

Application Note for Energy Harvesting System

RoHS

REACH

Hand
Soldering
Only

1. Description

Murata's small Lithium ion secondary battery (CT04120) can be charged/discharged with wide input/output range. In addition, the leakage current is very low. These features enable you to create small and high efficient harvesting systems.

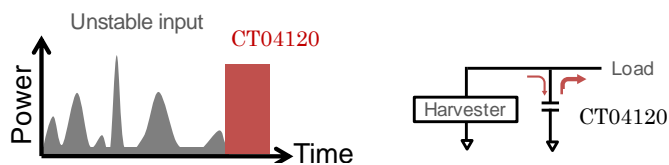


Fig. 1 Operation image

2. Benefits

(1)Very low leakage current

CT04120 can be charged even at low current of several microamperes. Therefore it can be used even with a low-power generator. In addition, very low leakage current characteristic minimizes the loss of the stored energy and allows long time use. (Leakage current: Approximate 200nA)

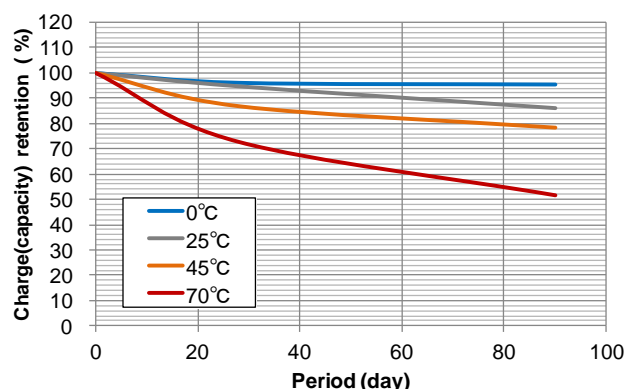


Fig. 2 Capacity retention

(2)Flat voltage characteristic of 2.3V

CT04120 is optimum for operation of low-power consumption ICs because it has stable discharge characteristic of 2.3V. Furthermore, circuit design can be simplified because its output voltage is also stable.

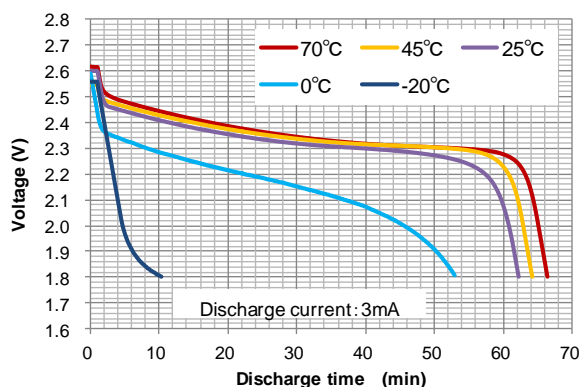


Fig. 3 Discharge temperature characteristic

(3)Short standby time

Because CT04120 is charged to the battery voltage in much shorter time than capacitors, standby time can be reduced.

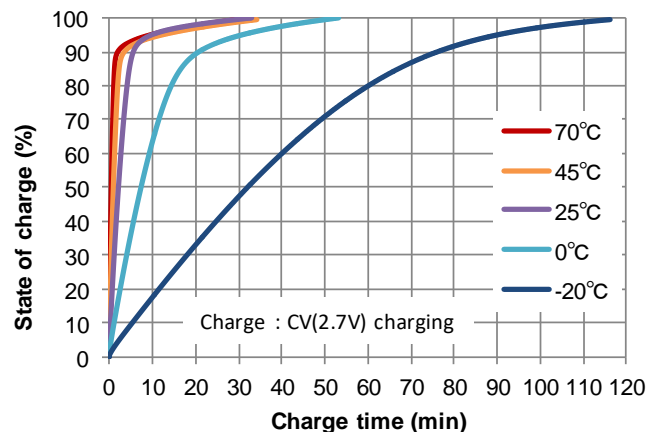


Fig. 4 Charge temperature characteristic

(4)High input-output characteristics

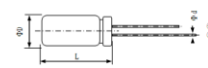
The current rate of CT04120 is 10 times higher than conventional lithium ion batteries. It eliminates the use of peak assist device such as a capacitor and can contribute to simplify your harvesting system.

(5)Simplify the circuit

Charge IC is unnecessary for CT04120 and CV charge is possible for CT04120.

3. Product Lineup

Product name	CT04120	Dimensions	
		ΦD	4mm
Nominal Voltage	2.3V	L	12mm
Charge Voltage	2.7V	Φd	0.45mm
End of discharge Voltage	1.8V	F	1.5mm
Capacity	3mAh	Operating temp	-20~70°C



4. Support

Please access below URL or QR code about CT04120 detail

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