



■ Features

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

■ Applications

- Pulse power demand.
- Hybrid battery packs.
- Power tools.
- Car Booster.



1. Specifications:

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

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. Apply rated voltage. Note current after **3 hours**.

P/N	Nominal Voltage(V)	Max. Voltage(V)	Typical ESR ² (mΩ)	Capacitance ¹ (mF)	Leakage Current(mA)	Surge Voltage(V)
UC4016033F40V	16.8	17.1	120	33	< 0.1	19.0

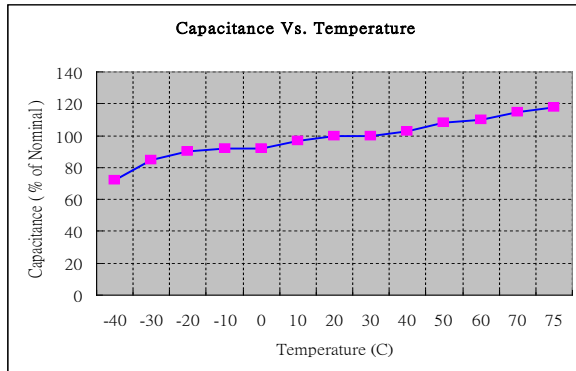


2. Part Numbering System :

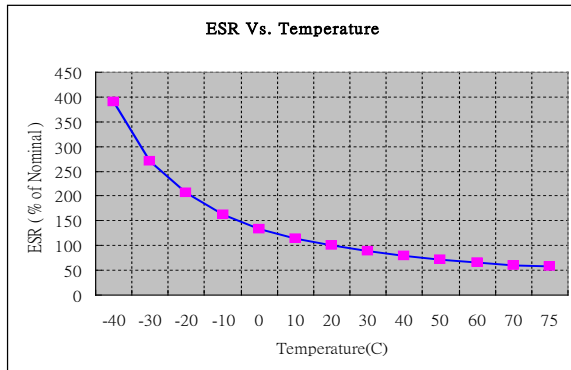
UC	40	16	033	F	40	V
└	└	└	└	└	└	└
DURA	Body Size 40 = 40mm x 26mm	Nominal Voltage 16 = 16.8V	Capacitance code 033 = 33mF	Package F = 4026	Thickness 40 = 4.0mm	Lead Format V = single side

3. Electrical Characteristics :

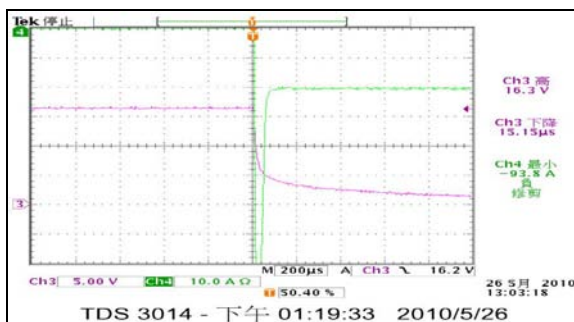
(a) Capacitance vs. Temperature



(b) ESR vs. Temperature



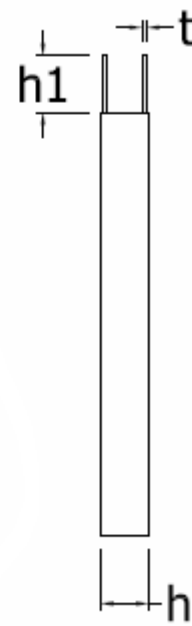
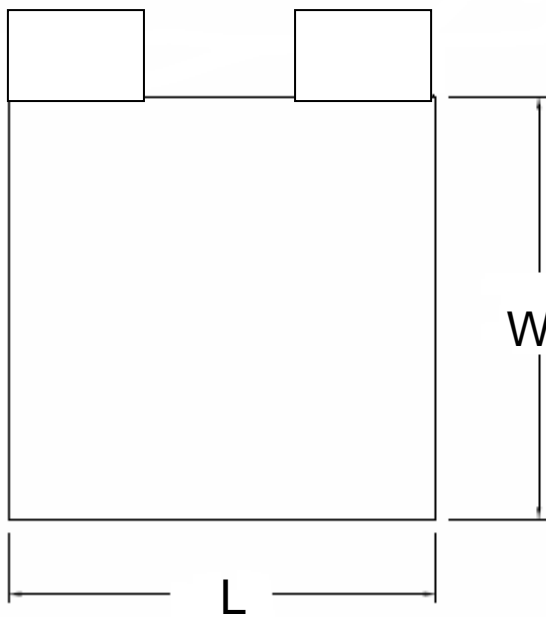
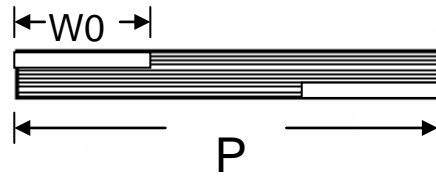
(c) Discharge Current (@ Short Current > 93.8 Amp)





4. Mechanical Specifications :

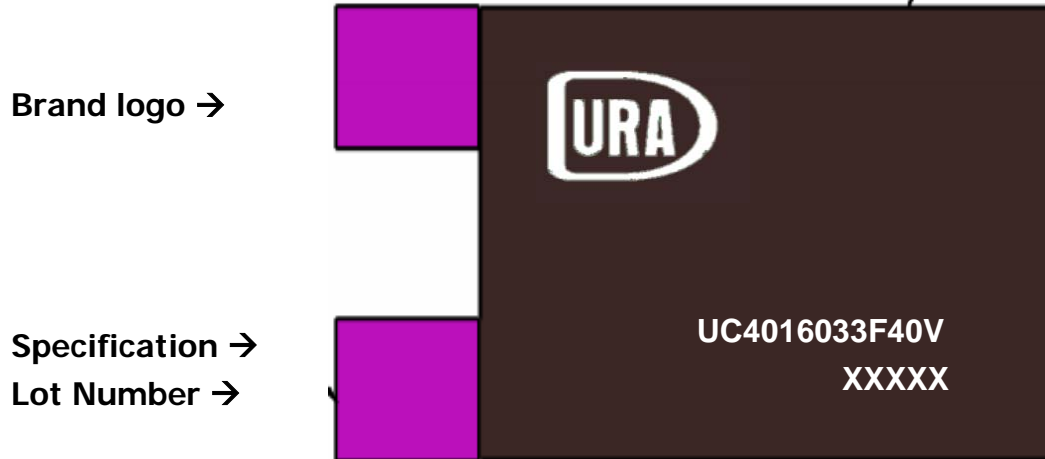
4.1 Dimensions (mm) :



P/N	L	P	W	W0	h	h1	t
UC4016033F40V	26.3±0.3	26.3±0.3	40.3±0.3	8.0±0.2	4.0±0.3	10.0±0.2	0.354±0.05
The lead material : Nickel Packaging material: PET							Unit : mm

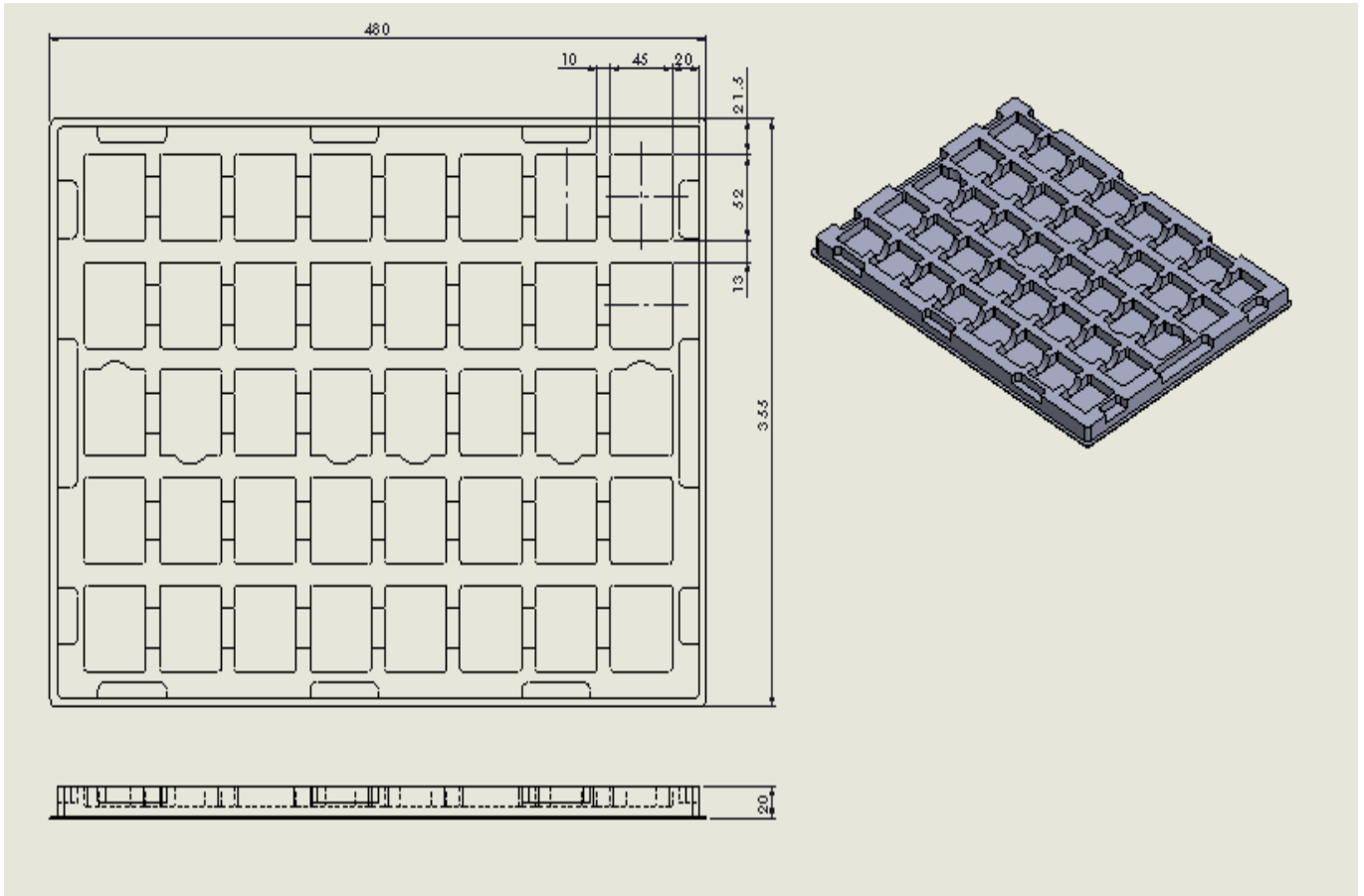


4.2 Lable :





4.3 Packaging Specifications :



Packaging Quantities :

No. of Row	No. of Columns	Pieces / Tray
5	8	40



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°C/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°C and then hold for 30min	DCL	≤ 1.5 x rated max.	
		Step 2. Ramp oven up to 75°C, 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°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	DCL ≤ 3 x rated.	
			Cap.		Cap. ≥ 0.7 x rated
			ESR.		
		Maintain at -20°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL	ESR ≤ 2.0 x rated	
			Cap.		
			ESR.		
		Maintain at -10°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL		
			Cap.		
	ESR.				
Maintain at 0°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL				
	Cap.				
	ESR.				
Maintain at 25°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL				
	Cap.				
	ESR.				
Maintain at 40°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL				
	Cap.				
	ESR.				
Maintain at 70°C for 4 hour. Allow to cool to room temperature and measure Cap. DCL and ESR.	DCL				
	Cap.				
	ESR.				
Maintain at 75°C 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°C for 30 min.	DCL	≤ 2.0 x rated max.	
		in less than 15seconds, then move to 75°C oven for 30min.	Cap.	≥ 0.7 x rated	
		Repeat the action for 100cycles.	ESR.	≤ 2.0 x rated	
10	Shelf Life	Maintain at 70°C 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°C 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	