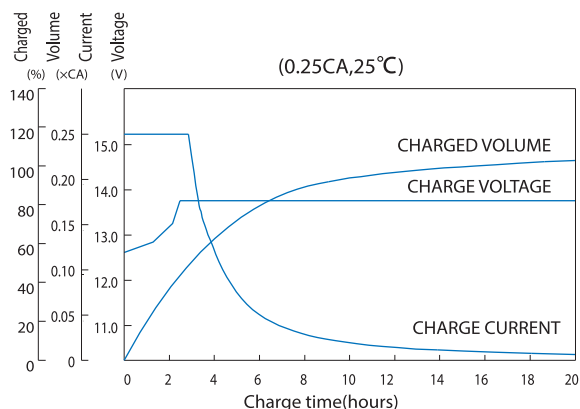
Cut off voltage V/cell	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	24h
1.60	359	254	194	127	95.2	77.2	45.3	31.8	20.9	11.8	5.35
1.65	343	251	192	124	94.3	76.4	44.7	31.5	20.7	11.6	5.33
1.67	341	250	190	123	92.9	75.6	44.2	31.4	20.6	11.5	5.31
1.70	328	246	187	121	91.5	75.0	43.6	31.2	20.3	11.3	5.29
1.75	305	230	182	111	90.0	74.8	43.1	30.8	20.1	11.20	5.27
1.80	273	214	170	104	89.0	74.4	42.4	30.1	20.0	11.00	5.25
1.85	219	177	149	96.0	82.1	69.2	41.4	29.7	19.1	10.90	4.95

The operating environment temperature above 40°C should be avoided. After long term storage, The battery actual capacity would be less than the rated capacity. Full capacity will be obtained through several charge/discharge cycles. To get the longest life, PowerUps battery should be fully charged before storage.

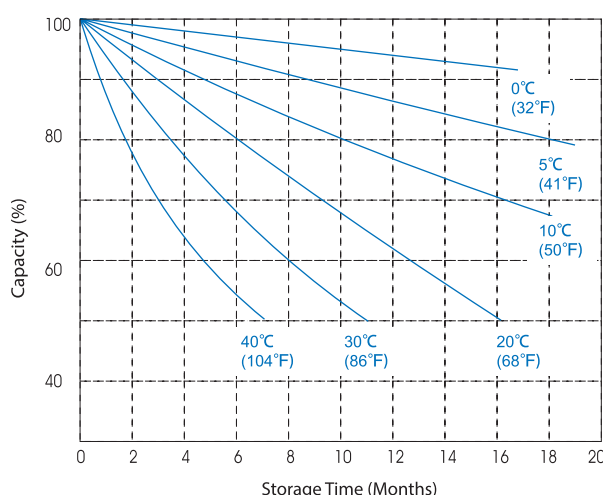
## Cycle service life in relation to depth of discharge



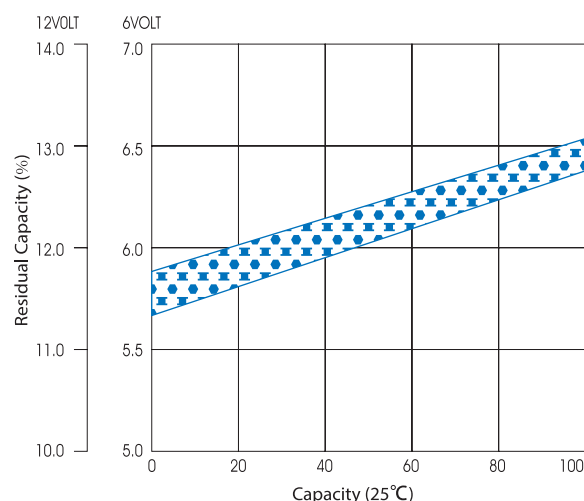
## Constant voltage charge characteristic



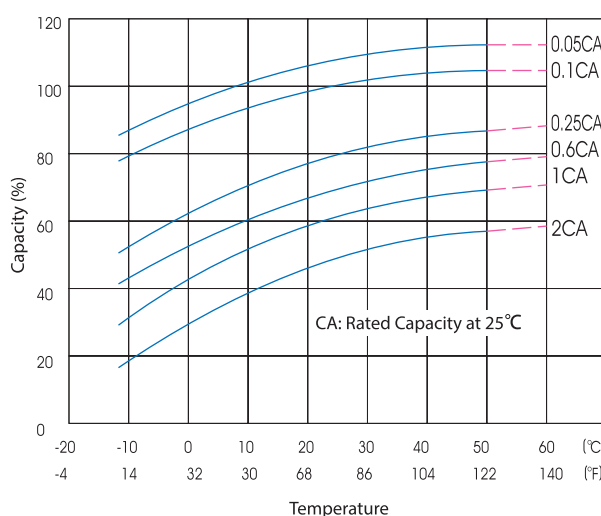
## Self-Discharge Characteristics



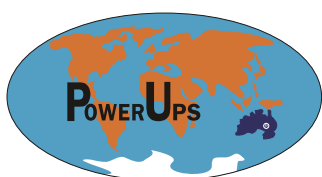
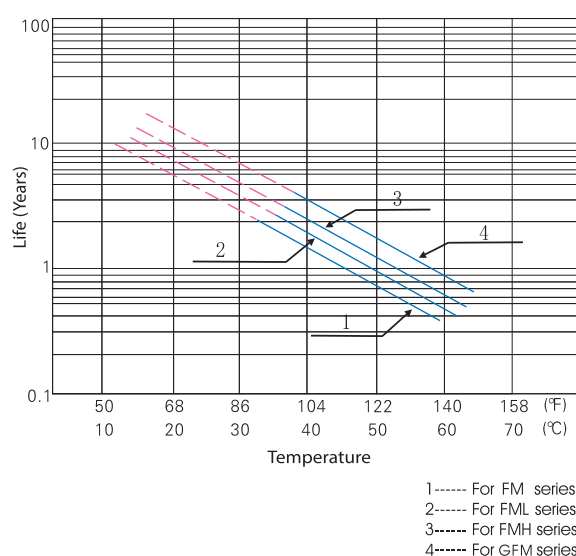
## Relationship of OCV and Residual Capacity % (25°C)



## Temperature effects on capacity



## Temperature effects float life



**Australia PowerUps**

Address : 73 Boomerang Place, Seven Hills, NSW 2147, Australia

Website : [www.powerups.com.au](http://www.powerups.com.au)

Tel : 61 2 9831 8412

Email : [enquiry@powerups.com.au](mailto:enquiry@powerups.com.au)