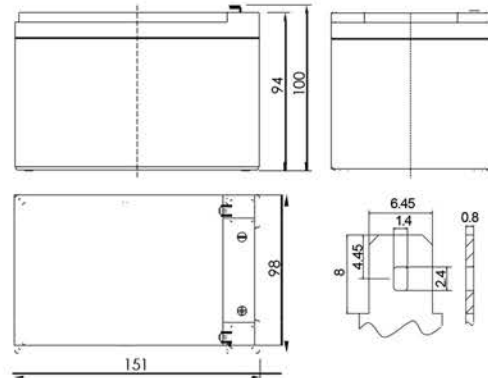


# 6-FM/NP12

FM/NP Battery Series (General Use Battery)



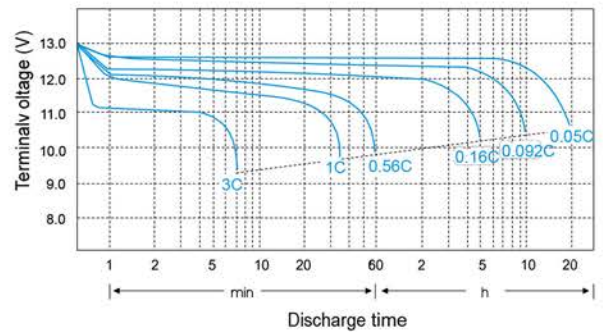
## Specifications

Nominal Voltage	12V	
Rated Capacity (20 hour rate)	12Ah	
Dimensions	Total Height (with terminals)	3.94 inches(100mm)
	Height	3.70 inches(94mm)
	length	5.94 inches(151mm)
	width	3.86 inches(98mm)
Weight	Approx.7.92 Pound(3.60kg)	

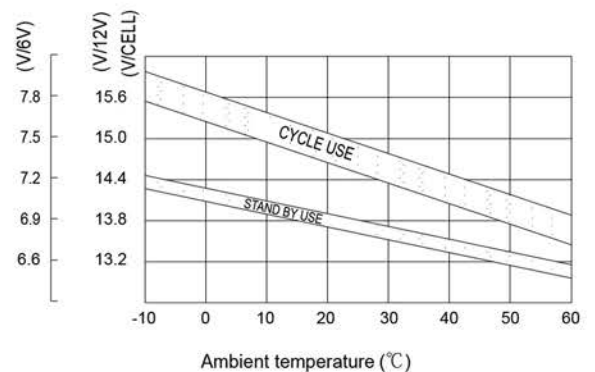
## Characteristics

Capacity 77°F (25°C)	20 hour rate (600mA)	12.0 Ah
	10 hour rate ( 1.12A)	11.2 Ah
	5 hour rate (1.92A)	9.6 Ah
	1hour rate (7.20A)	7.2 Ah
	15Minute Rate (21.1A)	5.3 Ah
Internal Resistance	Full charged Battery 77°F(25°C)	17 MΩ
	104°F(40°C)	102%
Capacity affected by Temperature (20hour rate)	77°F(25°C)	100%
	°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)	180A(5S)	
Terminal	F2	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 3.6A Voltage 14.4~14.7 V / 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)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.6	45.7	29.0	23.3	13.0	7.92	4.48	3.08	2.47	2.09	1.14	0.61
9.9	44.6	28.2	22.4	12.6	7.72	4.32	3.05	2.45	2.08	1.13	0.61
10.2	42.6	27.0	21.7	12.4	7.50	4.26	3.01	2.42	2.06	1.12	0.60
10.5	40.8	25.9	20.9	12.2	7.32	4.20	3.00	2.40	2.04	1.12	0.60
10.8	38.4	25.7	19.8	11.9	7.08	4.08	2.95	2.34	2.02	1.09	0.59

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

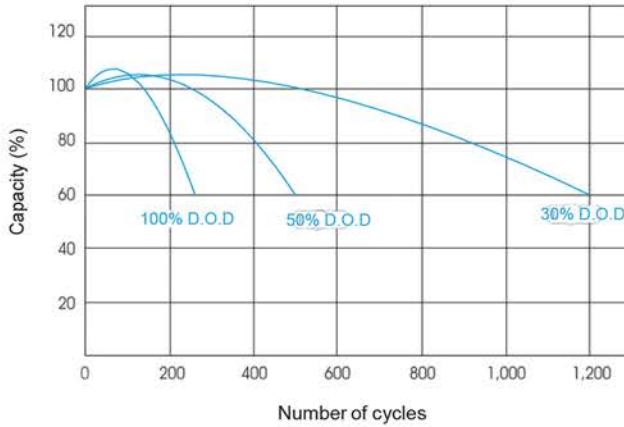
F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.6	509	326	264	148	91.4	52.3	36.7	29.4	24.9	13.6	7.30
9.9	498	317	255	144	89.2	50.5	36.3	29.2	24.8	13.5	7.28
10.2	475	304	247	142	86.8	49.9	35.9	28.9	24.7	13.4	7.25
10.5	456	292	238	140	84.8	49.3	35.8	28.7	24.4	13.4	7.22
10.8	429	290	229	136	82.1	47.9	35.3	28.0	24.1	13.1	7.10

# 6-FM/NP12

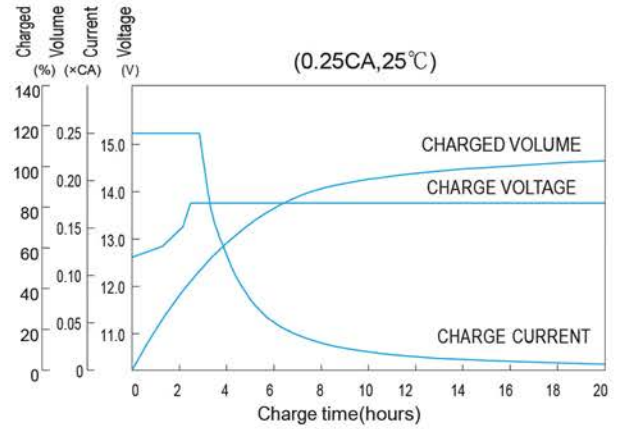
## FM/NP Battery Series (General Use Battery)

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.

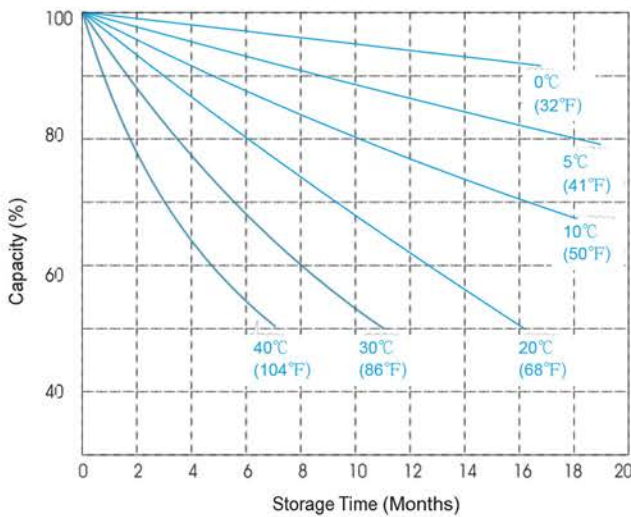
### Cycle service life in relation to depth of discharge



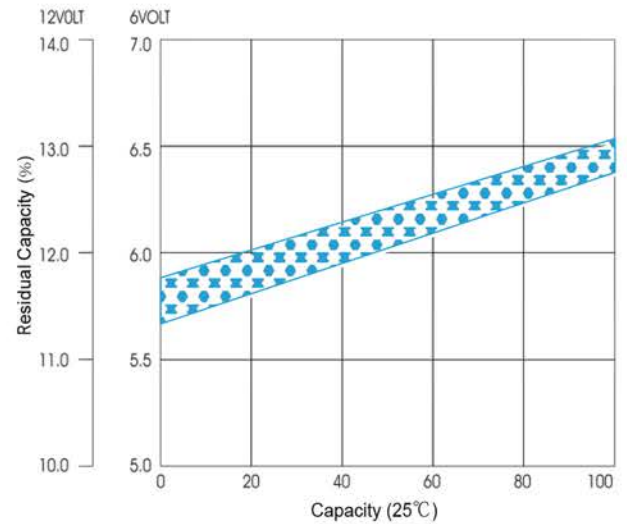
### Constant voltage charge characteristic



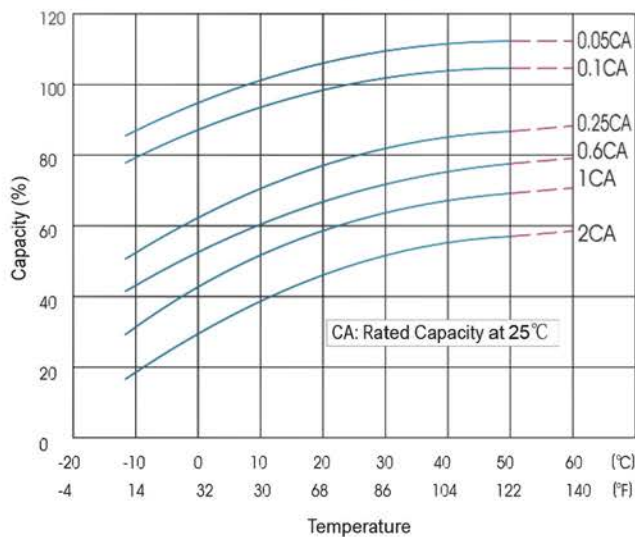
### Self-Discharge Characteristics



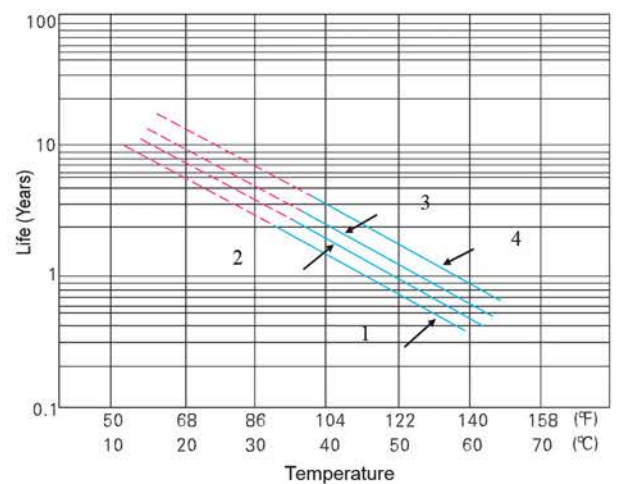
### Relationship of OCV and Residual Capacity % (25°C)



### Temperature effects on capacity



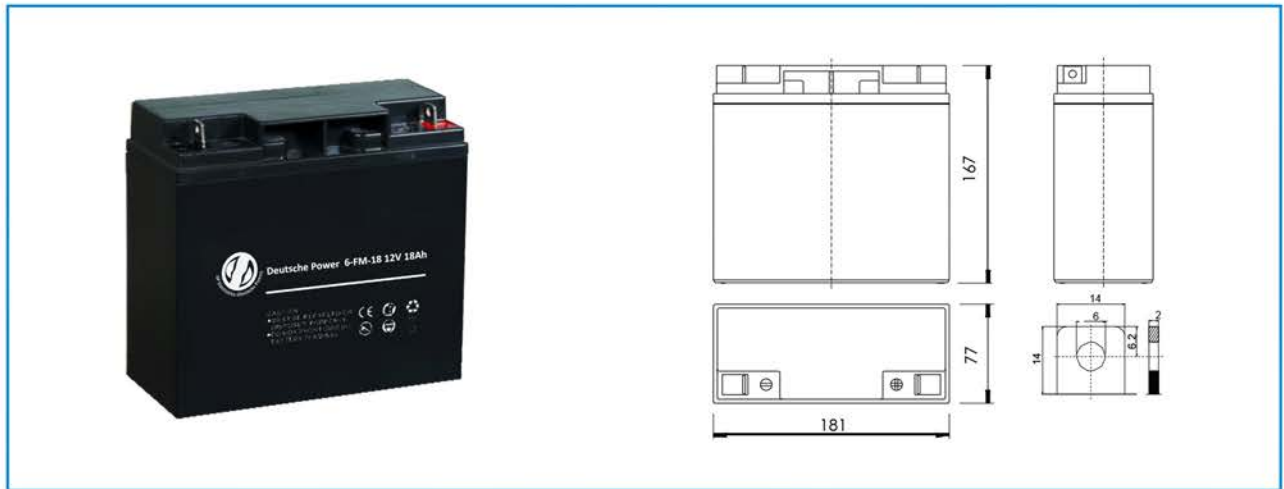
### Temperature effects float life





# 6-FM/NP18

FM/NP Battery Series (General Use Battery)



## Specifications

Nominal Voltage	12V	
Rated Capacity(20 hour rate)	18Ah	
Dimensions	Total Height (with terminals)	6.57inches (167mm)
	Height	6.57inches (167mm)
	Length	7.13inches (181mm)
	Width	3.03inches (77mm)
Weight	Approx. 11.22pound (5.1kg)	

## Characteristics

Capacity 77°F(25°C)	20 hour rate (0.9A)	18.0Ah
	10 hour rate (1.67A)	16.7Ah
	5 hour rate (2.88A)	14.4Ah
	1 hour rate (10.8A)	10.8Ah
	15 minute Rate (31.8A)	7.9Ah
Internal Resistance	Full charged Battery 77°F(25°C)	14mΩ
Capacity affected by Temperature (20 hour 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(20°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)	270A(5S)	
Terminal	B1/M4	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 5.4A Voltage 14.4~14.7V/77°F(25°C)
	Float	Voltage 13.5~13.8V/77°F(25°C)

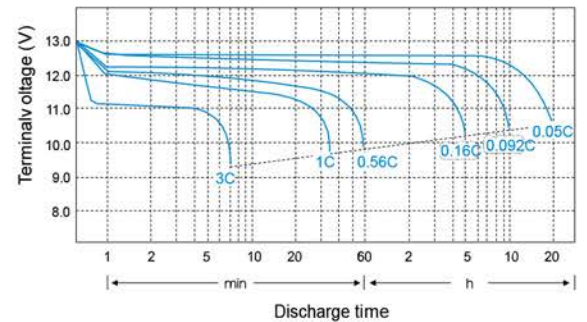
## Constant Current Discharge (AMPERES @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.60	68.58	43.56	34.92	19.44	11.88	6.71	4.63	3.71	3.13	1.71	0.91
9.90	66.96	42.30	33.66	18.90	11.57	6.48	4.57	3.67	3.12	1.70	0.91
10.20	63.90	40.50	32.58	18.54	11.25	6.39	4.52	3.64	3.10	1.68	0.90
10.50	61.20	38.88	31.32	18.36	10.98	6.30	4.50	3.60	3.06	1.68	0.90
10.80	57.60	38.52	29.70	17.82	10.62	6.12	4.43	3.51	3.02	1.64	0.88

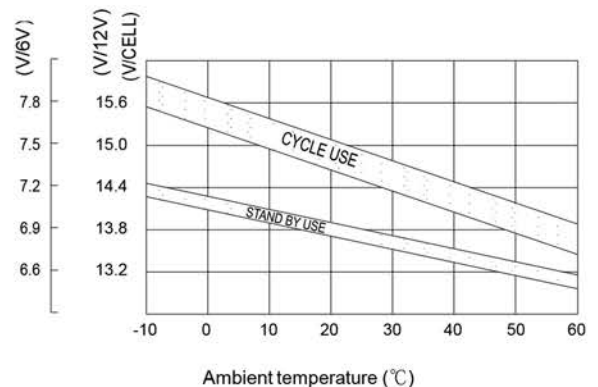
## Constant Power Discharge (WATTS PER CELL @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.60	763.98	489.61	396.69	221.62	137.10	78.47	55.00	44.16	37.33	20.45	10.95
9.90	746.60	475.88	382.71	216.41	133.80	75.80	54.45	43.81	37.25	20.30	10.91
10.20	713.12	456.03	370.76	212.47	130.16	74.89	53.88	43.41	36.99	20.14	10.88
10.50	683.60	438.57	356.73	210.59	127.15	73.96	53.69	43.02	36.60	20.14	10.84
10.80	643.97	435.28	338.62	204.57	123.19	71.91	52.91	41.98	36.21	19.70	10.65

## Discharge Curves 77°F(25°C)



## Relationship between charge voltage and temperature

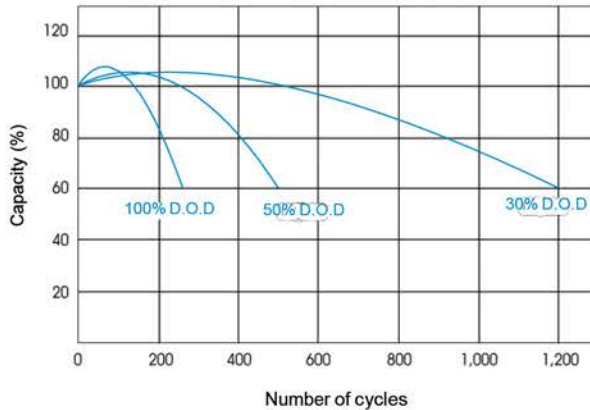


# 6-FM/NP18

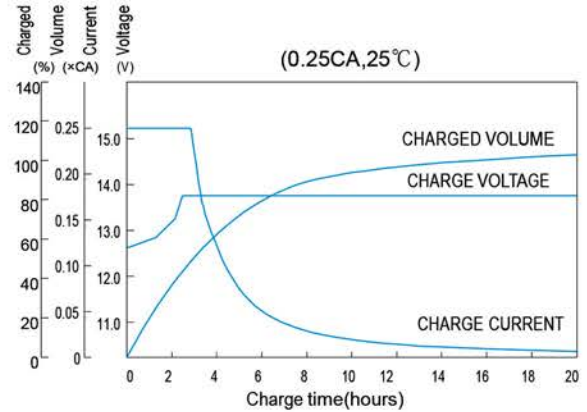
FM/NP Battery Series (General Use Battery)

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 stroge

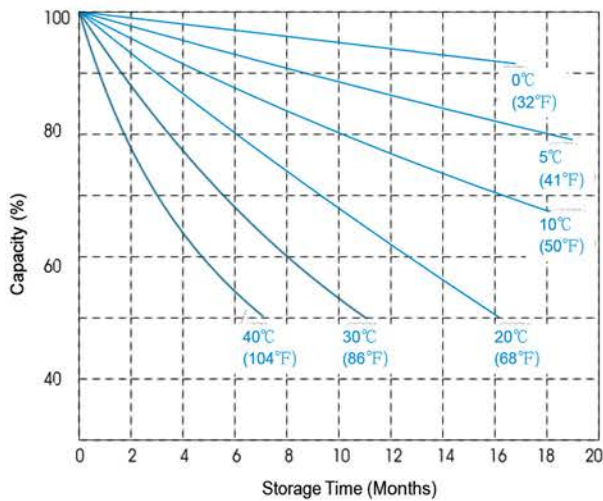
## ■ Cycle service life in relation to depth of discharge



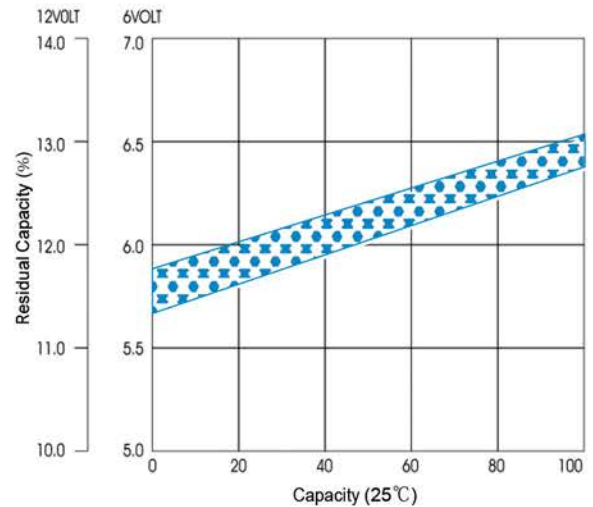
## ■ Constant voltage charge characteristic



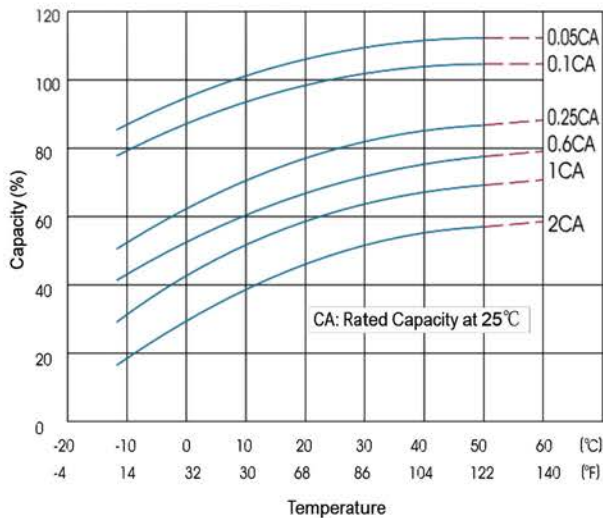
## ■ Self-Discharge Characteristics



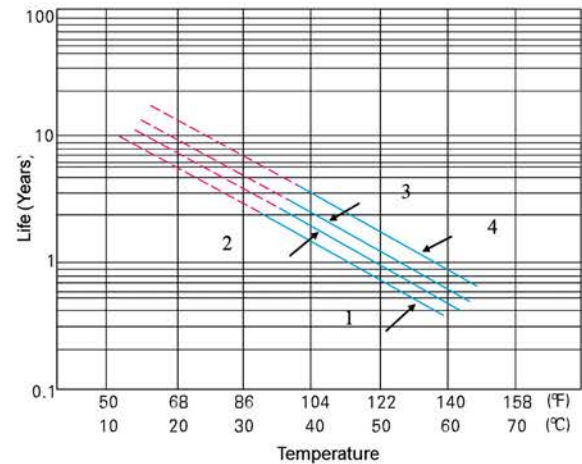
## ■ Relationship of OCV and Residual Capacity % (25°C)



## ■ Temperature effects on capacity



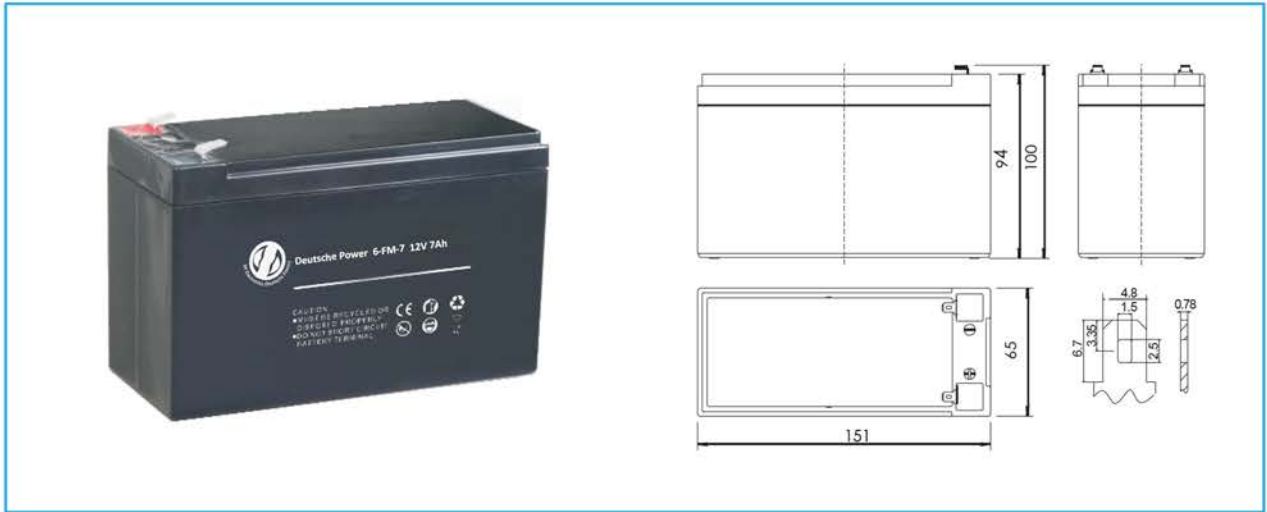
## ■ Temperature effects float life





# 6-FM/NP7

FM/NP Battery Series (General Use Battery)



## Specifications

Nominal Voltage	12V	
Rated Capacity (20 hour rate)	7.0Ah	
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.4.84 Pound(2.20kg)	

## Characteristics

Capacity 77°F(25°C)	20 hour rate (0.35A)	7.0 Ah
	10 hour rate (0.65A)	6.5 Ah
	5 hour rate (1.12A)	5.6 Ah
	1hour rate (4.20 A)	4.2 Ah
	15Minute Rate (12.3 A)	3.1 Ah
Internal Resistance	Full charged Battery 77°F(25°C)	26 MΩ
	104°F(40°C)	102%
Capacity affected by Temperature (20hour rate)	77°F(25°C)	100%
	°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)	105A(5S)	
Terminal	F1\F2	
Charge (Constant Voltage)	Cycle	Initial Charging Current less than 2.1A Voltage 14.4~14.7 V / 77°F(25°C)
	Float	Voltage 13.5~13.8 V / 77°F(25°C)

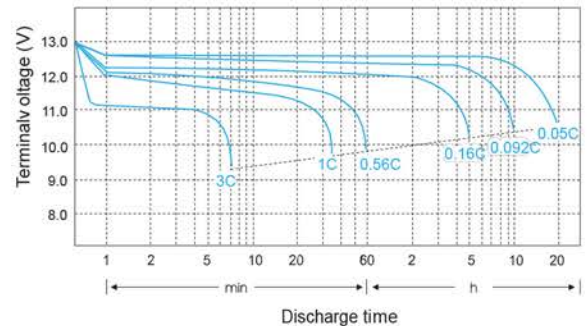
## Constant Current Discharge (AMPERES @25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.6	26.7	16.9	13.6	7.56	4.62	2.61	1.80	1.44	1.22	0.67	0.35
9.9	26.0	16.5	13.1	7.35	4.50	2.52	1.78	1.43	1.21	0.66	0.35
10.2	24.9	15.8	12.7	7.21	4.38	2.49	1.76	1.41	1.20	0.65	0.35
10.5	23.8	15.1	12.2	7.14	4.27	2.45	1.75	1.40	1.19	0.65	0.35
10.82	22.4	15.0	11.6	6.93	4.13	2.38	1.72	1.37	1.18	0.64	0.34

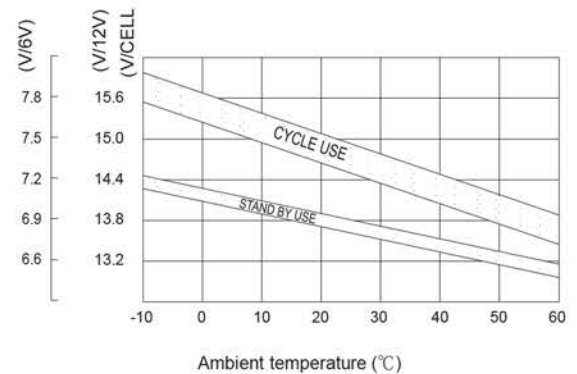
## Constant Power Discharge (WATTS PER CELL@25°C)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.6	297	190	154	86.2	53.3	30.5	21.4	17.2	14.5	7.95	4.26
9.9	290	185	149	84.2	52.0	29.5	21.2	17.0	14.5	7.89	4.24
10.2	277	177	144	82.6	50.6	29.1	21.0	16.9	14.4	7.83	4.23
10.5	266	171	139	81.9	49.5	28.8	20.9	16.7	14.2	7.83	4.21
10.82	250	169	132	79.6	47.9	28.0	20.6	16.3	14.1	7.66	4.14

## Discharge Curves 77°F(25°C)



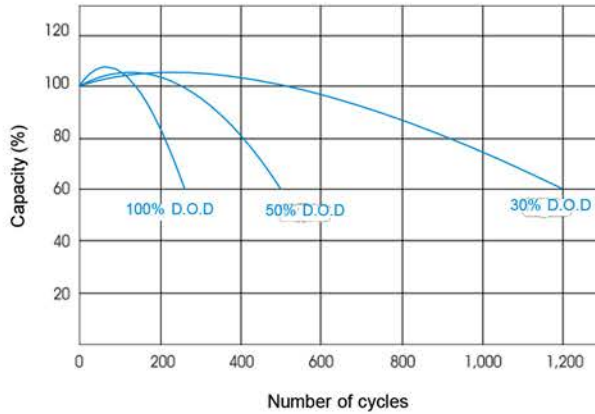
## Relationship between charge voltage and temperature



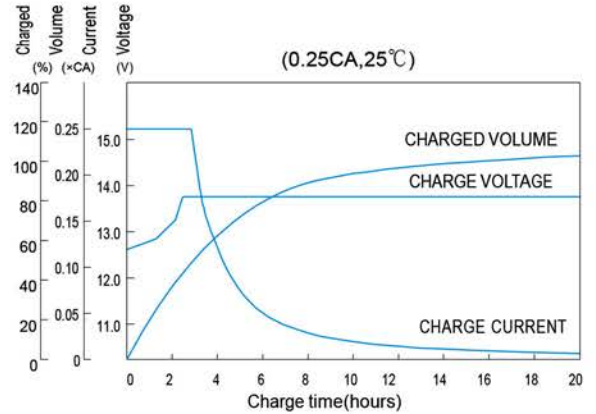
# 6-FM/NP7

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

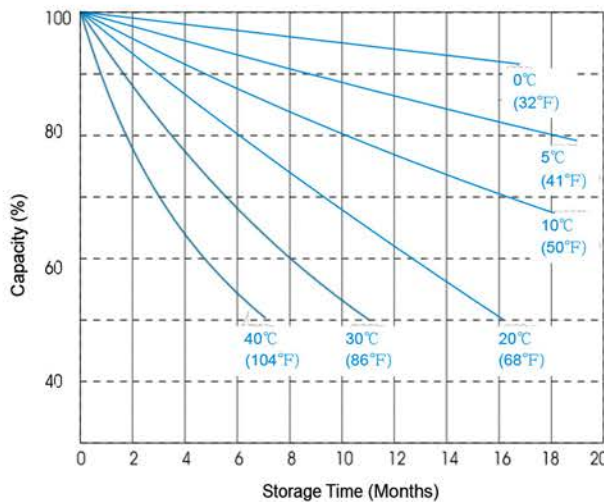
## Cycle service life in relation to depth of discharge



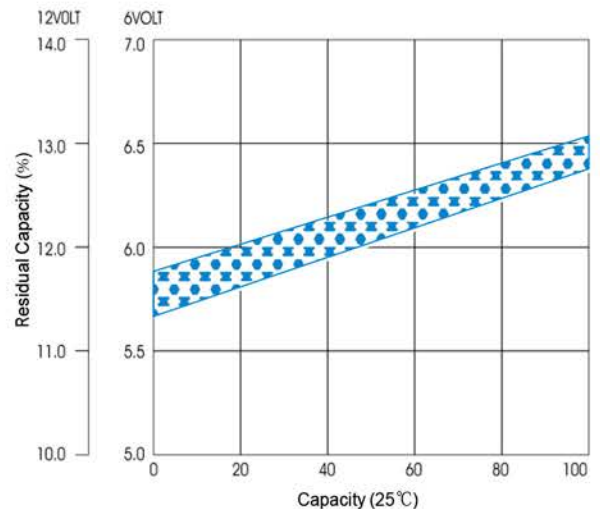
## Constant voltage charge characteristic



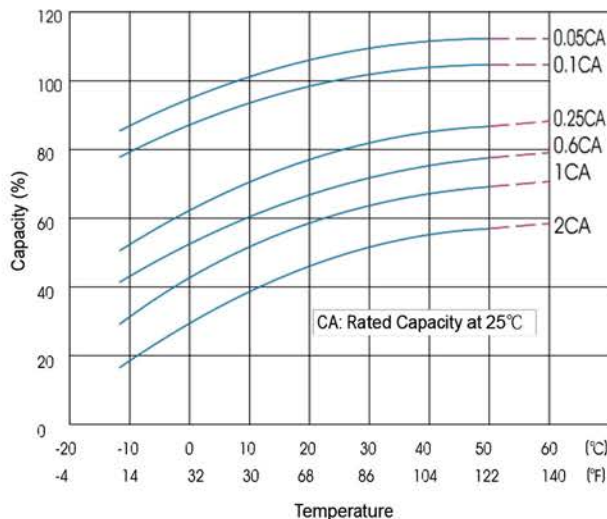
## Self-Discharge Characteristics



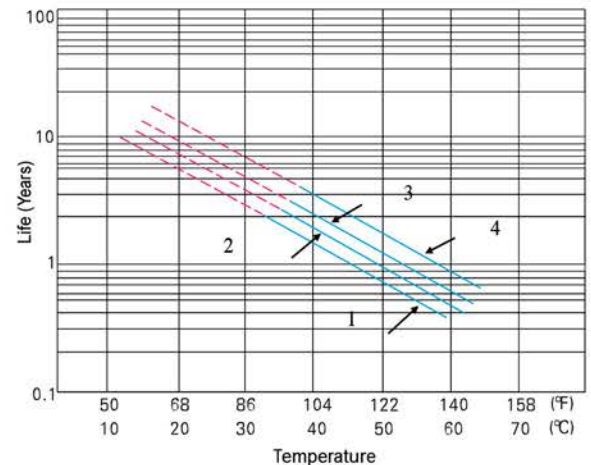
## Relationship of OCV and Residual Capacity % (25°C)



## Temperature effects on capacity



## Temperature effects float life





# 6-FM/NP9

FM/NP Battery Series (General Use Battery)



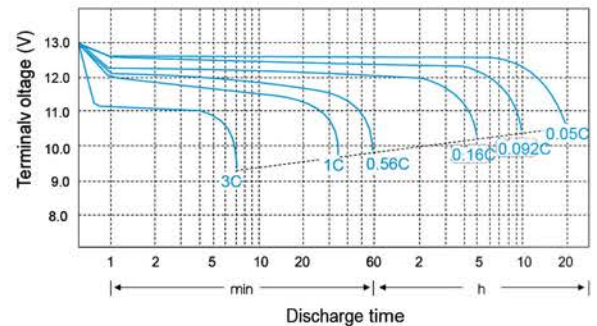
## Specifications

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.5.52 Pound(2.51kg)	

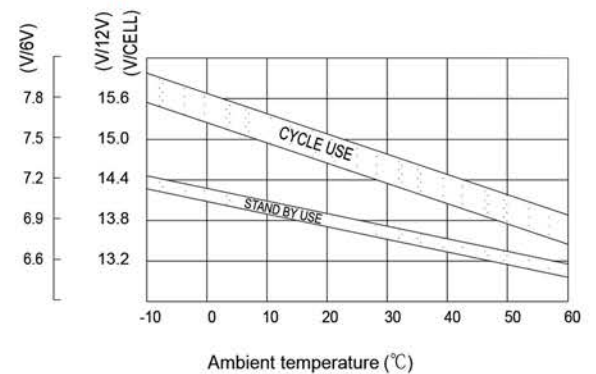
## Characteristics

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)	13 MΩ
	104°F(40°C)	102%
Capacity affected by Temperature (20hour rate)	77°F(25°C)	100%
	°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 14.4~14.7 V / 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)

F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.6	34.3	21.8	17.5	9.72	5.94	3.36	2.31	1.85	1.57	0.86	0.46
9.9	22.5	21.2	16.8	9.45	5.79	3.24	2.29	1.84	1.56	0.85	0.45
10.2	32.0	20.3	16.3	9.27	5.63	3.20	2.26	1.82	1.56	0.84	0.45
10.5	30.6	19.4	15.7	9.18	5.49	3.15	2.25	1.80	1.53	0.84	0.45
10.8	28.8	19.3	14.9	8.91	5.31	3.06	2.21	1.76	1.51	0.82	0.44

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

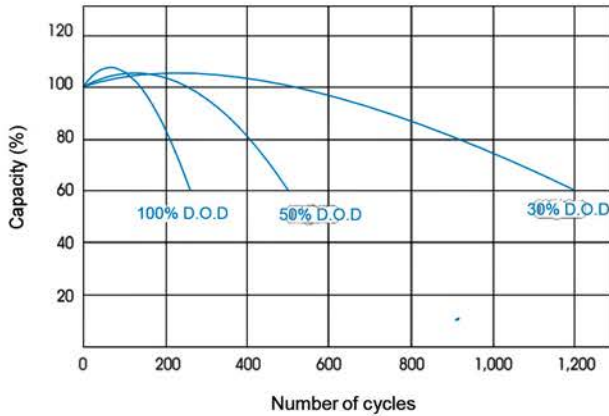
F.V/Time	5Min	10Min	15Min	30Min	60Min	2H	3H	4H	5H	10H	20H
9.6	382	245	198	111	68.6	39.2	27.5	22.1	18.7	10.2	5.48
9.9	373	238	191	108	66.9	37.9	22.2	21.9	18.6	10.2	5.46
10.2	357	228	185	106	65.1	37.5	26.9	21.7	18.5	10.1	5.44
10.5	342	219	178	105	63.6	37.0	26.8	21.5	18.3	10.1	5.42
10.8	322	218	169	102	61.6	36.0	26.5	21.0	18.1	9.85	5.33

# 6-FM/NP9

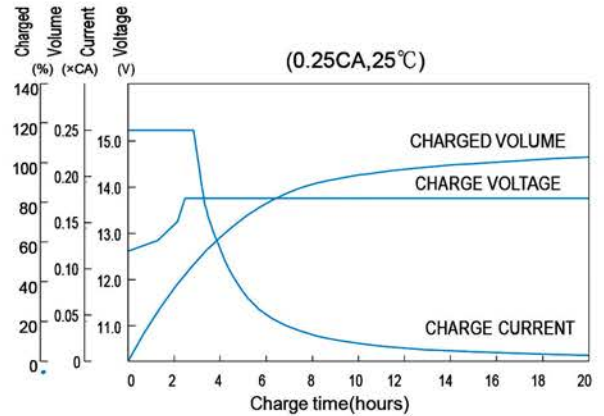
## FM/NP Battery Series (General Use Battery)

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

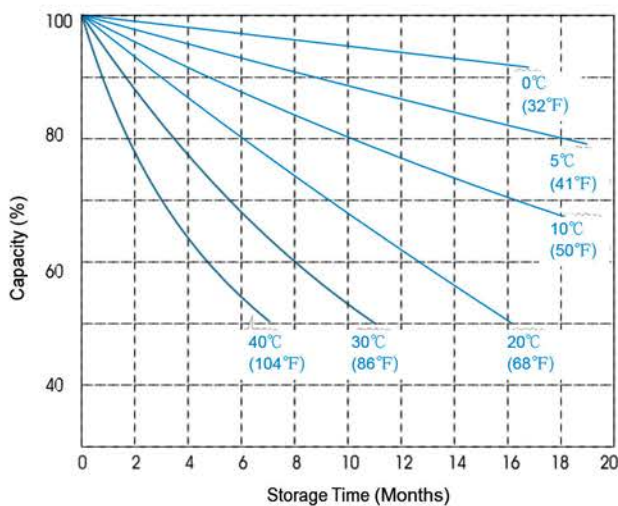
### Cycle service life in relation to depth of discharge



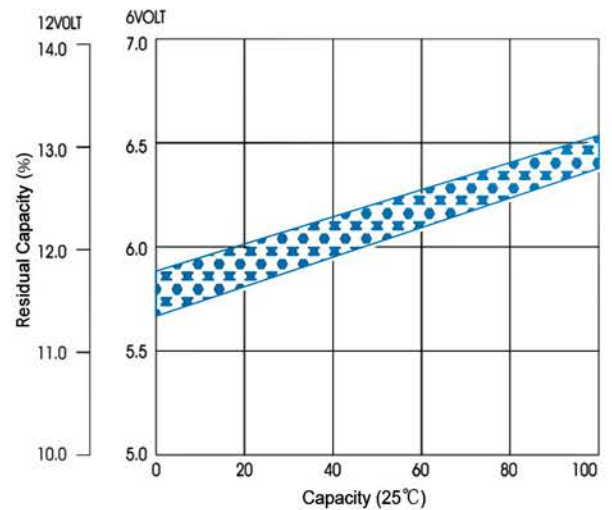
### Constant voltage charge characteristic



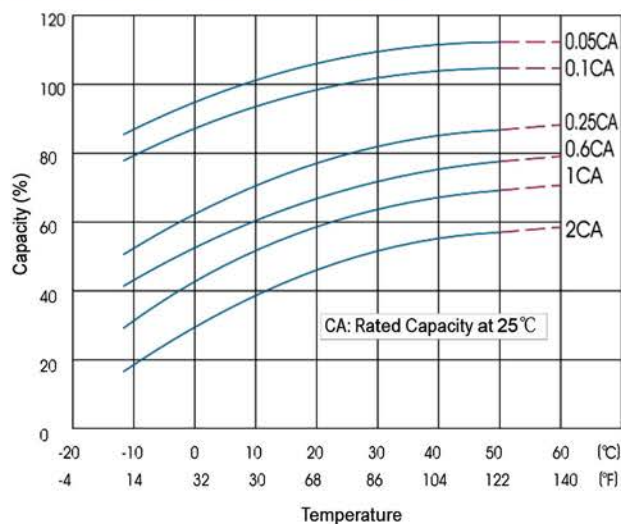
### Self-Discharge Characteristics



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



### Temperature effects on capacity



### Temperature effects float life

