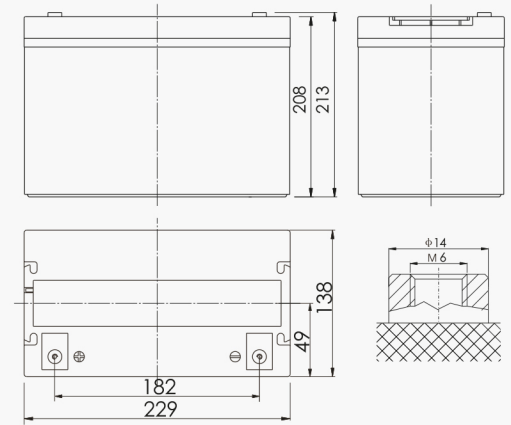


# 6-FM-50

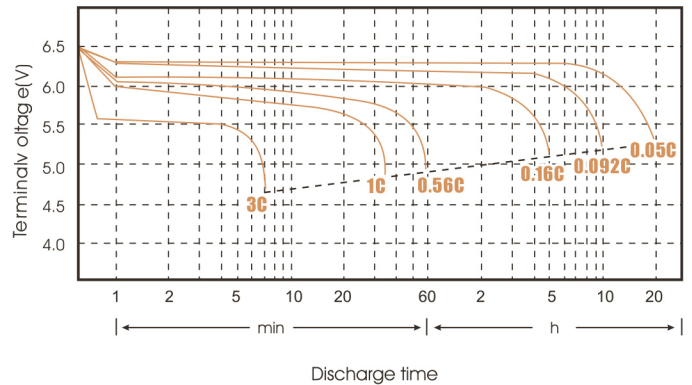
**MAKELSAN®**  
Uninterruptible Power Supplies



## Specifications

|                              |                               |                            |
|------------------------------|-------------------------------|----------------------------|
| Nominal Voltage              |                               | 12V                        |
| Rated Capacity(20 hour rate) |                               | 50Ah                       |
| Dimensions                   | Total Height (with terminals) | 8.39inches (213mm)         |
|                              | Height                        | 8.19inches (208mm)         |
|                              | Length                        | 9.02inches (229mm)         |
|                              | Width                         | 5.43inches (138mm)         |
| Weight                       |                               | Approx. 34.76pound(15.8kg) |

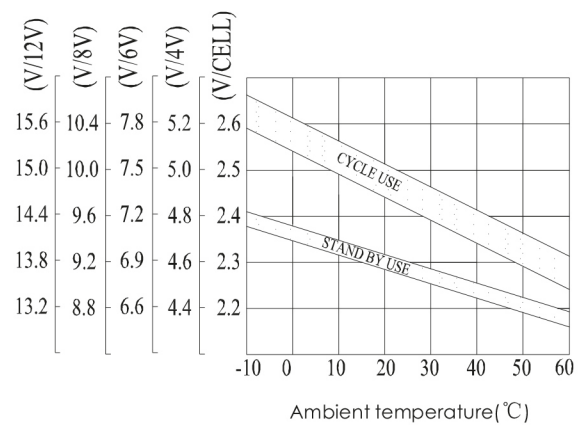
## Discharge Curves 77°F(25°C)



## Characteristics

|                                                       |                                                                                       |                                                                         |
|-------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Capacity<br>77°F(25°C)                                | 20 hour rate (2.5A)<br>10 hour rate (4.6A)<br>5 hour rate (8.0A)<br>1 hour rate (30A) | 50Ah<br>46Ah<br>40Ah<br>30Ah                                            |
|                                                       | 15 minute Rate (87.2A)                                                                | 21.8Ah                                                                  |
| Internal Resistance                                   | Full charged Battery 77°F(25°C)                                                       | 8.3mΩ                                                                   |
| Capacity affected<br>by Temperature<br>(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<br>77°F(20°C)                          | Capacity after 3 month storage                                                        | 91%                                                                     |
|                                                       | Capacity after 6 month storage                                                        | 81%                                                                     |
|                                                       | Capacity after 12 month storage                                                       | 60%                                                                     |
| Max. Discharge<br>Current 77°F(25°C)                  | 500A(5S)                                                                              |                                                                         |
| Terminal                                              | M1                                                                                    |                                                                         |
| Charge<br>(Constant<br>Voltage)                       | Cycle                                                                                 | Initial Charging Current less than 15A<br>Voltage 14.4~14.7V/77°F(25°C) |
|                                                       | Float                                                                                 | Voltage 13.5~13.8V/77°F(25°C)                                           |

## Relationship between charge voltage and temperature



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

| Cut off voltage v/cell | 1M  | 5M  | 10M | 15M | 30M | 45M  | 1h   | 2h   | 3h   | 5h   | 8h   | 10h | 12h  | 24h  |
|------------------------|-----|-----|-----|-----|-----|------|------|------|------|------|------|-----|------|------|
| 1.60V                  | 318 | 297 | 223 | 173 | 103 | 79.8 | 64.5 | 38.4 | 27.2 | 17.6 | 10.9 | 9.1 | 7.92 | 4.15 |
| 1.65V                  | 310 | 281 | 210 | 165 | 101 | 78.6 | 63.0 | 37.6 | 26.6 | 17.3 | 10.9 | 9.1 | 7.92 | 4.15 |
| 1.67V                  | 307 | 273 | 204 | 160 | 101 | 77.9 | 62.2 | 37.2 | 26.4 | 17.1 | 10.9 | 9.1 | 7.92 | 4.15 |
| 1.70V                  | 302 | 264 | 199 | 157 | 100 | 77.0 | 61.5 | 36.9 | 26.1 | 17.0 | 10.9 | 9.1 | 7.92 | 4.15 |
| 1.75V                  | 276 | 244 | 187 | 151 | 98  | 75.3 | 60.2 | 35.8 | 25.5 | 16.8 | 10.8 | 9.0 | 7.85 | 4.15 |
| 1.80V                  | 248 | 232 | 174 | 144 | 97  | 73.3 | 58.6 | 34.8 | 24.9 | 16.6 | 10.7 | 8.9 | 7.61 | 4.07 |
| 1.85V                  | 201 | 179 | 144 | 121 | 78  | 66.9 | 56.4 | 33.7 | 24.2 | 15.5 | 10.6 | 8.4 | 7.29 | 3.84 |