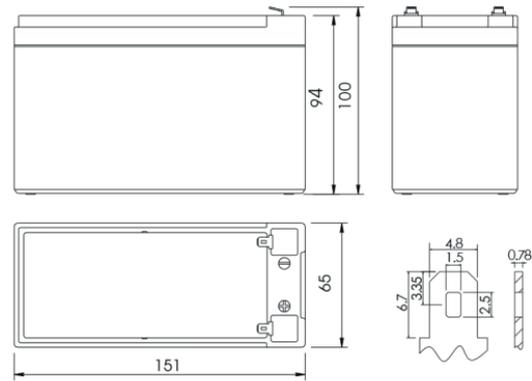


NP9-12 (12V9AH)



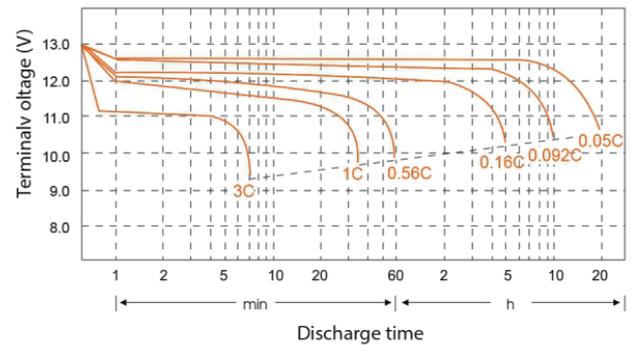
Specification

Nominal Voltage	12V	
Rated Capacity (20 hour rate)	9Ah	
Dimensions	Total Height (with terminals)	3.94 inches(100mm)
	Height	3.70 inches(94mm)
	length	5.94 inches(151mm)
	width	2.56 inches(65mm)
Weight	Approx.5.72 Pound(2.60kg)	

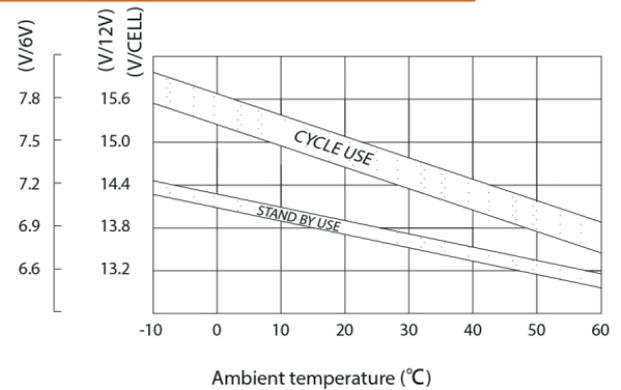
Characteristics

Capacity 77°F (25°C)	20 hour rate (0.45A)	9.0 Ah
	10 hour rate (0.83A)	8.3 Ah
	5 hour rate (1.44A)	7.2 Ah
	1hour rate (5.40 A)	5.4 Ah
	15Minute Rate (15.6 A)	3.9 Ah
Internal Resistance	Full charged Battery 77°F (25°C)	18m Ω
	104°F (40°C)	102%
Capacity affected by Temperature (20hour rate)	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)	135A(5S)	
Terminal	F1 \ F2	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 27A Voltage 14.4~14.7V / 77°F (25°C)
	Float	Voltage 13.5~13.8V / 77°F (25°C)

Discharge Curves 77°F (25°C)



Relationship between charge voltage and temperature



Constant Current Discharge (Amperes @ 25°C - 77°F)

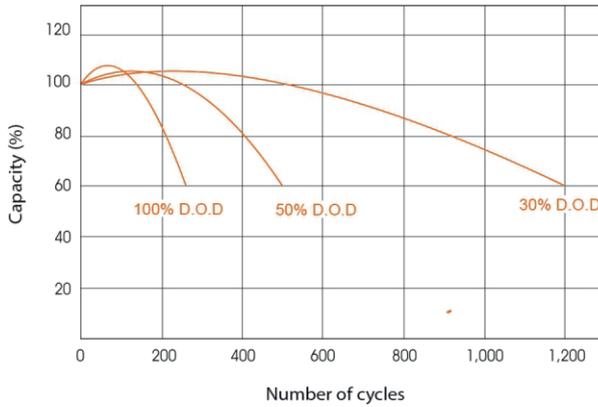
F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.60	34.3	21.8	15.6	9.72	5.72	3.36	2.32	1.80	1.48	0.850	0.462
1.65	33.5	21.2	15.1	9.46	5.62	3.24	2.28	1.76	1.46	0.830	0.458
1.70	32.0	20.3	14.5	9.28	5.51	3.20	2.26	1.75	1.46	0.830	0.454
1.75	30.6	19.4	14.2	9.18	5.40	3.16	2.26	1.73	1.44	0.830	0.450
1.80	28.8	19.3	13.9	8.92	5.30	3.06	2.22	1.71	1.42	0.810	0.440

Constant Power Discharge (Watts per Cell@25°C - 77°F)

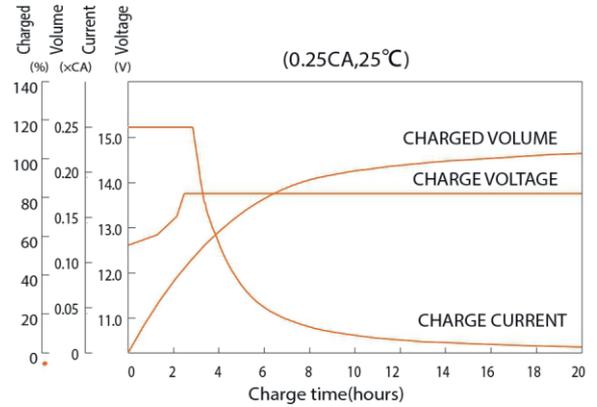
F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
1.60	63.7	40.7	30.1	18.5	10.4	6.53	4.60	3.58	2.95	1.70	0.913
1.65	62.3	39.7	29.0	18.0	10.2	6.33	4.53	3.51	2.91	1.69	0.910
1.70	59.3	38.0	27.9	17.7	10.0	6.23	4.50	3.49	2.92	1.68	0.907
1.75	57.0	36.7	27.4	17.6	9.80	6.17	4.50	3.46	2.88	1.68	0.903
1.80	53.7	36.3	26.7	17.0	9.65	6.00	4.43	3.42	2.84	1.64	0.887

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, KSTAR battery should be fully charged before storage.

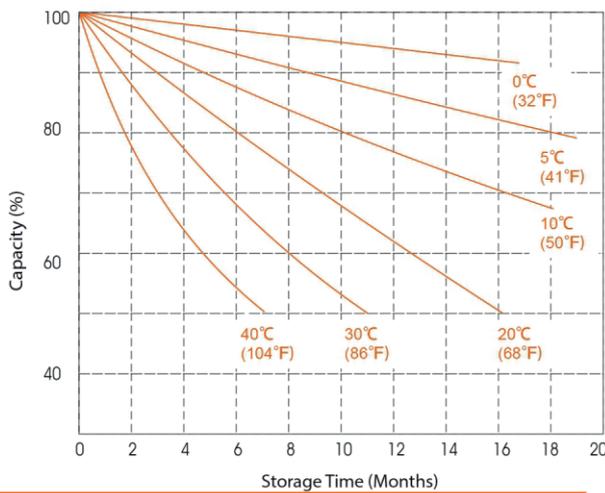
Cycle service life in relation to depth of discharge



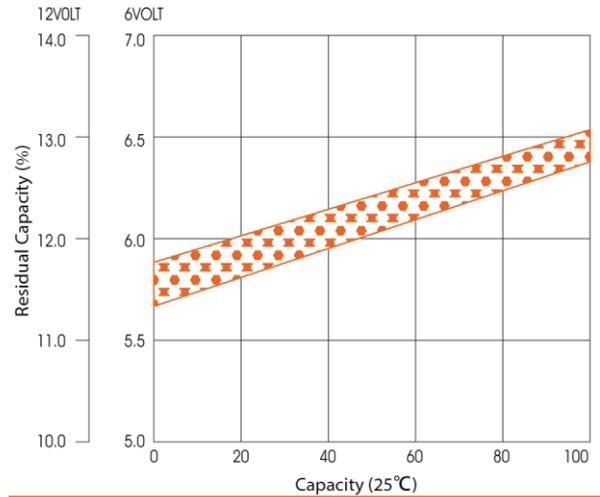
Constant voltage charge characteristic



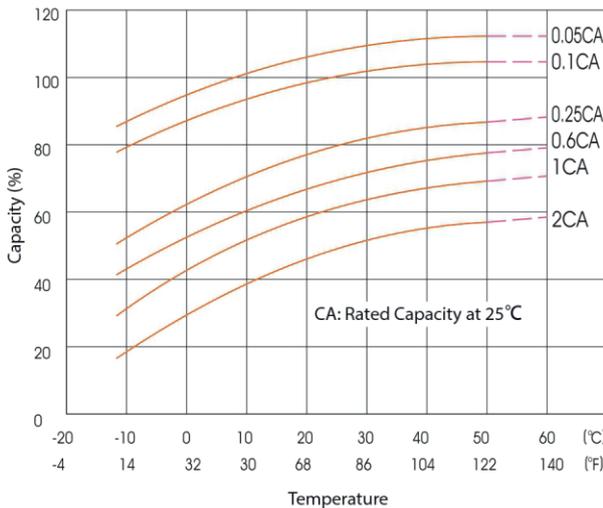
Self-discharge characteristics



Relationship of OCV and residual capacity % (25°C)



Temperature effects on capacity



Temperature effects float life

