

## LC-R123R4

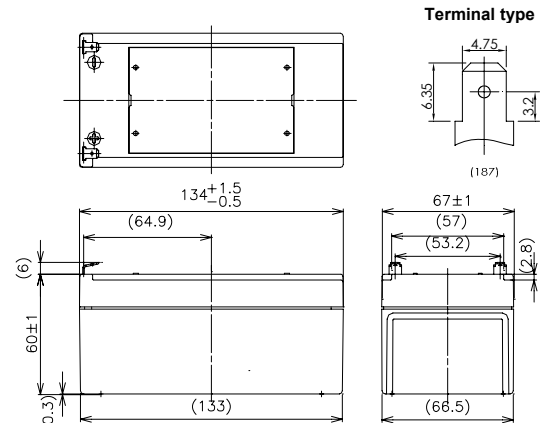


Contents indicated (including the recycle marking, etc) are subject to change without notice.

For main and standby power supplies

Expected trickle life: 3-5 years at 25°C, approx. 5 years at 20°C

### ■ Dimensions(mm)



Battery case resin: standard (UL94HB)

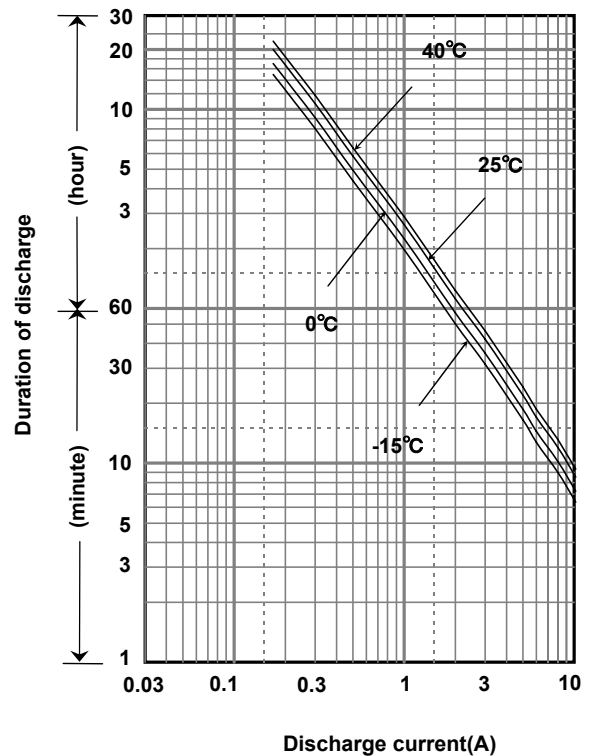
### ■ Specification

|                      |              |            |
|----------------------|--------------|------------|
| Nominal Voltage      |              | 12V        |
| Rated Capacity(20HR) |              | 3.4Ah      |
| Dimensions           | Length       | 134 mm     |
|                      | Width        | 67 mm      |
|                      | Height       | 60 mm      |
|                      | Total height | 66 mm      |
| Approx. Mass         |              | 1.15 kg    |
| Terminal             |              | Faston 187 |

### ■ Characteristics

|                                                            |                                  |       |
|------------------------------------------------------------|----------------------------------|-------|
| Capacity<br>(25 °C)                                        | 20 hour rate                     | 3.4Ah |
|                                                            | 10 hour rate                     | 3.0Ah |
|                                                            | 5 hour rate                      | 2.7Ah |
|                                                            | 1 hour rate                      | 2.1Ah |
| Internal Resistance                                        | Fully charged battery<br>(25 °C) | 50 mΩ |
| Temperature<br>Dependency of<br>Capacity<br>(20 hour rate) | 40 °C                            | 102%  |
|                                                            | 25 °C                            | 100%  |
|                                                            | 0 °C                             | 85%   |
|                                                            | -15 °C                           | 65%   |
| Self Discharge<br>(25 °C)                                  | After 3 months                   | 91%   |
|                                                            | After 6 months                   | 82%   |
|                                                            | After 12 months                  | 64%   |

### ■ Duration of discharge vs. discharge current



### ■ Watt Table(25°C)

| Cut-off V | 3min | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 10h  | 20h  | 24h  |
|-----------|------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 9.6V      | 204  | 161  | 105   | 80.4  | 67.4  | 50.3  | 35.5  | 28.4 | 19.6 | 15.0 | 11.3 | 8.63 | 7.13 | 5.80 | 3.81 | 2.06 | 1.72 |
| 9.9V      | 190  | 151  | 103   | 79.8  | 66.3  | 49.7  | 35.3  | 28.4 | 19.2 | 14.9 | 11.2 | 8.58 | 7.07 | 5.78 | 3.80 | 2.05 | 1.71 |
| 10.2V     | 175  | 142  | 100   | 78.2  | 65.2  | 49.2  | 34.9  | 27.8 | 18.8 | 14.5 | 11.1 | 8.52 | 7.01 | 5.73 | 3.76 | 2.05 | 1.71 |
| 10.5V     | 155  | 127  | 93    | 72.8  | 61.9  | 48.1  | 34.4  | 27.3 | 18.4 | 14.0 | 11.0 | 8.46 | 6.96 | 5.66 | 3.74 | 2.04 | 1.70 |
| 10.8V     | 131  | 112  | 83    | 67.9  | 60.3  | 46.4  | 33.8  | 26.7 | 17.8 | 13.4 | 10.7 | 8.46 | 6.79 | 5.66 | 3.68 | 1.98 | 1.70 |

### ■ Ampere Table(25°C)

| Cut-off V | 3min | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h    | 4h    | 5h    | 6h    | 10h   | 20h   | 24h   |
|-----------|------|------|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 9.6V      | 18.4 | 14.4 | 9.40  | 6.99  | 5.81  | 4.30  | 3.02  | 2.41 | 1.66 | 1.26 | 0.949 | 0.722 | 0.595 | 0.484 | 0.318 | 0.171 | 0.143 |
| 9.9V      | 17.0 | 13.6 | 9.21  | 6.94  | 5.71  | 4.25  | 3.00  | 2.41 | 1.62 | 1.26 | 0.945 | 0.718 | 0.590 | 0.482 | 0.316 | 0.171 | 0.143 |
| 10.2V     | 15.7 | 12.7 | 8.97  | 6.80  | 5.62  | 4.20  | 2.97  | 2.36 | 1.59 | 1.22 | 0.935 | 0.713 | 0.586 | 0.478 | 0.313 | 0.170 | 0.142 |
| 10.5V     | 14.0 | 11.4 | 8.31  | 6.33  | 5.34  | 4.11  | 2.93  | 2.31 | 1.56 | 1.18 | 0.921 | 0.708 | 0.581 | 0.472 | 0.312 | 0.170 | 0.142 |
| 10.8V     | 11.8 | 10.1 | 7.41  | 5.90  | 5.19  | 3.97  | 2.88  | 2.27 | 1.51 | 1.13 | 0.897 | 0.708 | 0.567 | 0.472 | 0.307 | 0.165 | 0.142 |

## ■ Charging Method

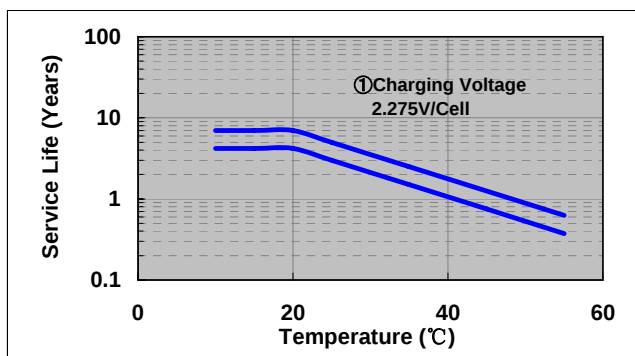
(25°C)

|             |                                                             |
|-------------|-------------------------------------------------------------|
| Cycle use   | Control voltage:14.5-14.9V;Initial current1.36A or smaller  |
| Trickle use | Control voltage:13.6-13.8V;Initial current:0.51A or smaller |

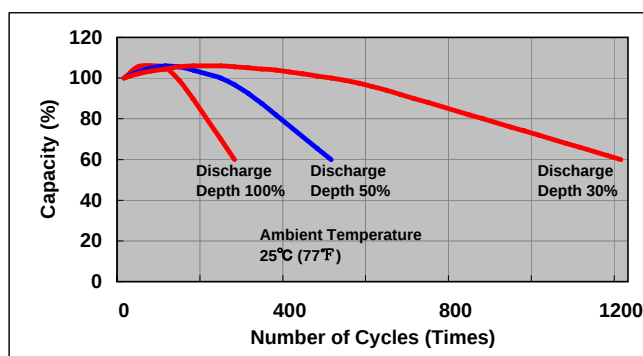
## ■ Cut off voltage

|                    |             |            |           |           |            |
|--------------------|-------------|------------|-----------|-----------|------------|
| Discharge current  | 0.17A-0.68A | 0.68A-1.7A | 1.7A-3.4A | 3.4A-6.8A | 6.8A-10.2A |
| Cut off voltage(V) | 10.5        | 10.2       | 9.9       | 9.3       | 8.7        |

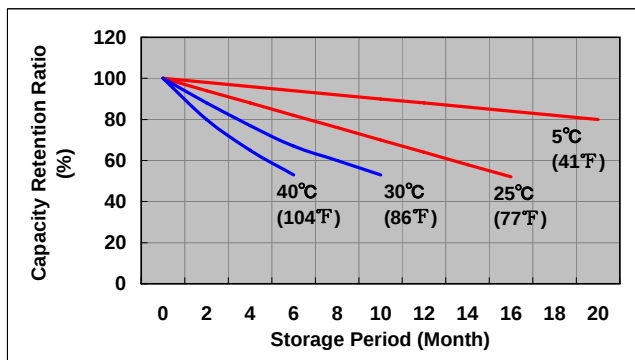
## ■ Influence of Temperature on Trickle life



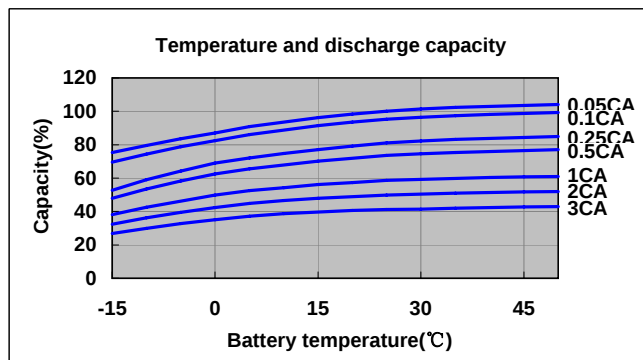
## ■ Cycle life vs. Depth of discharge



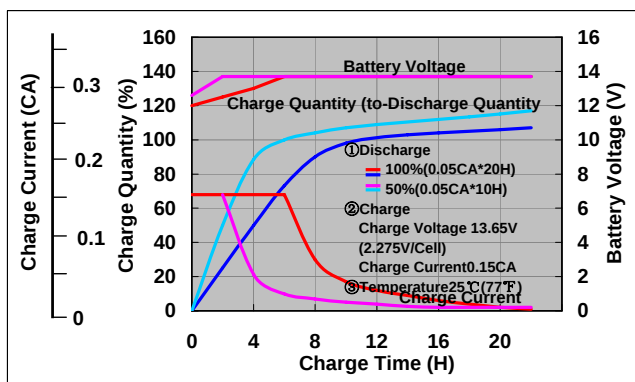
## ■ Residual capacity test result



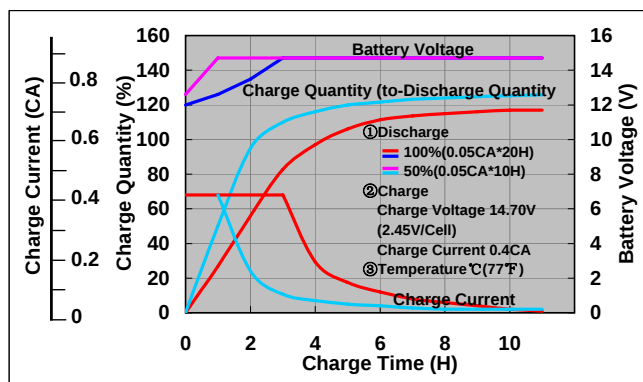
## ■ Discharge capacity by temperature and by discharge current



## ■ Constant-voltage constant-current charge characteristics for Trickle use



## ■ Constant-voltage constant-current charge characteristics for Cycle use



## ■ Discharge characteristics(25°C)

