

Small Energy Device Cylinder type (UMAC)

RoHS

REACH

Hand Soldering Only

UL1642

Rechargeable battery having long cycle life
High rate charge/discharge is available.



Advantages

① High rate charge/discharge

800mohm low ESR and high rate (10C, 30mA) enabled by optimizing materials and structure

② High safety

No thermal runaway occurs because of its low capacity and chemically stable materials.

This product received safety standard, UL1642 and IEC61233 certification.

③ Long cycle life

Charge (capacity) recovery is over 80% even after 5000 cycles. It can realize maintenance free design.

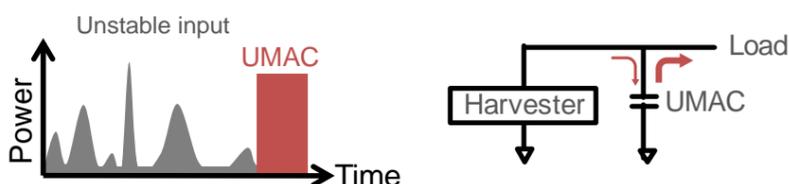
④ Compact and lightweight

Package size: $\phi 4 \times 12\text{mm}$, Weight: 0.29g

Applications & Benefits

1. Energy Harvesting Systems

- Charge/discharge in wide input/output range
- Long working time due to low leakage current
- Quick start without pre-charging due to low leakage current
- Enables maintenance free

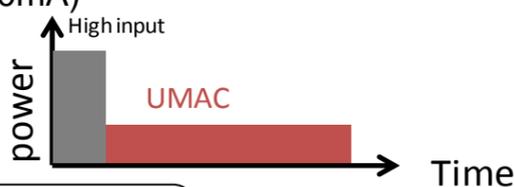


Application Example:

- ✓ Solar battery charger equipment
- ✓ Sensor node with wireless sensor network in combination with micro and macro energy harvesting systems

3. Small power equipment

- Can be charged with High Input(10C,30mA)
- Quick start due to high Input
- Permanent use due to long cycle life
- High safety due to low capacity

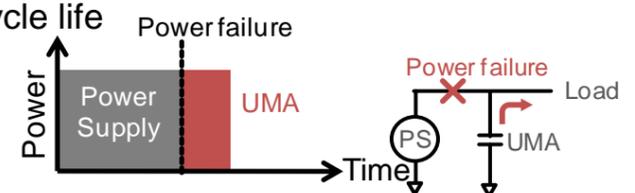


Application Example:

- ✓ Electric pen
- ✓ Wearable equipment

2. Backup

- Can backup system during replacing main battery
- Long backup time over 30sec
- High power discharge is available
- Long cycle life



Application Example:

- ✓ Handy terminal / barcode reader
- ✓ POS (payment terminals, etc.)
- ✓ Emergency call or transmitter (medical equipments such as nurse call, industrial equipments using ISM band, etc.)
- ✓ Other battery powered equipments

For more details, please visit our website.
Application notes, technical notes, FAQs are available.

<http://www.murata.com/en-global/products/smallenergydevice/uma>



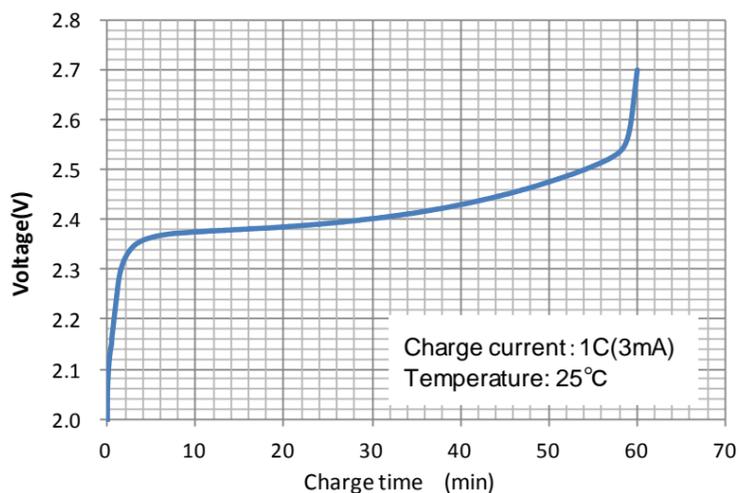
Specifications

| | | | |
|--------------------------|--------------------|-----------------------|----------|
| Type | UMAC040130A003TA01 | Size | |
| Nominal Voltage | 2.3V | | |
| Charge Voltage | 2.7V | | |
| End-of-discharge Voltage | 1.8V | | |
| Capacity | 3mAh (10F) | | |
| ESR | 800m Ω | Operating Temp. range | -20~70°C |

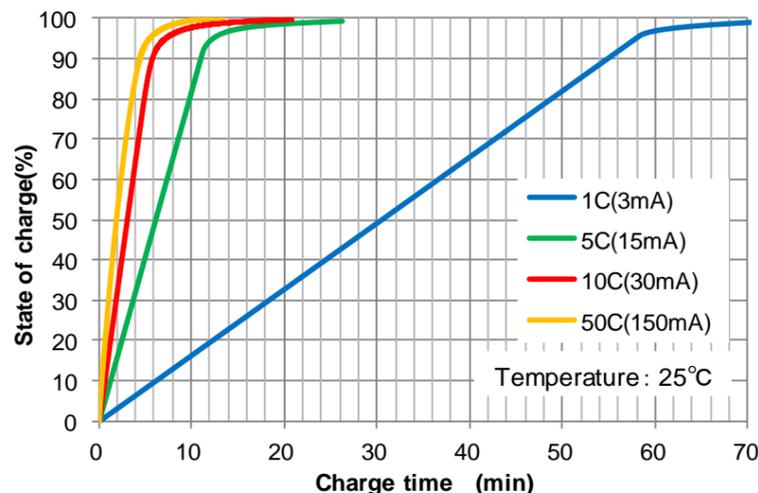
Characteristics

<Charge Characteristics>

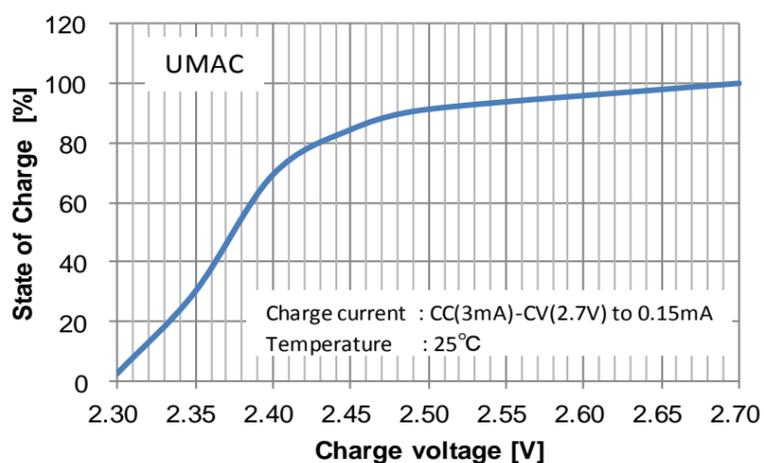
Charge Curve



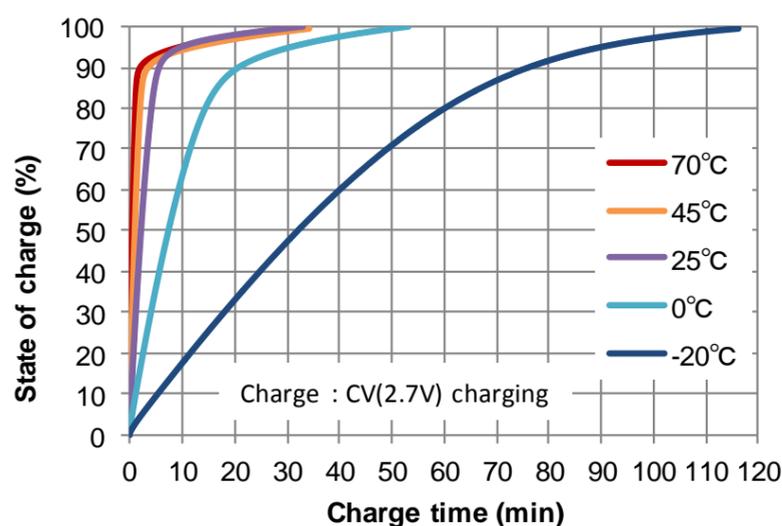
SOC : Current Characteristics



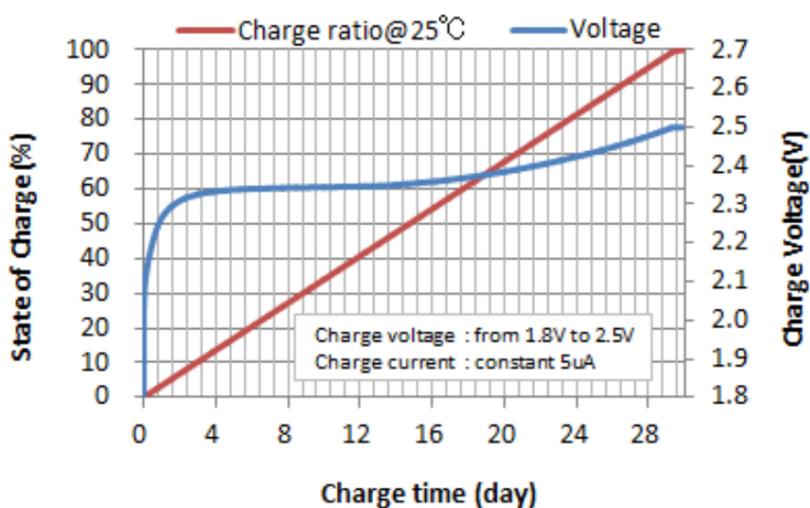
SOC : Charge Voltage Characteristics



SOC by CV Charge: Temperature Characteristics

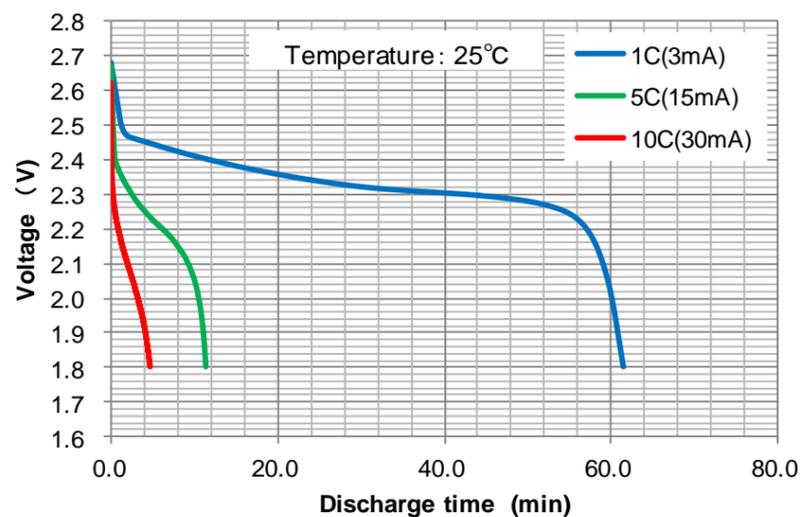


SOC by 5 μ A Current Charge

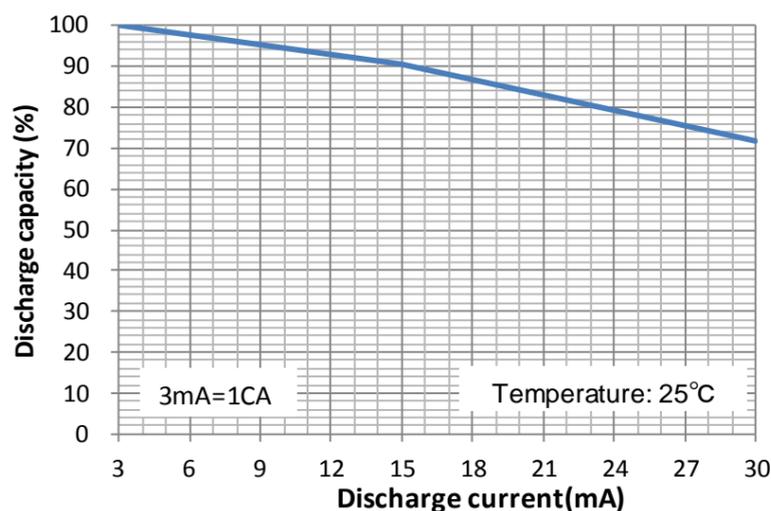


<Discharge Characteristics>

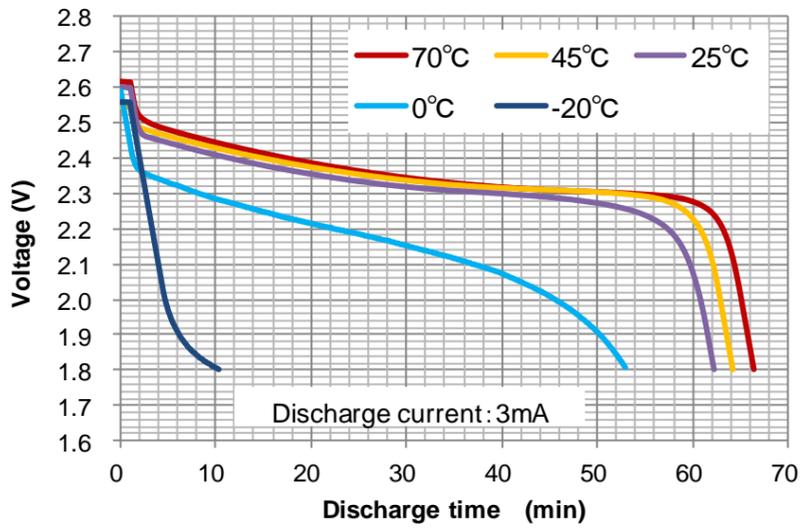
Discharge: Current Characteristics



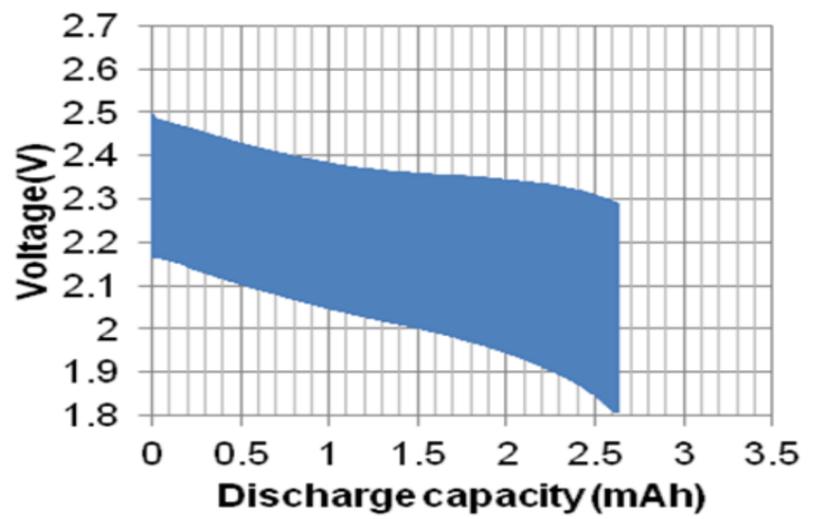
Discharge Capacity: Current Characteristics



Discharge Temperature Characteristics

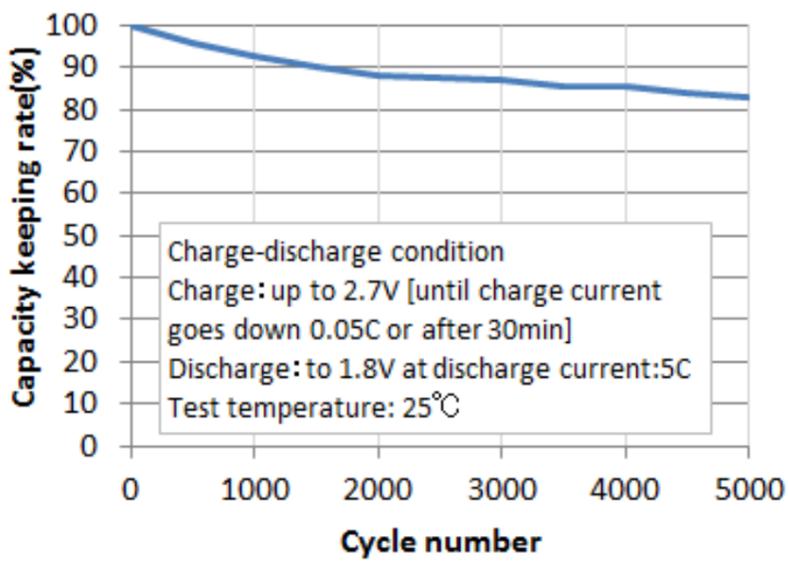


Pulse Discharge Characteristics at -20°C (the cycle of 30mA, 10msec discharge & Rest 15sec.)

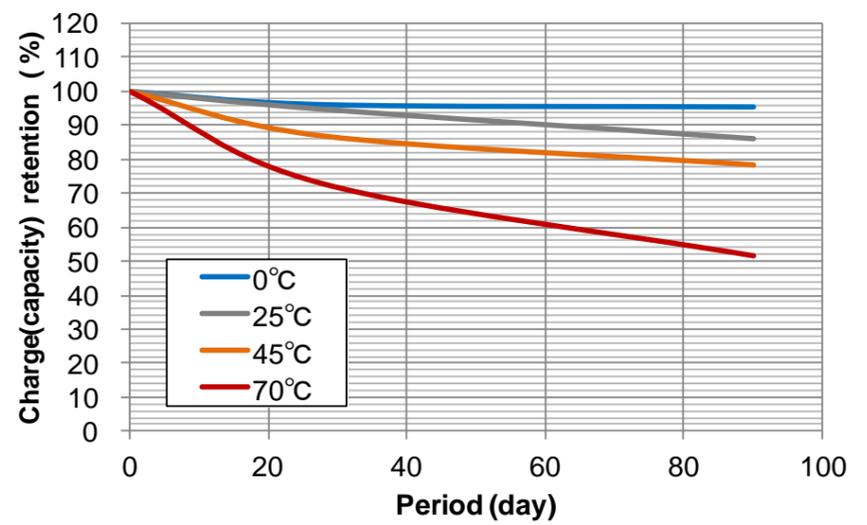


<Other characteristics>

Cycle Characteristics



Charge (Capacity) retention



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