

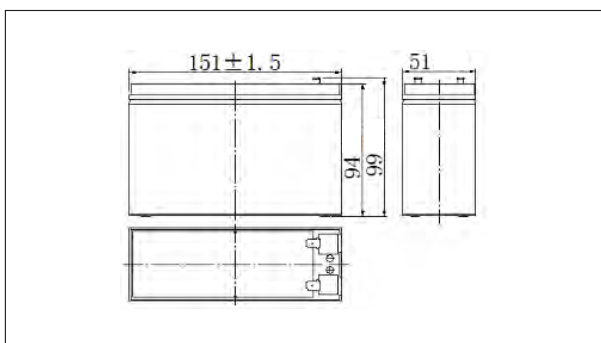
## HR1224W-FR (12V24 Watts/cell)



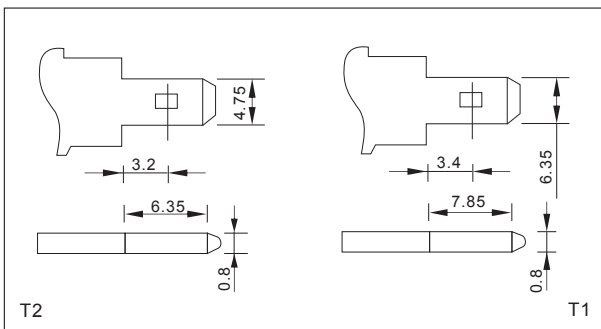
### Specifications

Nominal Voltage	12V	
Number of cell	6 cells	
Rated capacity(15min.rat)	24 Watts/cell	
Dimensions	Length	151±1.5mm(5.94inch)
	Width	51±1mm(2.01inch)
	Height	94±1mm(3.70inch)
	Total Height	99±1mm(3.90inch)
Approx. Weight	1.94kg(4.28lbs)±4%	

### Outer dimensions (mm)



### Terminal Type (mm)



### Characteristics

Capacity(20HR,25°C)	6Ah	
Capacity(15min.rate,25°C)	24 Watts/cell	
Terminal type	T2/T1	
Internal resistance (Fully charged,25°C)	Approx. 19m Ω	
Capacity affected by temperature (10HR)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-discharge (25°C)	3 months	Remaining Capacity:91%
	6 months	Remaining Capacity:82%
	12 months	Remaining Capacity:65%
Nominal operating temperature	25°C ±3°C(77°F ±5°F)	
Operating temperature range	Discharge	-15°C~50°C(5°F~122°F)
	Charge	-10°C~50°C(14°F~122°F)
	Storage	-20°C~50°C(-4°F~122°F)
Float charging voltage(25°C)	13.50 to 13.80V Temperature compensation: -18mV/°C	
Cyclic charging voltage(25°C)	14.50 to 15.00V Temperature compensation: -30mV/°C	
Maximum charging current	1.8A	
Maximum discharge current	90A(5 sec.)	
Designed floating life(20°C)	5years	

### Construction

Component	Positive plate	Negative plate	Container	Cover	Separator	Electrolyte	Safety valve	Terminal
Raw material	Leaddioxide	Lead	ABS	ABS	AGM	Sulfuric acid	Rubber	Copper

### Constant Current Discharge Characteristics Unit:A(25°C,77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	26.0	16.0	12.6	9.95	6.74	4.99	4.08	2.20	1.57	1.26	1.08
1.67V/cell	24.8	15.3	12.1	9.55	6.52	4.83	3.98	2.19	1.55	1.25	1.07
1.70V/cell	24.2	14.9	11.8	9.35	6.40	4.74	3.92	2.17	1.55	1.24	1.07
1.75V/cell	23.1	14.2	11.4	9.03	6.25	4.63	3.84	2.14	1.54	1.24	1.06
1.80V/cell	21.8	13.4	10.8	8.55	6.02	4.46	3.72	2.09	1.49	1.20	1.03

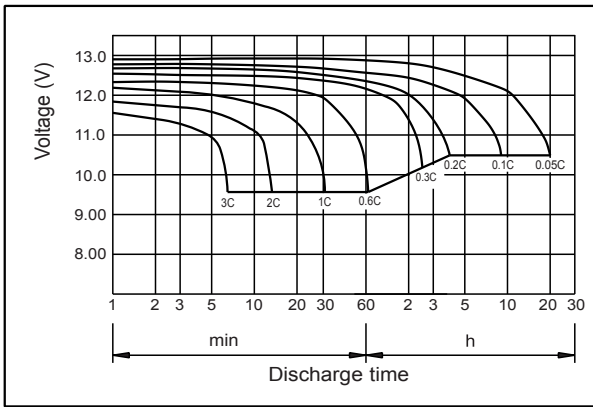
### Constant Power Discharge Characteristics Unit:W(25°C,77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V/cell	49.9	31.1	24.9	19.7	13.3	9.88	8.08	4.39	3.15	2.53	2.18
1.67V/cell	47.6	29.7	24.0	18.9	12.9	9.56	7.88	4.35	3.12	2.51	2.16
1.70V/cell	46.4	28.9	23.4	18.5	12.7	9.39	7.76	4.32	3.11	2.50	2.15
1.75V/cell	44.4	27.6	22.6	17.9	12.4	9.16	7.61	4.26	3.09	2.48	2.13
1.80V/cell	41.9	26.1	21.4	16.9	11.9	8.82	7.37	4.15	2.99	2.41	2.07

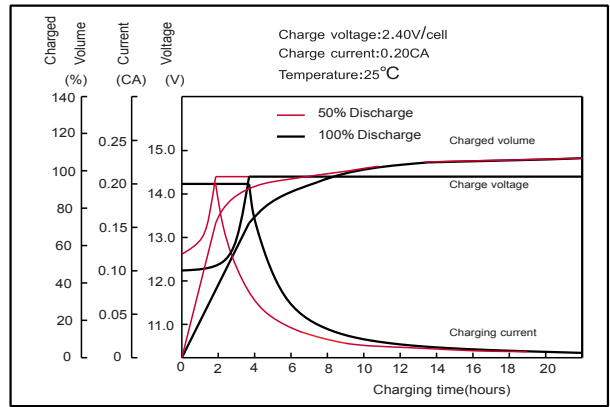
Note: The above characteristics data can be obtained within three charge or discharge cycles.

**HR1224W-FR (12V24 Watts/cell)**

**Discharge characteristics(25°C)**



**Charging characteristics (25°C)**



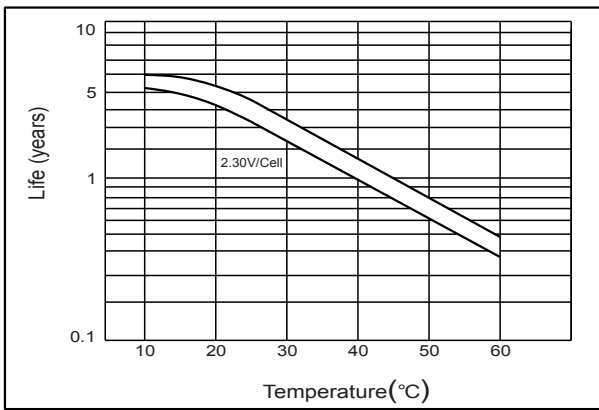
**Effect of Temperature on Capacity**



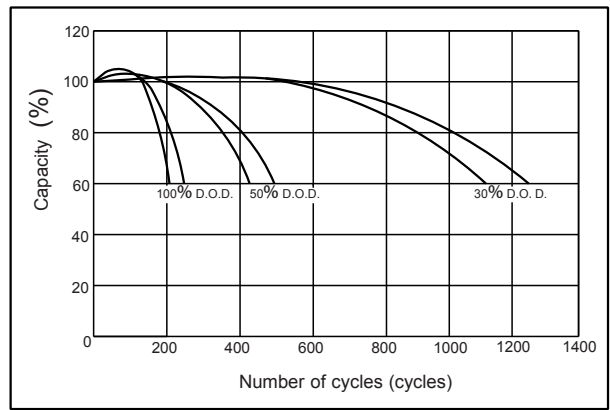
**Self-discharge characteristics**



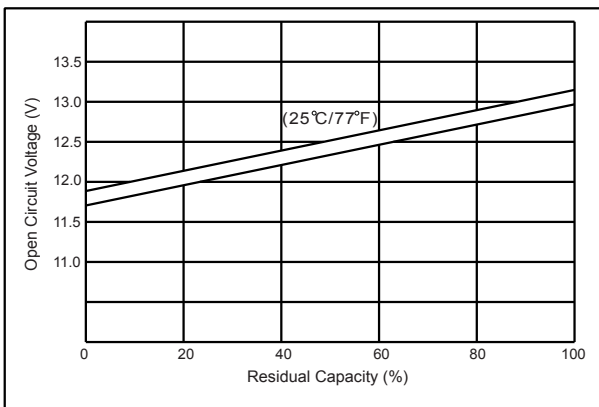
**Floating Life on Temperature**



**Cycle service Life on D.O.D (25°C)**



**The relationship for OCV and Capacity (25°C)**



**The relationship for Charging voltage and Temperature**

