DURA TECH L.L.C.

UC11 series

■ Features

· Slim size and low-resistance.
· Quick charge & discharge.
· High output current.
· Environmentally friendly products.
· RoHS compliant.

■ Applications

· Pulse power demand.
· Hybrid battery packs.
· SSD.
· Wireless communications.
. RFID.

1. Specifications :

Operating Temp.	-40 to +70℃	
Storage Temp.	-40 to +85℃	
Characteristics	Capacitance range	-20% to +80% of initial measured value at +20℃
	Internal resistance range	≦1.5 times of initial measured value at +20℃
Endurance	Capacitance change	±30% of initial measured value (-40 to +70℃)
	Internal resistance change	≦ 2 times of initial specified value (at -20℃)

Note :

1. Capacitance measured at 10mA discharged current from capacitor operation voltage to zero.
2. ESR @1 KHz measured by 0.25mA sinusoidal wave. The period of sine wave is 1 mini-second (1 KHz frequency).
3. Not allowed to go through reflow and wave solder process.
4. Hand Soldering temperature 450℃ < 6 sec.

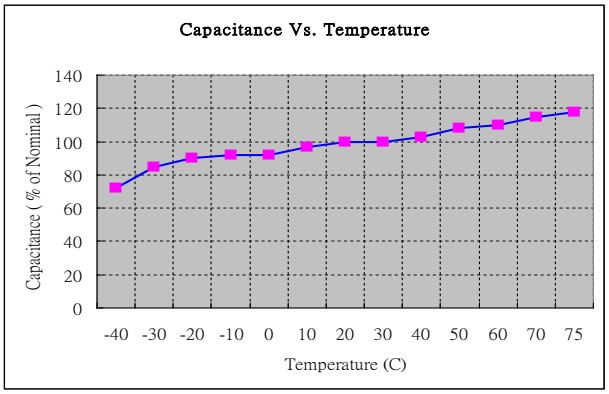
P/N	Nominal Voltage (V)	Max. Voltage (V)	Typical ESR[2] (Ω)	Capacitance[1] (mF)	Leakage Current (mA)	Surge Voltage (V)
UC11040050V02S	4.2	4.5	1.2	5	< 0.01	4.8

2. Part Numbering System :

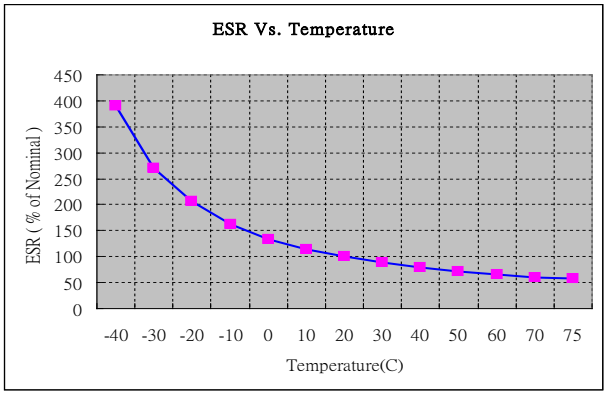
UC	11	04	0050	V	02	S
DURA	Body Size 11 = 11mm x 11mm	Nominal Voltage 04 = 4.2V	Capacitance code 0050 = 5mF	Package V = 1111	Thickness 02 = 0.25mm	Lead Format S = SMD

3. Electrical Characteristics :

(a) Capacitance vs. Temperature

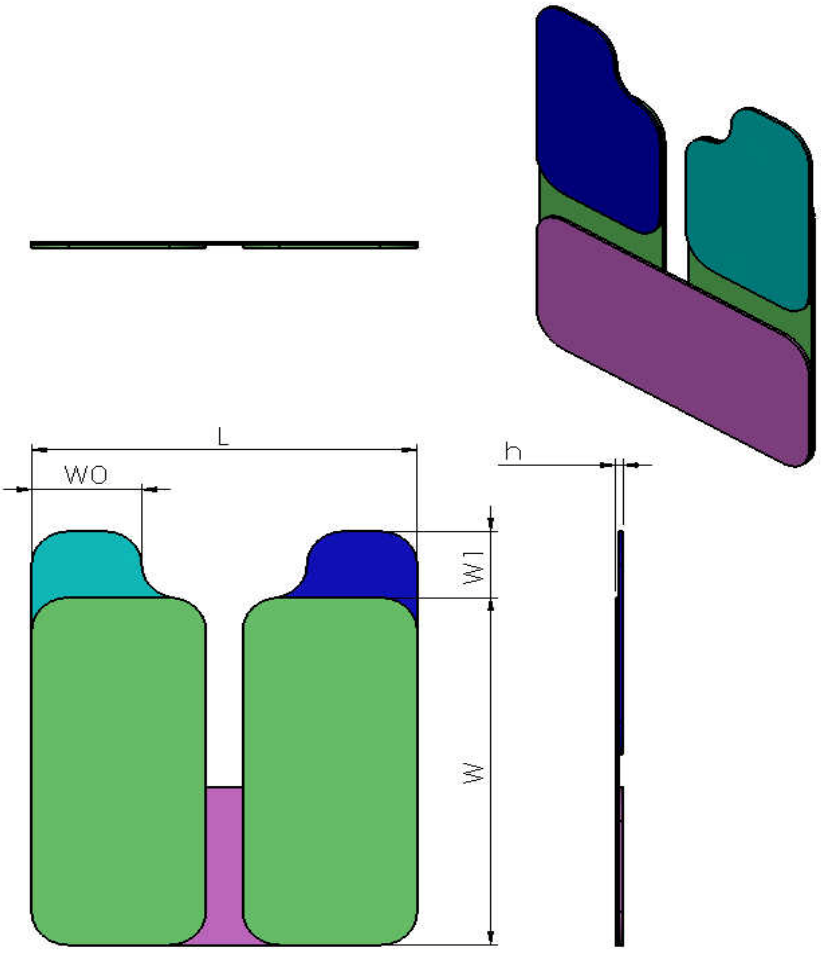


(b) ESR vs. Temperature



4. Mechanical Specifications :

4.1 Dimensions (mm) :



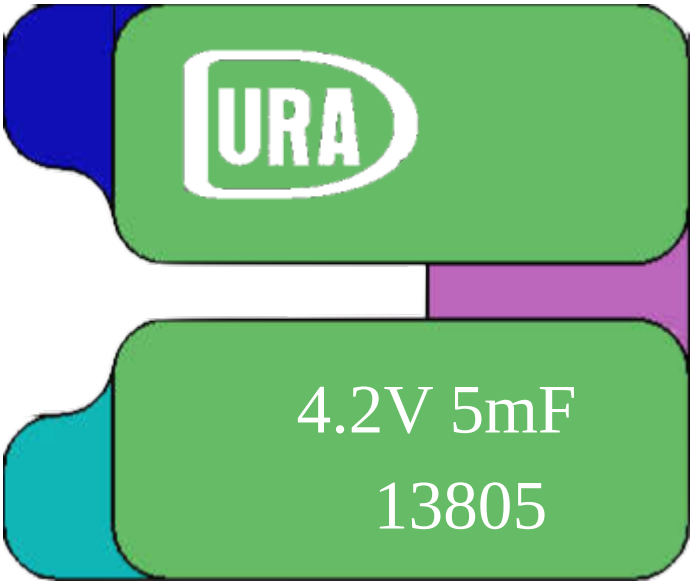
P/N	L	W	W0	W1	H1
UC11040050V02SS	10.5±**0.3**	10.5±**0.2**	3.0±**0.1**	2.0±**0.1**	0.25±**0.03**
					Unit : mm

4.2 Label :

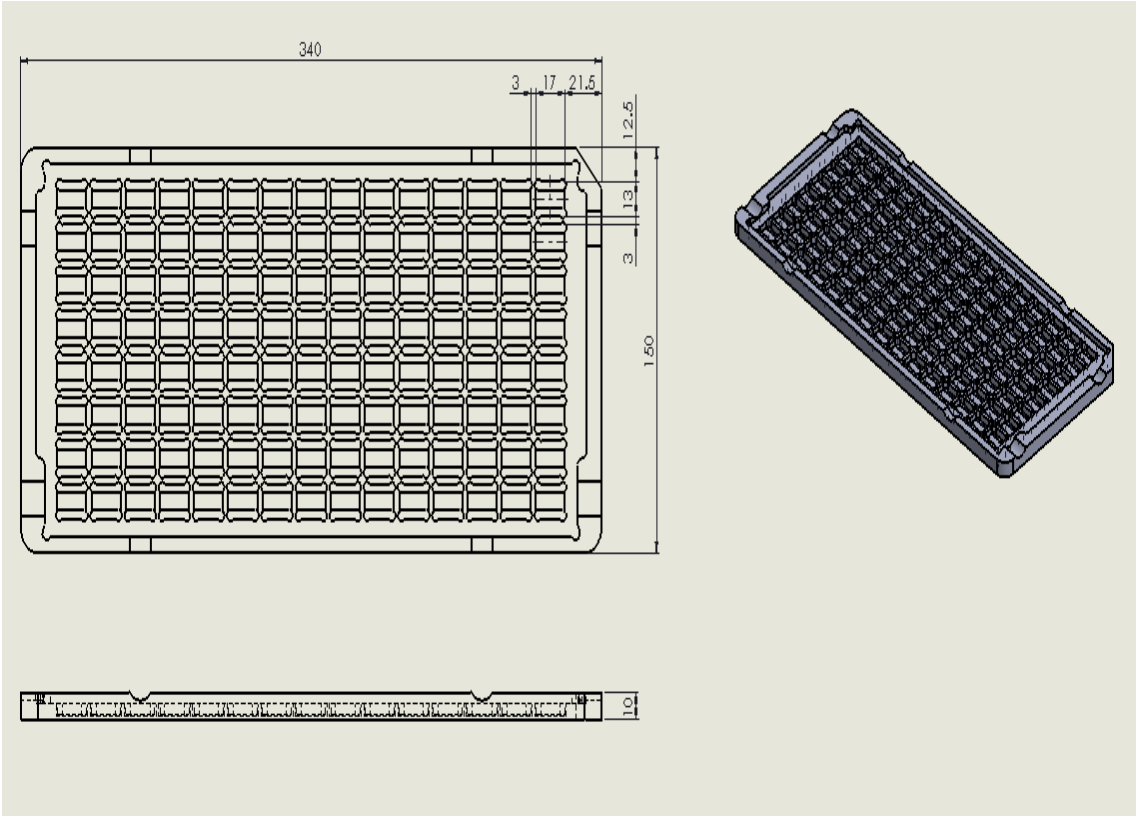
Brand logo →

Specification →

Lot Number →



4.3 Packaging Specifications :



Packaging Quantities :

No. of Row	No. of Columns	Pieces / Tray
8	15	120

5. Qualification Test Summary :

Items	Test	Test Method	Parameter	Limits
1	Initial Cap. Measurement	Discharge cells with a constant current after a full charge.	Cap.	+80% /-20% of rated Cap.
2	Initial DCL. Measurement	Apply rated voltage. Note current after 3 hours.	Leakage Current	Within limit
3	Initial ESR. Measurement	Measurement frequency @1KHz.	ESR	≦ 1.5x of rated ESR.
4	Humidity Life	Maintain at 40℃/95% RH for 1000 hours. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	≦ 2.0 x rated max.
			Cap.	≧ 0.7 x rated
			ESR.	≦ 1.5 x rated
5	Leg pull strength	Apply an increasing force in PIN until leg pulls away.	Yield Force	Not less than 5 pounds
6	Surge Voltage	Step 1. Apply surge voltage for 10 seconds.	DCL	≦ 2.0 x rated max.
		Step 2. Short the cell for 10 seconds.	Cap	≧ 0.7 x rated
		Step 3. Repeat 1 and 2 for 1000 cycles.	ESR	≦ 2.0 x rated
7	Temperature Cycling	Step 1. Ramp oven down to -40℃ and then hold for 30min	DCL	≦ 1.5 x rated max.
		Step 2. Ramp oven up to 75℃,then hold for 30 min.	Cap.	≧ 0.7 x rated
		Step 3. Repeat 1 and 2 for 100 cycles.	ESR.	≦ 1.5 x rated
8	Temperature Characteristics	Maintain at -40℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	DCL≦ 3 x rated. Cap.≧ 0.7 x rated ESR≦ 2.0 x rated
			Cap.	
			ESR.	
		Maintain at -20℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
		Maintain at -10℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
		Maintain at 0℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
		Maintain at 25℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
		Maintain at 40℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
		Maintain at 70℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
		Maintain at 75℃ for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	
			Cap.	
			ESR.	
9	Thermal Shock	Place cells into an oven at -40℃ for 30 min. in less than 15seconds,then move to 75℃ oven for 30min. Repeat the action for 100cycles.	DCL	≦ 2.0 x rated max.
			Cap.	≧ 0.7 x rated
			ESR.	≦ 2.0 x rated
10	Shelf Life	Maintain at 85℃ for 1000 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	≦ 1.5 x rated max.
			Cap.	≧ 0.7 x rated
			ESR.	≦ 2.0 x rated
11	Load Life	Apply nominal voltage at 70℃ for 1000 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	≦ 2.0 x rated max.
			Cap.	≧ 0.7 x rated
			ESR.	≦ 2.0 x rated