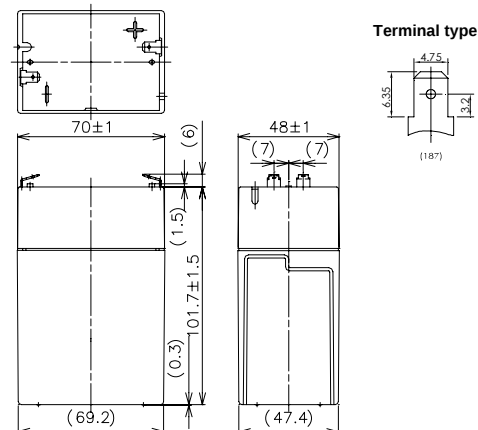




※Contents indicated (including the recycle marking, etc) are subject to change without notice.

### ■Dimensions(mm)



Battery case resin: Flame-retardant (UL94V-0)

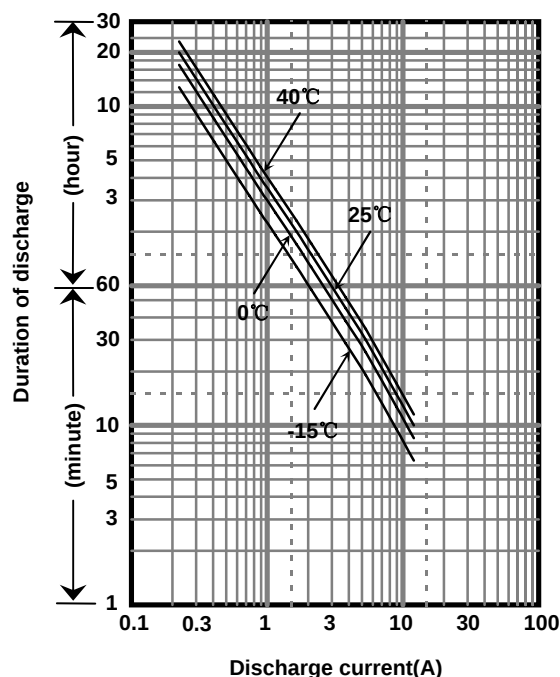
### ■Specifications

|                      |              |            |
|----------------------|--------------|------------|
| Nominal Voltage      |              | 6V         |
| Rated Capacity(20HR) |              | 4.5Ah      |
| Dimensions           | Length       | 70 mm      |
|                      | Width        | 48 mm      |
|                      | Height       | 102 mm     |
|                      | Total height | 108 mm     |
| Approx. Mass         |              | 0.70 kg    |
| Terminal             |              | Faston 187 |

### ■Characteristics

|                                                            |                       |       |
|------------------------------------------------------------|-----------------------|-------|
| Capacity<br>(25 °C)                                        | 20 hour rate          | 4.5Ah |
|                                                            | 10 hour rate          | 4.0Ah |
|                                                            | 3 hour rate           | 3.6Ah |
|                                                            | 1 hour rate           | 3.0Ah |
| Internal Resistance<br>(25 °C)                             | Fully charged battery | 20 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)

(Wattage/Battery)

| Cut-off V | 3min | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 10h  | 20h  |
|-----------|------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 4.80V     | 135  | 107  | 69.7  | 53.2  | 44.6  | 33.3  | 23.5  | 18.8 | 12.9 | 9.99 | 7.44 | 5.71 | 4.72 | 3.79 | 2.51 | 1.36 |
| 4.95V     | 125  | 100  | 68.3  | 52.8  | 43.9  | 32.9  | 23.3  | 18.6 | 12.7 | 9.92 | 7.40 | 5.68 | 4.68 | 3.78 | 2.50 | 1.36 |
| 5.10V     | 116  | 93.7 | 66.5  | 51.8  | 43.1  | 32.5  | 23.1  | 18.4 | 12.4 | 9.66 | 7.33 | 5.64 | 4.64 | 3.75 | 2.48 | 1.35 |
| 5.25V     | 103  | 84.0 | 61.6  | 48.2  | 41.0  | 31.8  | 22.7  | 18.0 | 12.1 | 9.32 | 7.21 | 5.60 | 4.60 | 3.70 | 2.46 | 1.35 |
| 5.40V     | 86.9 | 74.2 | 55.0  | 44.9  | 39.9  | 30.7  | 22.4  | 17.7 | 11.8 | 8.88 | 7.07 | 5.53 | 4.49 | 3.64 | 2.44 | 1.34 |

### ■Ampere Table(25°C)

(Ampere/Battery)

| Cut-off V | 3min | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h    | 5h    | 6h    | 10h   | 20h   |
|-----------|------|------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|
| 4.80V     | 24.3 | 19.1 | 12.4  | 9.25  | 7.69  | 5.69  | 4.00  | 3.19 | 2.19 | 1.69 | 1.25 | 0.956 | 0.788 | 0.633 | 0.419 | 0.227 |
| 4.95V     | 22.6 | 17.9 | 12.2  | 9.19  | 7.56  | 5.63  | 3.98  | 3.16 | 2.14 | 1.68 | 1.24 | 0.950 | 0.781 | 0.630 | 0.417 | 0.226 |
| 5.10V     | 20.8 | 16.8 | 11.9  | 9.00  | 7.44  | 5.56  | 3.94  | 3.13 | 2.10 | 1.63 | 1.23 | 0.944 | 0.775 | 0.625 | 0.413 | 0.226 |
| 5.25V     | 18.5 | 15.1 | 11.0  | 8.38  | 7.06  | 5.44  | 3.88  | 3.06 | 2.06 | 1.58 | 1.21 | 0.938 | 0.769 | 0.618 | 0.411 | 0.225 |
| 5.40V     | 15.6 | 13.3 | 9.81  | 7.81  | 6.88  | 5.25  | 3.81  | 3.00 | 2.00 | 1.50 | 1.19 | 0.925 | 0.750 | 0.608 | 0.406 | 0.224 |

All mentioned values are average values

## ■ Charging Method

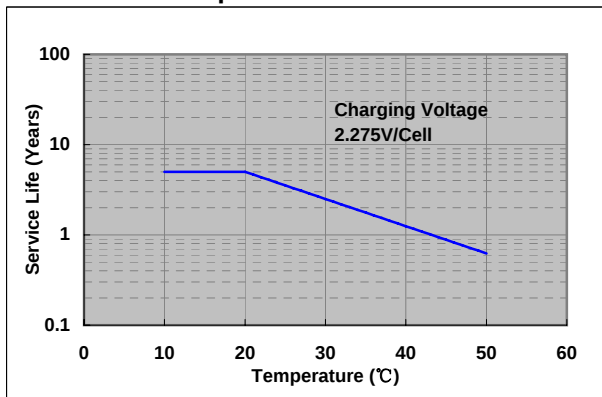
(25°C)

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| Trickle use | Control voltage: 6.80-6.90V<br>Initial current: 0.675A or smaller |
|-------------|-------------------------------------------------------------------|

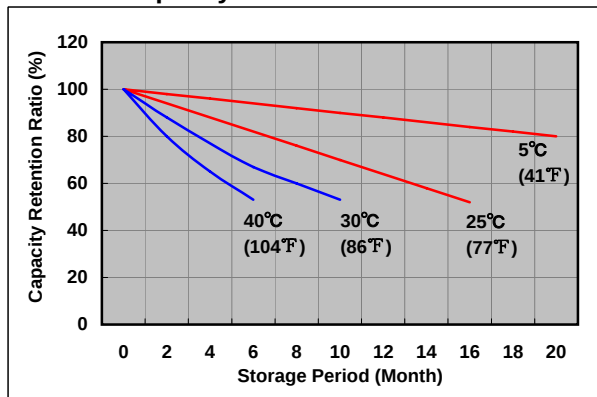
## ■ Cut off voltage

| Discharge current  | 0.225A-0.900A | 0.900A-2.25A | 2.25A-4.50A | 4.50A-9.00A | 9.00A-13.5A |
|--------------------|---------------|--------------|-------------|-------------|-------------|
| Cut off voltage(V) | 5.25          | 5.10         | 4.95        | 4.65        | 4.35        |

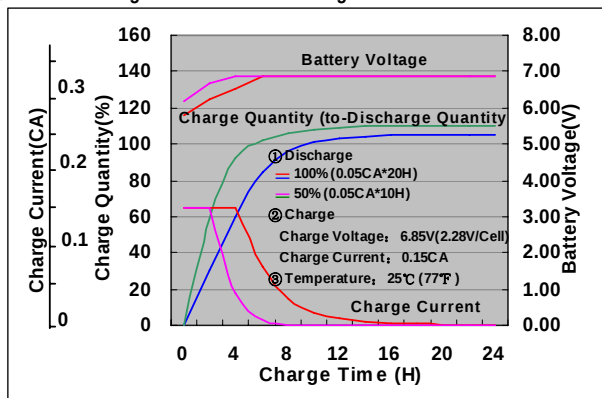
## ■ Influence of Temperature on Trickle life



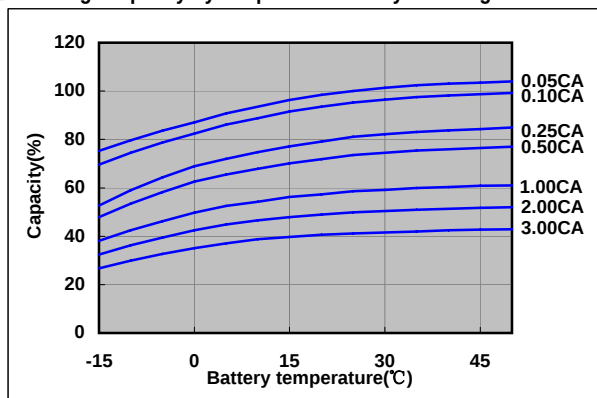
## ■ Residual capacity test result



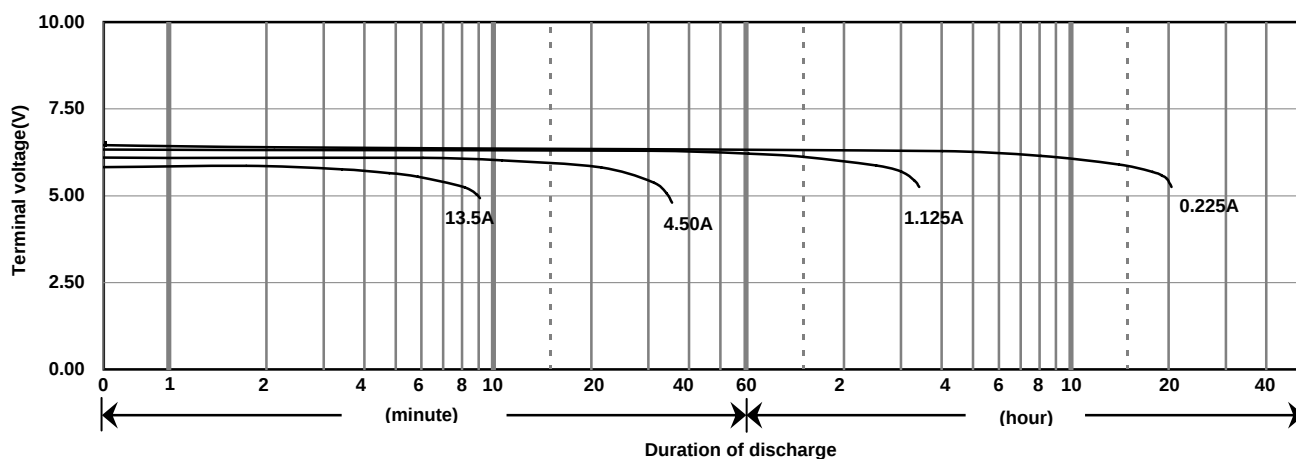
## ■ Constant-voltage constant-current charge characteristics for Trickle use



## ■ Discharge capacity by temperature and by discharge current



## ■ Discharge characteristics(25°C)



### Caution

Due to the potential energy stored in the batteries, Please read 《Precautions for handling the Rechargeable Valve Regulated Lead Acid Batteries》 before using batteries. If improper handling or use of the batteries without understanding 《Precautions for handling the Rechargeable Valve Regulated Lead Acid Batteries》 may result in bodily injury caused by electrolyte leakage, heat generation, or explosion.

## Panasonic Storage Battery (Shenyang) Co., Ltd

NO. 51 Kunminghu Street, Shenyang Economic & Technical Development Zone, 110141 China

Tel: 86 24 25818921

Fax: 86 24 62786318

Website: <http://www.panasonicbattery.cn>

2010.11