

Innovative solutions for battery of medical device infusion pumps and controllers by UMA series

~ High power backup, long backup time and long cycle life ~



1. Description

Murata's small energy device (UMA series) has high capacity in a small package. When using it as an auxiliary power supply instead of capacitors at the time of power failure, it can backup system for much longer time.

2. Applications

· Infusion pumps and controllers (IEC60601-2-24 certified) e.g.) UMA series are good solution for activating alert and cutting off infusion, when medical device power shut down.

3. Benefits

(1) High capacity and High output/input power

UMA series has about 200 times higher capacity than that of Murata's supercapacitor*1 in a small package. Therefore, as an auxiliary power supply, it is suitable for long time backup such as keeping/activating system operation. Furthermore because of its low ESR, UMA series can drive high load which coin type batteries cannot support.

*1) Comparison UMAL361421B024TA01 with Murata's supercapacitor P/N: DMF3Z5R5H474M3DTA0.

(2) 2.3V Flat voltage characteristic

No complicated power circuit is needed because discharge voltage is stable. It contributes to simplify the circuit or reduce cost.

(3) Charge (capacity) recovery rate of 90% or higher after 5,000 cycles*2

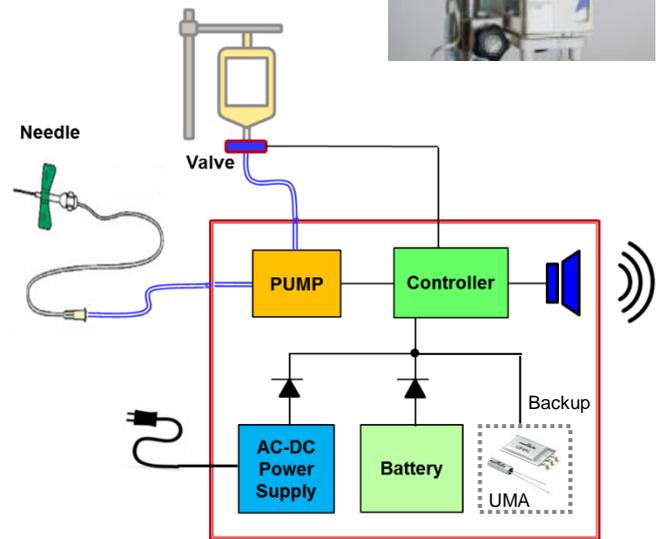
UMA series enables to make devices maintenance-free because it can withstand repeated charge-discharge.

*2) UMAL361421B024TA01

< 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

Table 1 shows the comparison of storage devices of similar size used for backup. During battery replacement, supercapacitors or electrolytic capacitors 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.



Infusion Pump Block Diagram

4. Product Lineup

◆ Recommended product

	Thin laminate type (UMAL)
Part number	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

◆ Small size & lower capacity product

	Cylinder type (UMAC)
Part number	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	φ4 x 12 mm / 0.29g

5. Technical Support.

Sample

➤ Please contact Murata sales or distributors.

Technical support

➤ Please access our website for more information.

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

