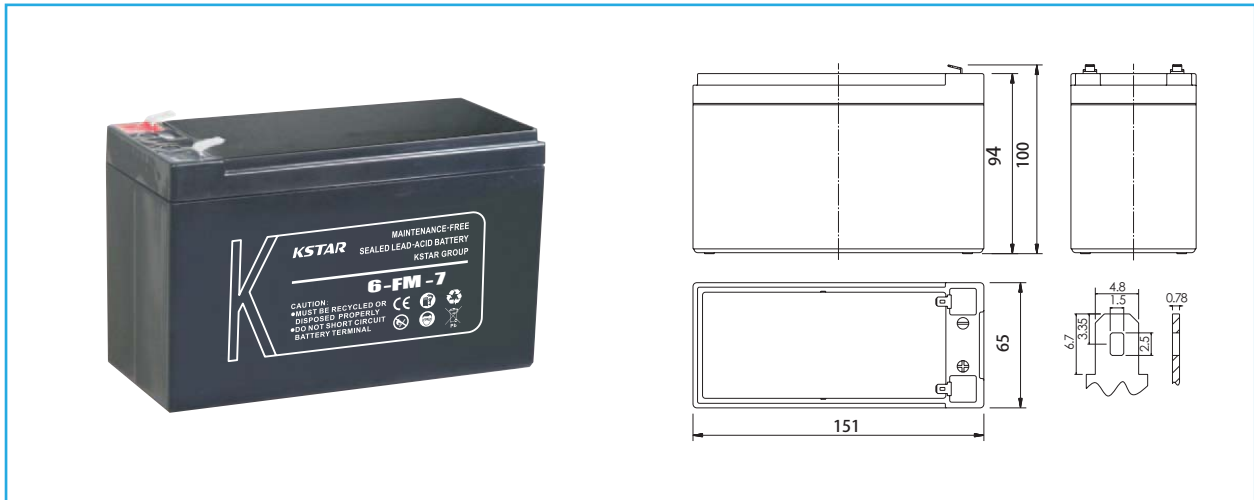


# 6-FM-7

FM Series  
Battery For General Use



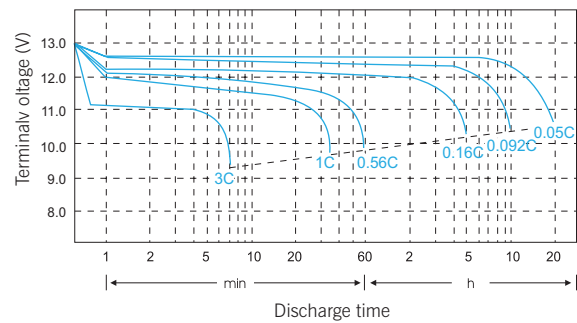
## Specifications

|                               |                               |                    |
|-------------------------------|-------------------------------|--------------------|
| 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)     |                    |

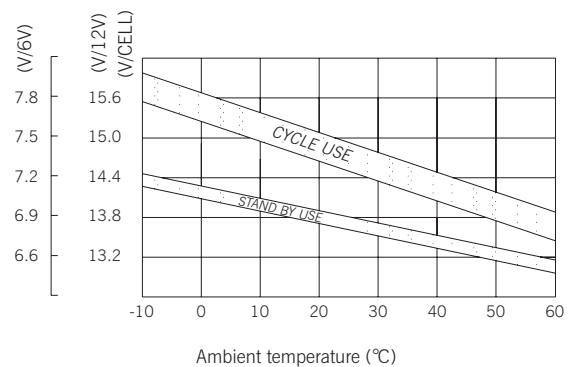
## Characteristics

|   |                                     |  |
|---|-------------------------------------|--|
| Capacity<br>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<br>77°F (25°C) | 26 MΩ  |
| Capacity affected by<br>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<br>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<br>77°F (25°C)             | 105A(5S)                            |  |
| Terminal  | F1 \ F2                             |  |
| Charge<br>(Constant Voltage)                      | Cycle                               | Initial Charging Current less than 2.1A<br>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)

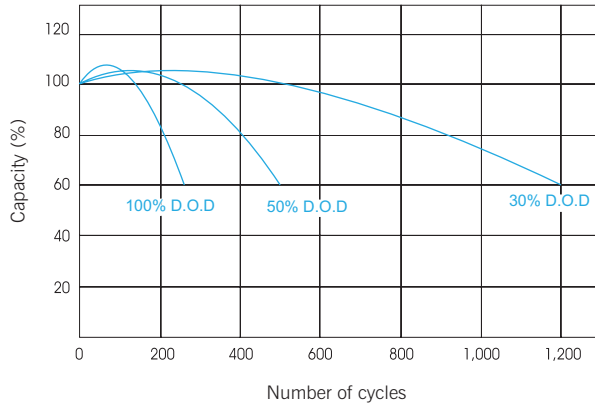
| F.V/Time | 5Min | 10Min | 15Min | 30Min | 60Min | 2H   | 3H   | 4H   | 5H   | 10H  | 20H  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 9.6      | 26.7 | 16.9  | 13.6  | 7.56  | 4.62  | 2.61 | 1.80 | 1.44 | 1.22 | 0.67 | 0.35 |
| 9.9      | 26.0 | 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)

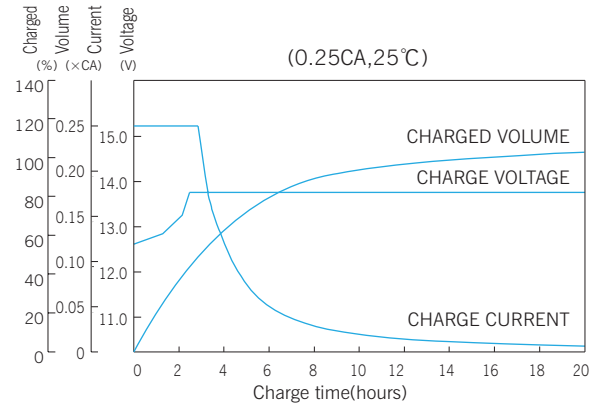
| F.V/Time | 5Min | 10Min | 15Min | 30Min | 60Min | 2H   | 3H   | 4H   | 5H   | 10H  | 20H  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 9.6      | 297  | 190   | 154   | 86.2  | 53.3  | 30.5 | 21.4 | 17.2 | 14.5 | 7.95 | 4.26 |
| 9.9      | 290  | 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 |

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.

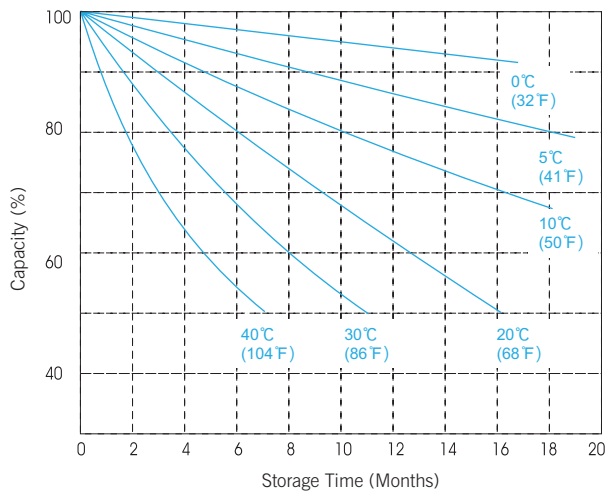
### Cycle service life in relation to depth of discharge



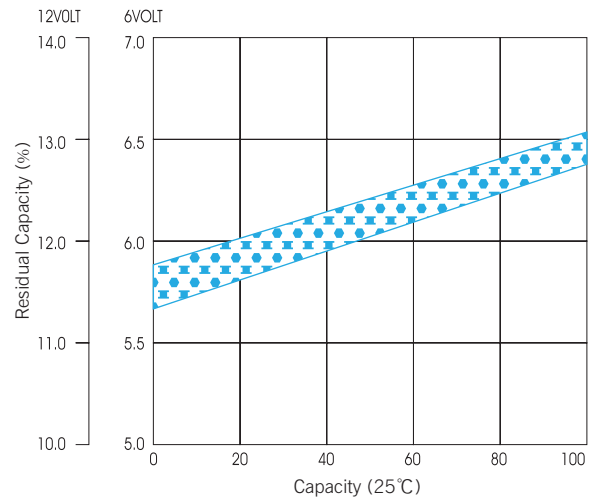
### Constant voltage charge characteristic



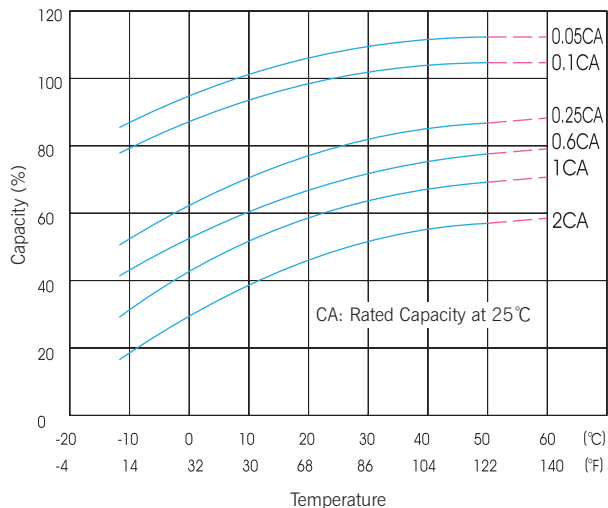
### Self-Discharge Characteristics



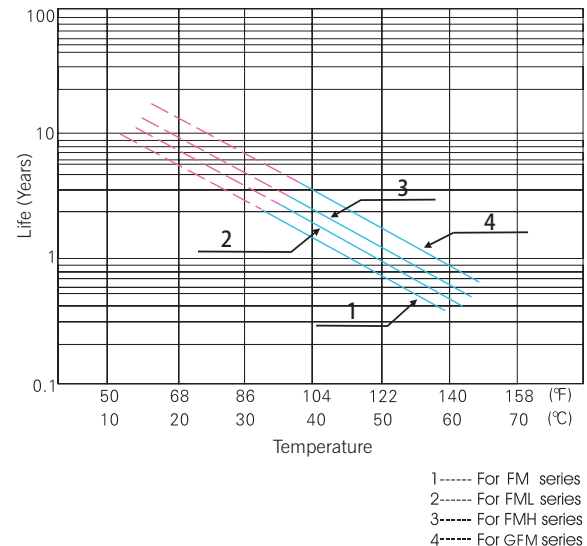
### Relationship of OCV and Residual Capacity % (25°C)



### Temperature effects on capacity



### Temperature effects float life



1----- For FM series  
2----- For FML series  
3----- For FMH series  
4----- For GFM series