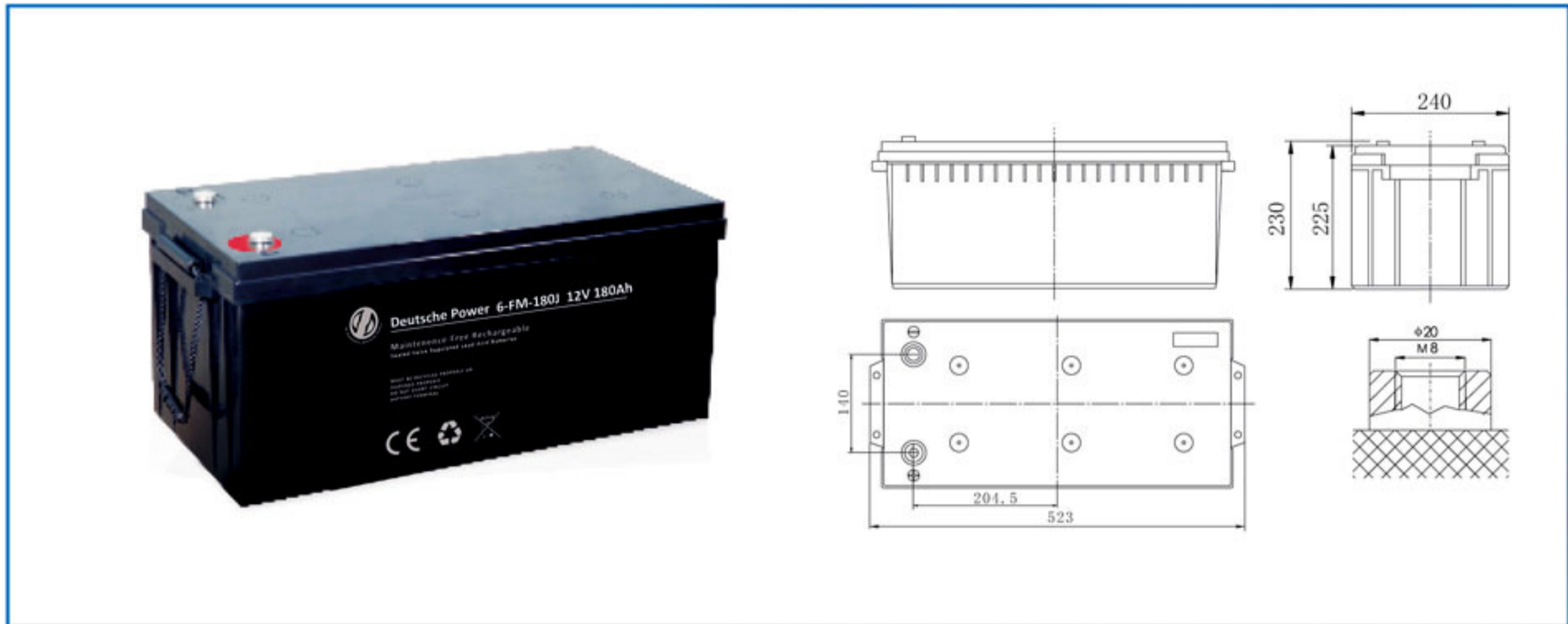


# FM/NPG-180

Deep Cycle Gel Design



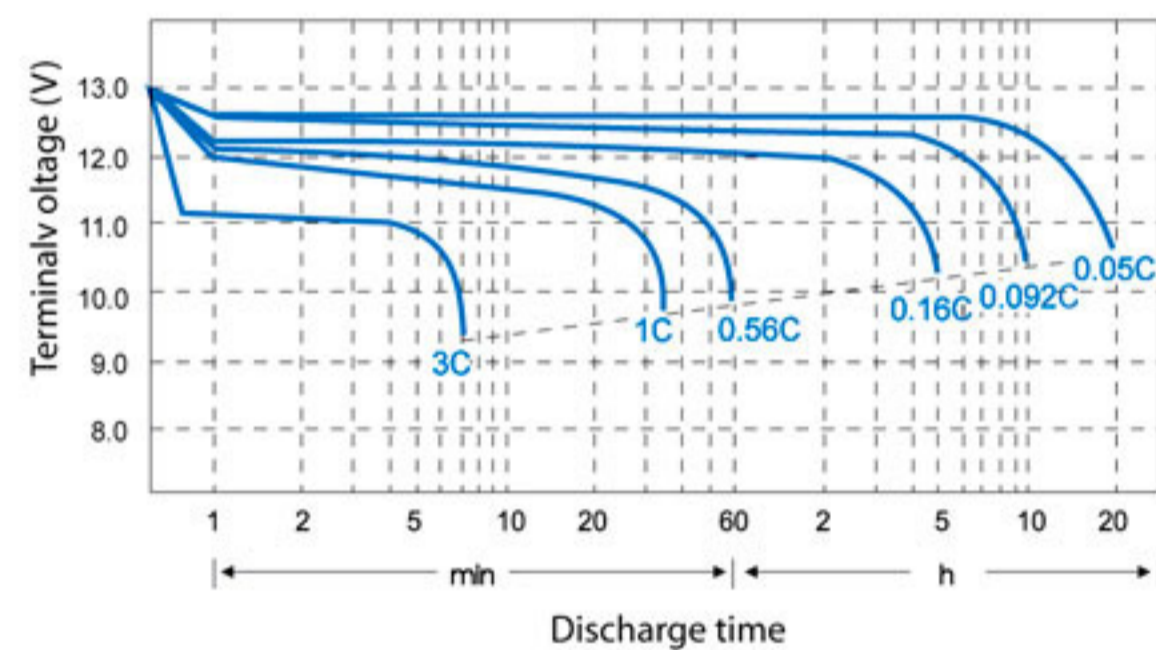
## Specifications

Nominal Voltage	12V	
Rated Capacity (20 hour rate)	180Ah	
Dimensions	Total Height (with terminals)	9.06 inches(230mm)
	Height	8.86 inches(225mm)
	length	20.59 inches(523mm)
	width	9.45 inches(240mm)
Weight	Approx.127.38 Pound(57.9kg)	

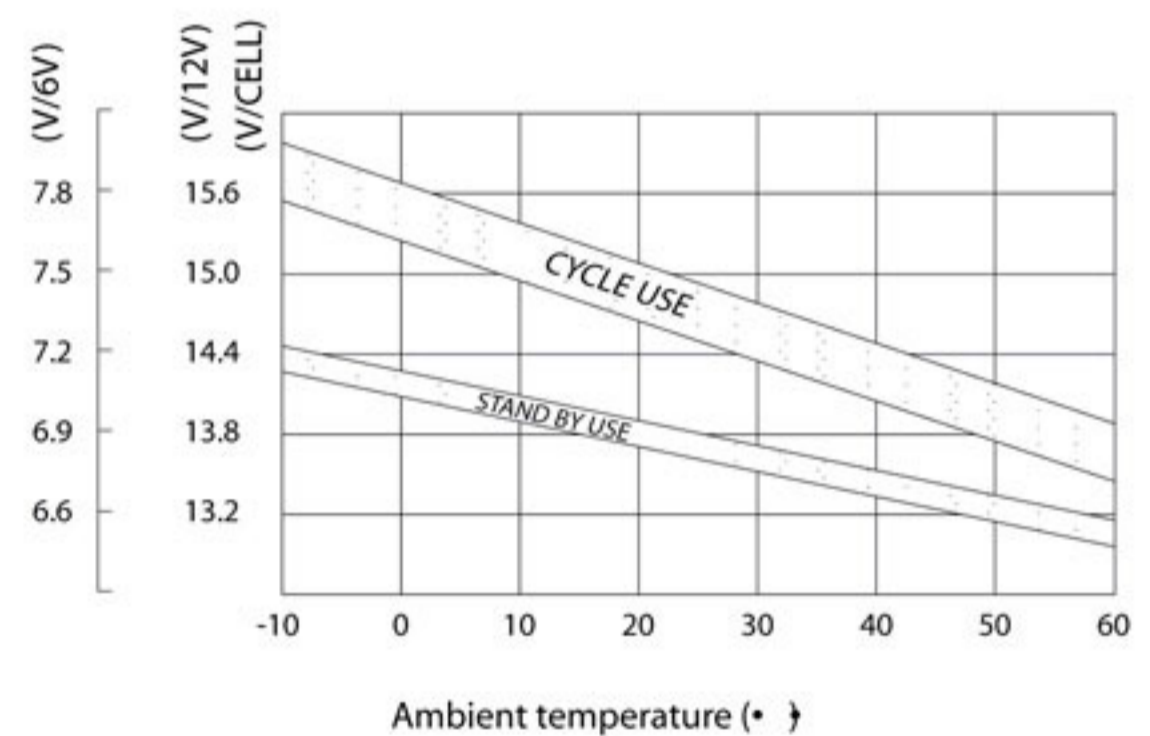
## Characteristics

Capacity 77°F (25° ↗)	20 hour rate (9.0A)	180Ah
	10 hour rate (16.6A)	166Ah
	5 hour rate (28.8A)	144Ah
	1hour rate (108A)	108Ah
	15Minute Rate (269A)	67.25Ah
Internal Resistance	Full charged Battery 77°F (25° ↗)	3MΩ
	104°F (40° ↗)	102%
Capacity affected by Temperature (20hour rate)	77°F (25° ↗)	100%
	32°F (0° ↗)	85%
	5°F (-15° ↗)	65%
Self-Discharge 77°F (25° ↗)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	81%
	Capacity after 12 month storage	60%
Max. Discharge Current 77°F (25° ↗)	1333A(5S)	
Terminal	M3	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 60A Voltage 14.4~14.7V / 77°F (25° ↗)
	Float	Voltage 13.5~13.8V / 77°F (25° ↗)

## Discharge Curves 77°F(25°C)



## Relationship between charge voltage and temperature



## Constant Current Discharge (AMPERES @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.65	498	347	269	170	129	98.1	66.9	46.4	30.8	18.3	8.01
1.7	460	328	257	159	121	92.7	65.0	45.0	30.2	17.6	7.78
1.8	363	275	220	131	115	88.2	62.0	43.5	28.9	16.6	7.52

## Constant Power Discharge (WATTS PER CELL@25°C)

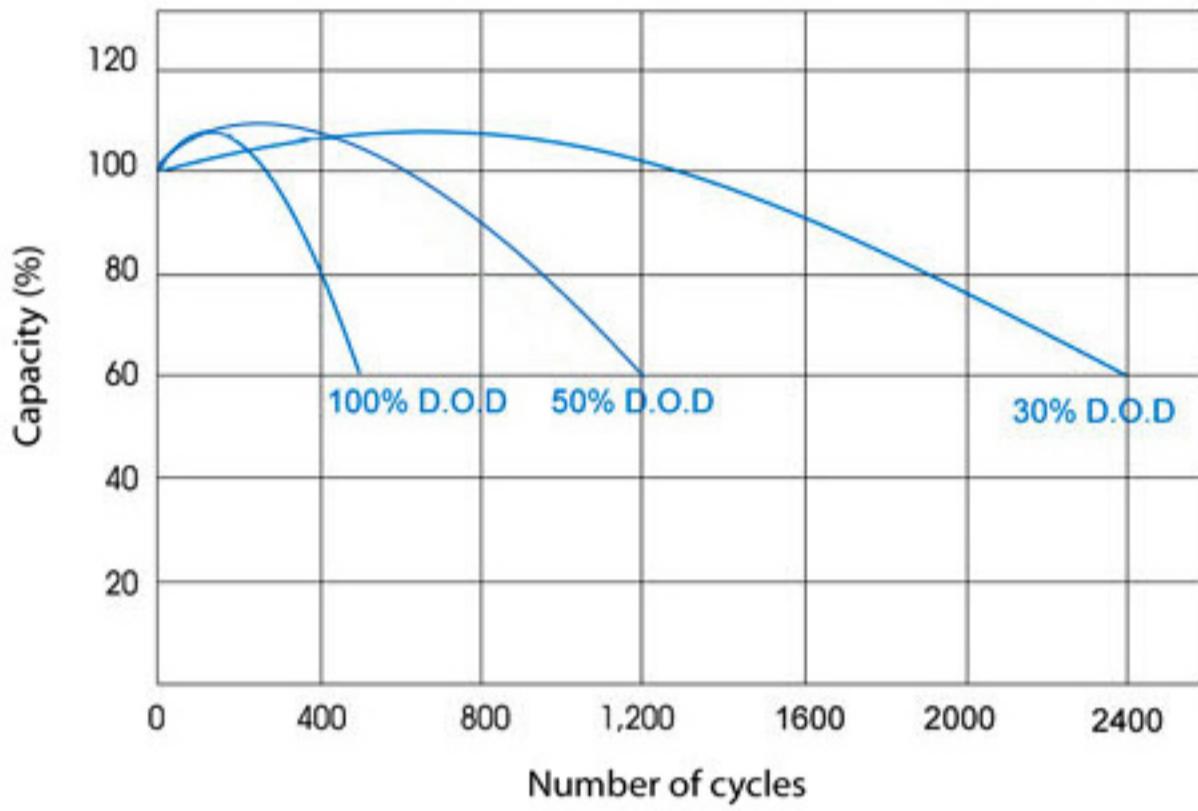
Cut off voltage V/cell	5min	10min	15min	30min	45min	1h	2h	3h	5h	10h	24h
1.6	887	627	491	314	237	208	124	86.2	56.9	33.6	14.2
1.65	869	622	487	309	234	205	122	85.1	56.7	33.1	14.0
1.67	865	617	486	304	230	201	122	84.6	56.5	32.6	14.0
1.7	817	605	476	298	227	197	121	83.9	56.3	32.4	13.9
1.75	752	566	449	266	225	194	120	83.5	55.8	31.6	13.8
1.8	676	526	422	253	221	190	117	82.9	55.3	31.0	13.6
1.85	541	437	369	231	203	186	112	80.4	51.5	29.5	13.3

# FM/NPG-180

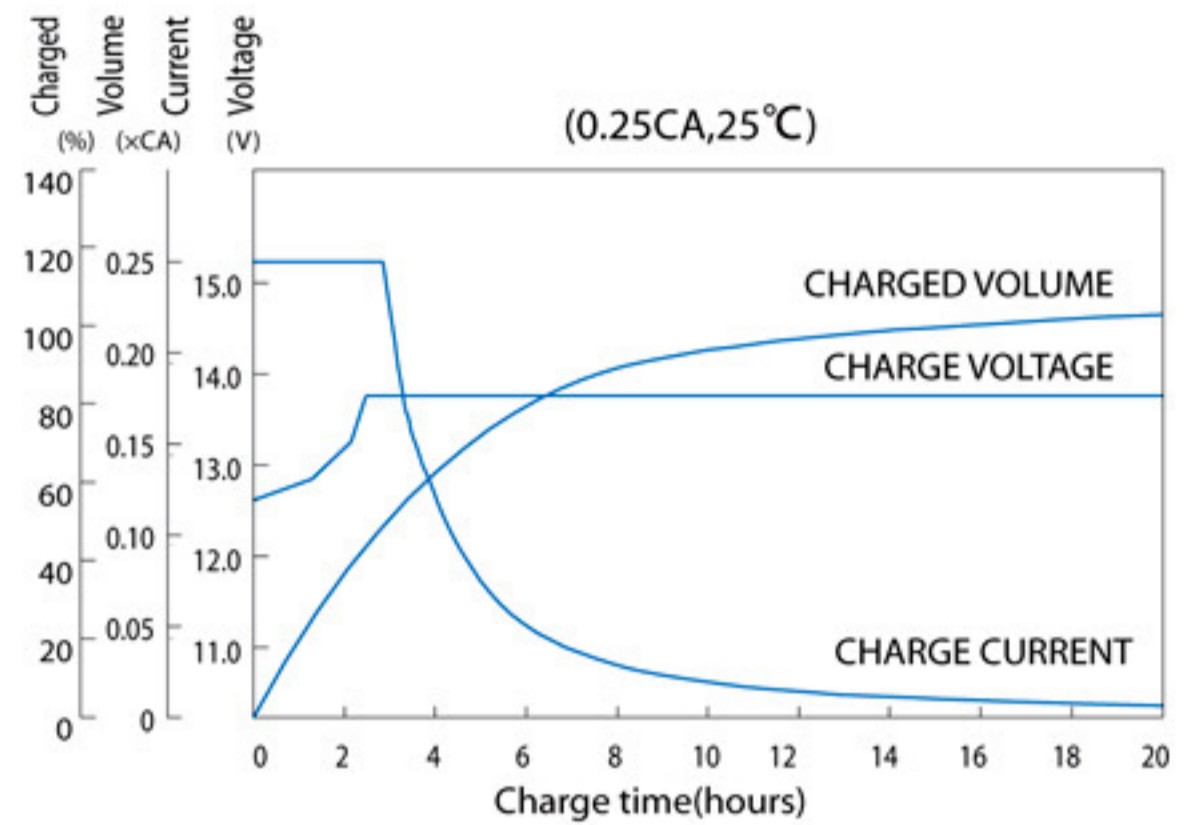
## Deep Cycle Gel Design

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, Deutsche Power battery should be fully charged before storage.

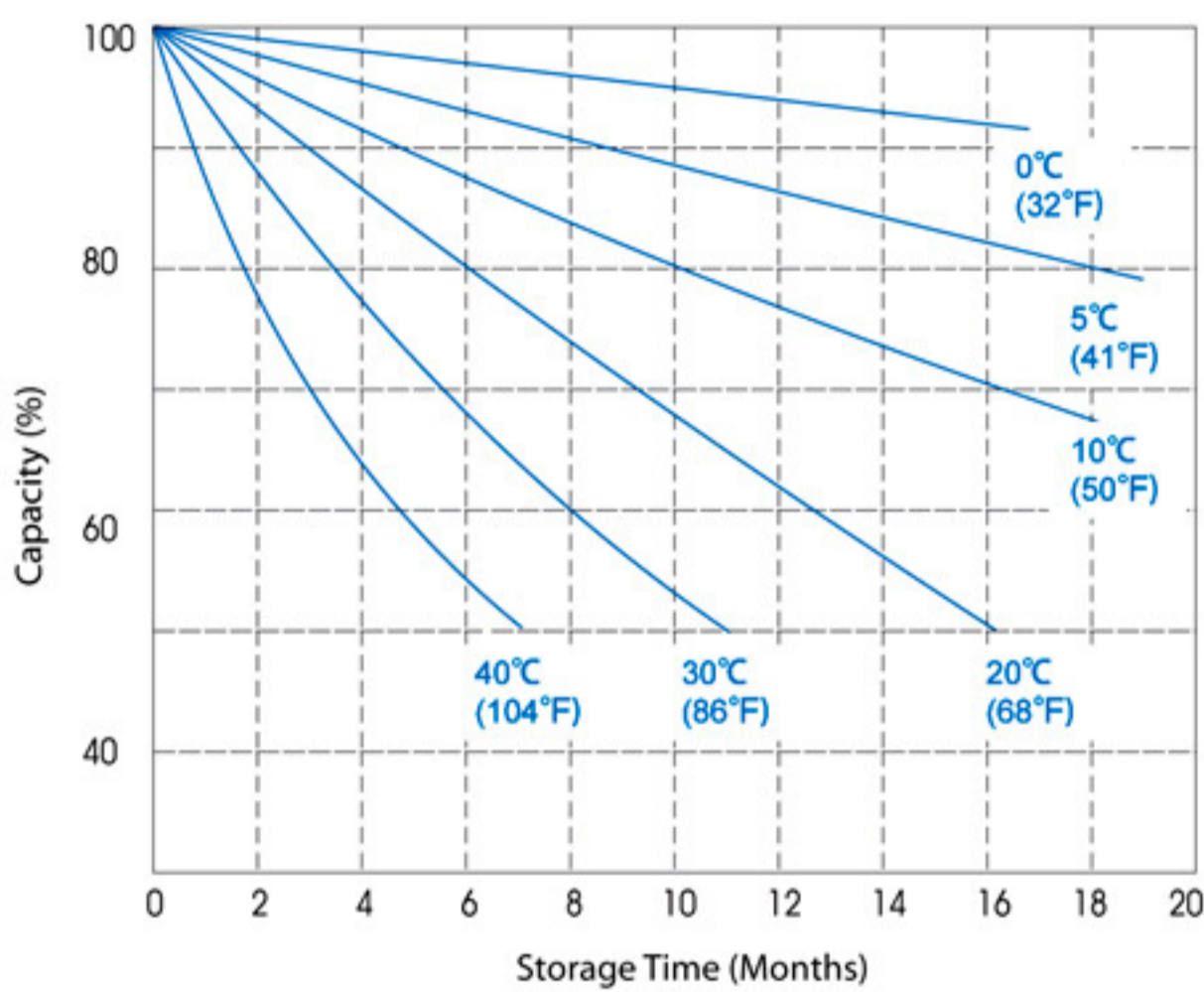
### Cycle service life in relation to depth of discharge



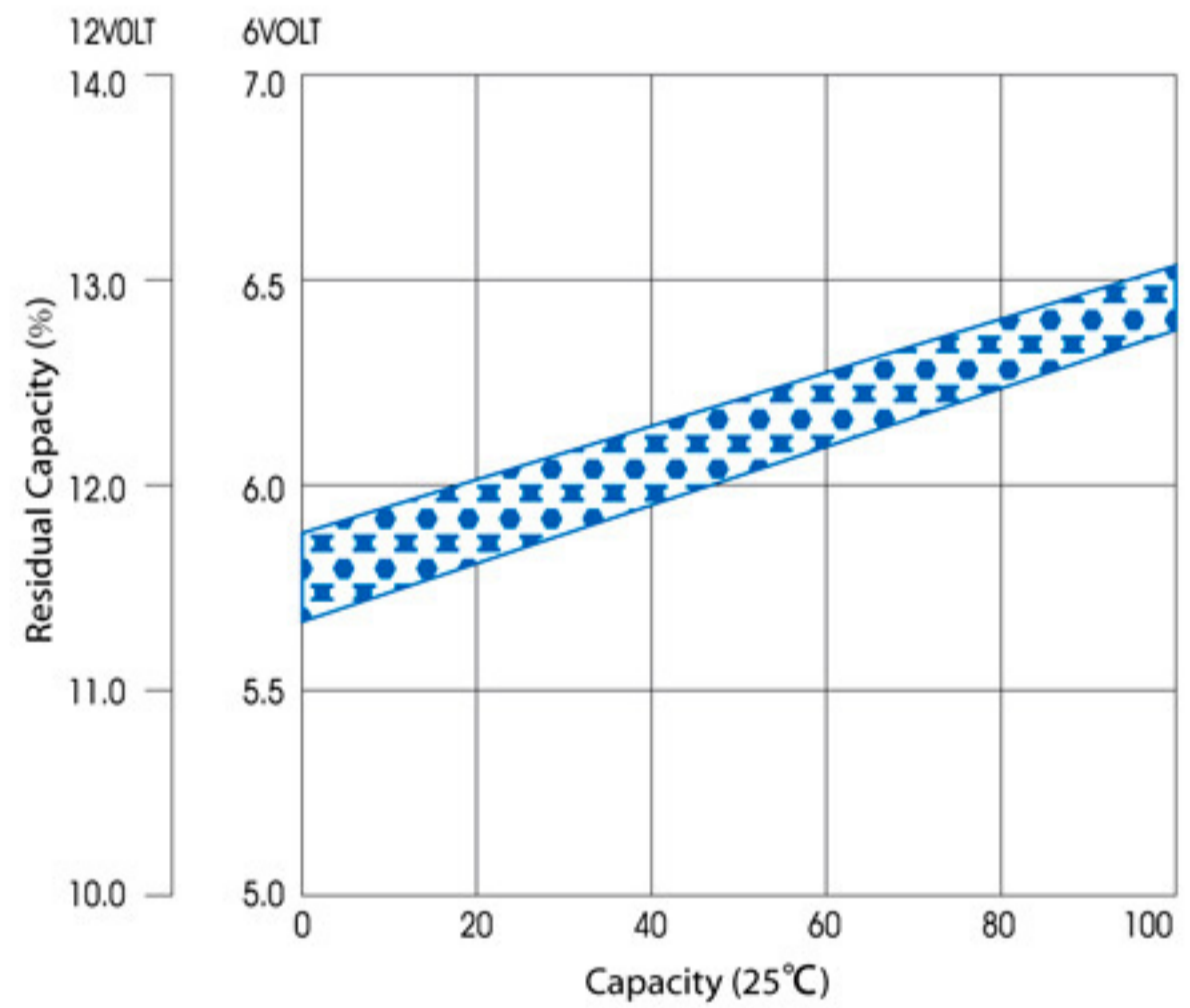
### Constant voltage charge characteristic



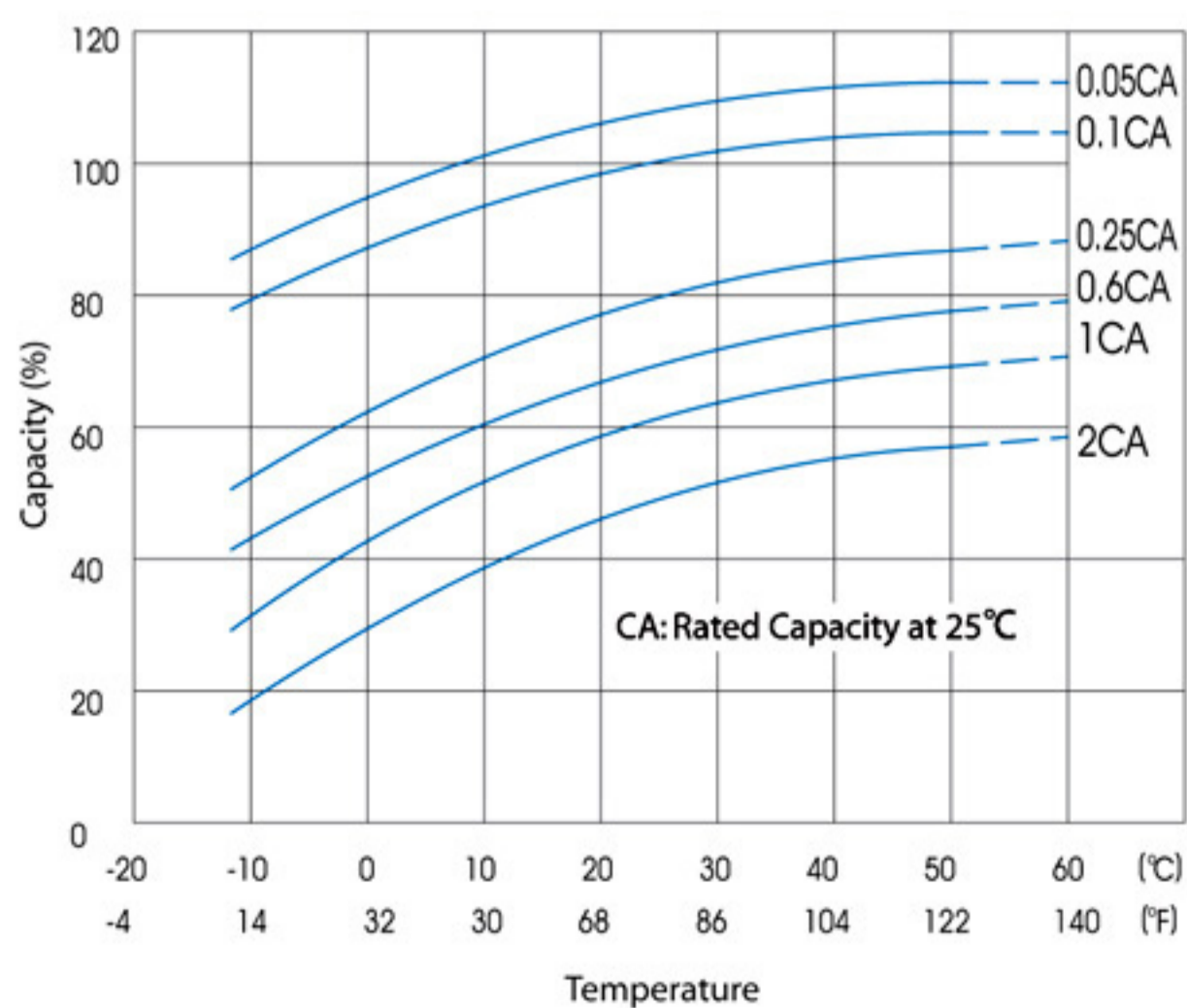
### Self-Discharge Characteristics



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



### Temperature effects on capacity



### Temperature effects float life

