

System backup during battery replacement ~Cutting time loss caused by OS reboot~

RoHS

REACH

Hand
Soldering
Only

1. Overview

A system of a battery powered device needs to be shut down when replacing the battery. It causes time loss for rebooting OS. However, time loss is fatal to medical, security or industrial equipments. Therefore battery replacement without shutting down the system or OS (Hot swap) is needed.

Murata's small energy device (UMA series) can be optimally used as an auxiliary power supply for backup the system, comparing to other existing storage devices such as supercapacitors or lithium ion batteries. Using UMA series, you can eliminate time loss caused by OS or system shut down in small space.

2. Applications

- Handy terminal / barcorde 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

3. Benefits and Features

【Benefits】

- ① UMA series contributes to eliminate time loss caused by rebooting OS. Because it can keep the system working and prevent the system or OS from shut down or deep sleep mode.
- ② UMA series can keep the system working in case of battery disconnect caused by accidental drop

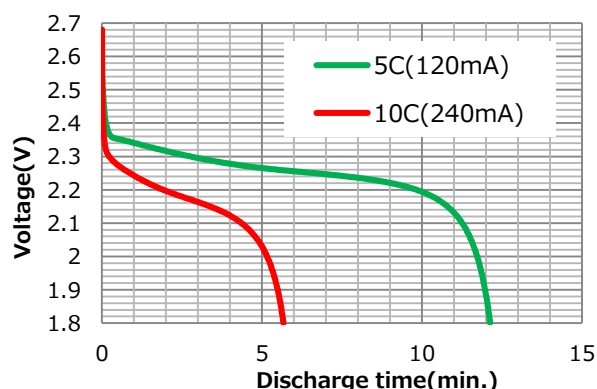
【Features】

- 1) Superior characteristics optimum for backup storage device

<Table 1 .Comparison with other storage devices>

Required characteristic	Supercapacitors or Electrolytic capacitors	UMA series	Li-ion batteries
Backup time Over 30sec	Poor	Good	Good
Backup output power	Good	Good	Poor
Cycle life	Good	Good	Poor

During battery replacement, supercapacitors cannot backup for enough time because they have low capacitance. Also, small Li-ion batteries cannot provide enough output power to keep the system. In addition, they have short cycle life. Comparing with these storage devices, UMA series is the best solution for backup.

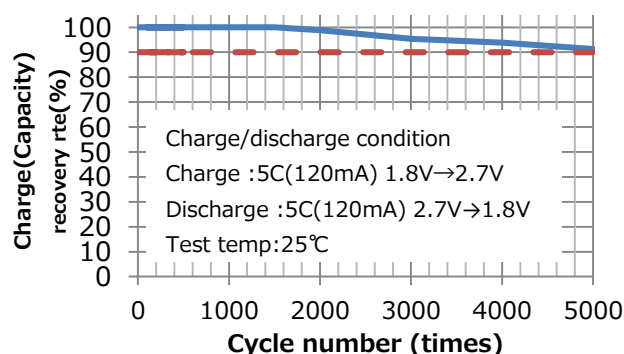


<Fig.1. Discharge characteristic>

*Continuous discharge(UMAC,UMAL each, Ta=25°C)

2) Long Cycle Life

UMA series has long cycle life. Even after 5000 Charge-discharge cycles (depth of discharge: 50 %), the capacity degradation is very small.



<Fig.2. Cycle characteristics (e.g UMAL) >

5. Product Lineup

<Max. continuous discharge current: 30mA>

Part number	Cylinder type (UMAC)
UMAC040130A003TA01	
Nominal voltage/ Charge voltage / Cut-off voltage	2.3V / 2.7V / 1.8V
Nominal capacity / ESR	3mAh / 800mΩ
Max. discharge current	30mA (10 C)
Size / Weight	φ4 x 12 mm / 0.29g

<Max. continuous discharge current: 240mA>

Part number	Thin laminate type (UMAL)
UMAL361421B024TA01	
Nominal voltage/ Charge voltage / Cut-off voltage	2.3V / 2.7V / 1.8V
Nominal capacity / ESR	24mAh / 100mΩ
Max. discharge current	240mA (10 C)
Size / Weight	21 x 14 x 3.6 mm / 1.3g

If higher discharge current is needed, please contact your local Murata sales representative.

6. Technical Support

Sample

- Please contact Murata sales or distributors.

Technical support

- Please access our website for more details.

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

