CXP(3.0V)Series

www.cda-cap.com

FEATURES

- High power,high energy density
- Long cycle life,maintenance-free
- 3.0V High Operating Voltage
- High reliability
- No Explosion Safety

APPLICATIONS

- Consumer electronics,Smart meter, Back up power, Stand alone or augment existing,energy/power source.

OPERATING TEMPERATURE RANGE

- -40℃ to +65℃ @3.0V
- -40℃ to +85℃ @2.5V

GENERAL SPECIFICATIONS

Item	Performance
Operating temperature	-40°C to +65°C
Capacitance range	0.22F to 600F
Capacitance tolerance	-20%～+50% ;-20%～+20%; -10%～+30%; -0%～+30%
Rated voltage	3.0 V
Surge voltage	3.15 V
Temperature characteristics	Capacitance change: Within ±30% of initial measured value at +25°C Internal resistance: Within ±200% of initial measured value at +25°C
High temperature load time	After 65°C 1000 hours (at:3.0V): Capacitance change: ±30% of initial rated value Internal resistance: Within 3 times of initial specified value
Projected cycle life (From rated voltage to 1/2 rated voltage at 25°C)	After 500,000 cycles: Capacitance change: Within ±30 % of initial rated value Internal resistance: Within 2 times of initial specified value
Humidity characteristic	Relative humidity: 90%~95% /Duration of testing:240 hrs /Temperature:40±2°C Capacitance change: Within ±30 % of initial rated value Internal resistance: Within 2 times of initial specified value
Vibration resistance	Amplitude:1.5mm /Frequency:10~55Hz/X,Y,Z(2hrs) /Duration of testing:6 hrs Capacitance change: Within ±30 % of initial rated value Internal resistance: Within 2 times of initial specified value
Shelf life	After 2 years at 25°C without load, the capacitor shall meet the specified endurance limits.

No. 4, Jifeng Road, Wufeng District, Taichung City, Taiwan. TEL:+86-852-51245795 www.cda-cap.com E-MAIL: zfw@cda-cap.tw

Spec. Date:2022-05-17

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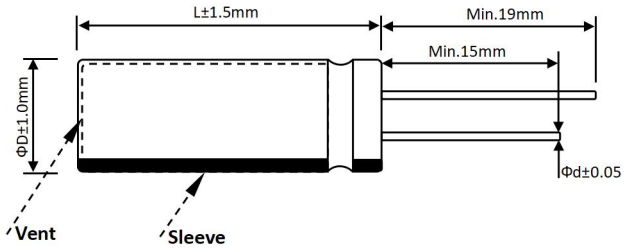
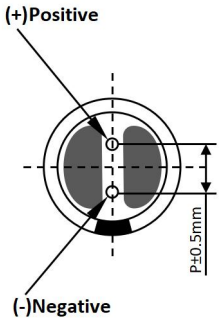
DIMENSIONS

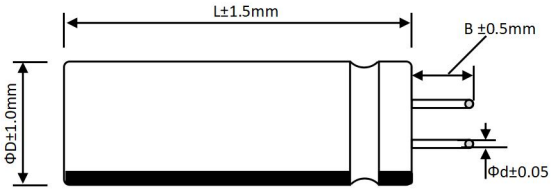
RADIAL LEAD TYPE

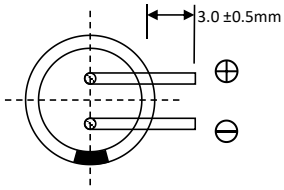




Size(mm)		
ΦD	P	Φd
4	1.5	0.5
5	2.0	0.5
6.3	2.5	0.6
8	3.5	0.6
10	5.0	0.6
13	5.0	0.6
16	7.5	0.8
18	7.5	0.8

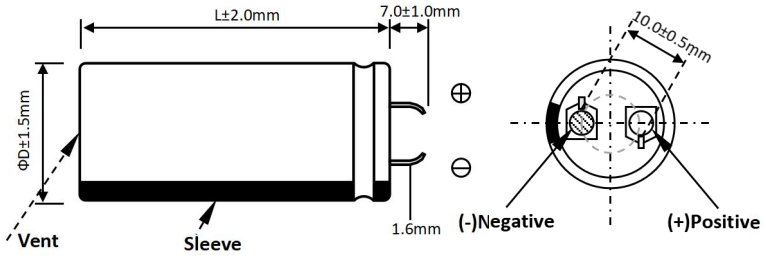
RADIAL BENT LEAD TYPE



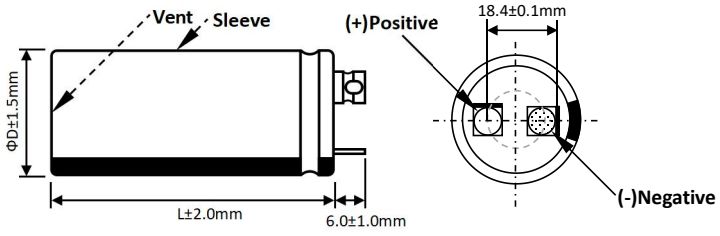


Style	B(mm)
A1	4.0
C1	2.0

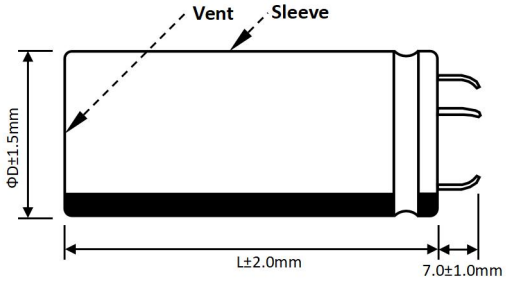
SOLDER PIN TYPE 2-PIN 100~250F PART
Terminal S1 type

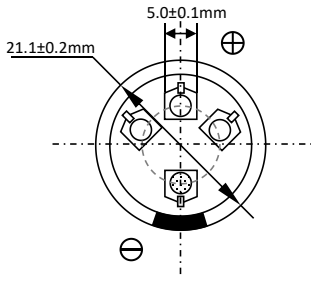


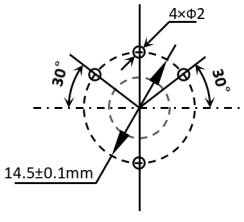
SOLDER PIN TYPE 2-PIN 350~600F PARTS
Terminal Z2 type



SOLDER PIN TYPE 4-PIN 350~600F PART
Terminal S4 type







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STANDARD PRODUCTS

Part Number	Working Voltage (V DC)	Rated Cap. (F)	Dimensions (mm)	Max.ESR		Maximum Leakage (72hrs/mA)	Maximum Peak Current(A)	Maximum Endurance Current(A)	Power Density (W/Kg)	Maximum Energy (W.h)	Energy Density (Wh/kg)
			D*L	ESRAC (1kHz/mΩ)	ESRDC (mΩ)						
Radial Lead(Miniaturized)											
CXP-3R0224R-TW	3.0	0.22	4*10	1000	1820	0.001	0.19	0.09	1028.6	0.0002	0.71
CXP-3R0224R-TW	3.0	0.22	5*10	700	1200	0.002	0.36	0.10	1021.7	0.0002	0.87
CXP-3R0304R-TW	3.0	0.3	4*10	700	1200	0.001	0.25	0.10	1123.1	0.0003	0.79
CXP-3R0354R-TW	3.0	0.35	5*10	600	1000	0.002	0.40	0.12	1253.1	0.0004	1.05
CXP-3R0504R-TW	3.0	0.5	5*12	400	700	0.002	0.44	0.15	1330.0	0.0006	1.08
CXP-3R0604R-TW	3.0	0.6	4*22	700	1200	0.003	0.50	0.16	1350.0	0.0007	1.75
CXP-3R0105R-TWV	3.0	1.0	4*25	550	900	0.003	0.60	0.18	1263.2	0.0013	2.19
CXP-3R0105R-TWX	3.0	1	6.3*12	240	1500	0.006	0.60	0.29	1108	0.0013	1.92
CXP-3R0125R-TW	3.0	1.2	5*22	200	400	0.006	1.29	0.33	3085.7	0.0015	2.68
CXP-3R0355R-TW	3.0	3.5	6.3*22	90	130	0.010	2.71	0.53	4114.3	0.0041	3.93
CXP-3R0455R-TW	3.0	4.5	6.3*25	90	120	0.010	3.0	0.56	3512.2	0.0050	4.07
Radial Lead											
CXP-3R0105R-TW	3.0	1	8*12	180	860	0.006	1.21	0.47	1322	0.0013	1.32
CXP-3R0205R-TW	3.0	2	8*16	100	360	0.010	2.21	0.61	2609	0.0025	2.17
CXP-3R0335R-TW	3.0	3.3	8*20	98	280	0.012	3.31	0.74	2660	0.0041	2.84
CXP-3R0405R-TW	3.0	4	10*20	75	113	0.018	4.20	0.90	4141	0.0063	2.47
CXP-3R0505R-TWX	3.0	5	8*25	90	135	0.015	4.48	0.87	4141	0.0063	3.23
CXP-3R0505R-TW	3.0	5	10*20	75	113	0.018	4.80	0.97	3794	0.0063	2.47
CXP-3R0705R-TW	3.0	7	10*20	70	170	0.020	4.79	0.79	2118	0.0088	2.92
CXP-3R0705R-TWQ	3.0	7	10*25	60	150	0.024	6.44	1.20	2769	0.0088	3.37
CXP-3R0106R-TWX	3.0	10	10*25	55	83	0.030	8.22	1.25	4156	0.0125	3.97
CXP-3R0106R-TWQ	3.0	10	10*30	45	68	0.036	8.96	1.51	4417	0.0125	3.45
CXP-3R0106R-TW	3.0	10	12.5*20	45	68	0.036	8.96	1.42	4033	0.0125	3.15
CXP-3R0126R-TW	3.0	12	12.5*25	40	60	0.048	10.47	1.66	4288	0.0150	3.57
CXP-3R0156R-TWX	3.0	15	12.5*30	35	53	0.062	12.59	1.93	4209	0.0188	3.84
CXP-3R0156R-TW	3.0	15	12.5*25	30	45	0.048	13.43	1.92	5581	0.0188	4.36
CXP-3R0206R-TW	3.0	20	12.5*25	35	47	0.050	13.64	1.66	3981	0.0250	3.91
CXP-3R0206R-TWQ	3.0	20	12.5*30	33	45	0.072	15.08	1.98	4195	0.0250	4.81
CXP-3R0226R-TW	3.0	22	12.5*35	34	48	0.060	14.50	1.97	3103	0.0275	4.58
CXP-3R0256R-TWQ	3.0	25	12.5*35	26	41	0.082	18.99	2.40	4858	0.0313	5.48
CXP-3R0256R-TW	3.0	25	16*25	25	38	0.082	19.35	2.41	3491	0.0313	3.79
CXP-3R0306R-TW	3.0	30	16*30	20	30	0.090	23.68	2.92	3930	0.0375	4.09
CXP-3R0356R-TWX	3.0	35	16*30	20	40	0.070	21.88	3.09	3103	0.0438	5.03
CXP-3R0356R-TW	3.0	35	16*35	18	25	0.105	26.99	3.30	4310	0.0438	4.71
CXP-3R0506R-TW	3.0	50	18*40	18	20	0.075	37.50	3.96	4154	0.0625	4.81
CXP-3R0606R-TW	3.0	60	18*40	15	20	0.100	40.90	2.00	4000	0.0750	5.56
CXP-3R0107R-TWV	3.0	100	18*60	13	20	0.260	50.85	5.30	2523	0.1250	5.69
CXP-3R0127R-TWV	3.0	120	18*60	12	15	0.300	61.45	6.72	2688	0.1370	6.20

*with appropriate voltage derating operating temperature can be extended to 85°C

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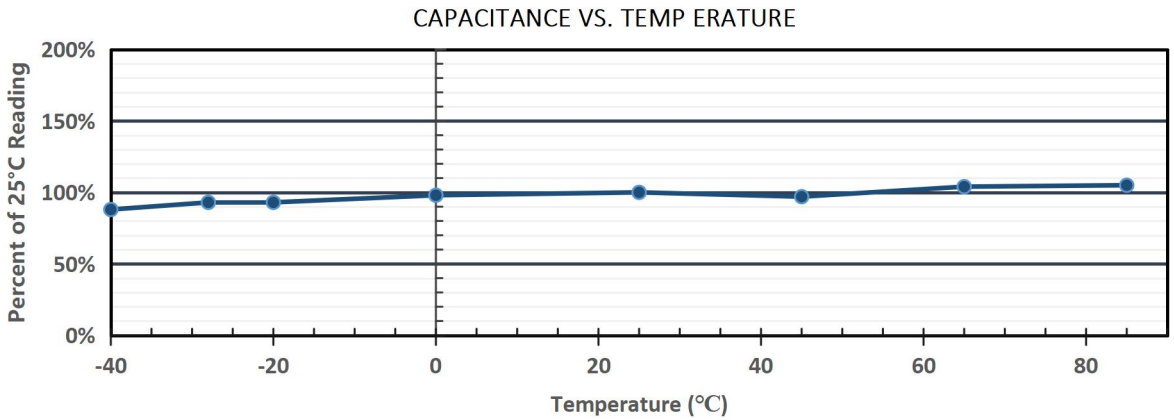
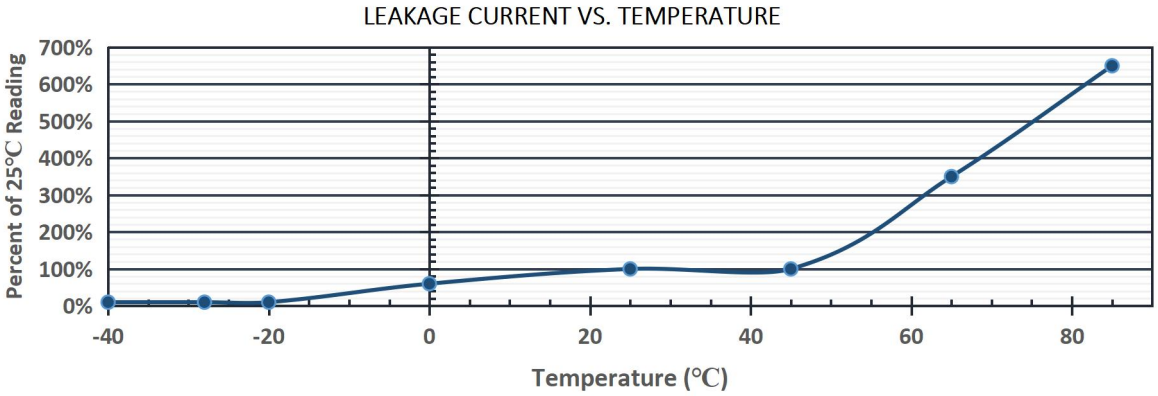
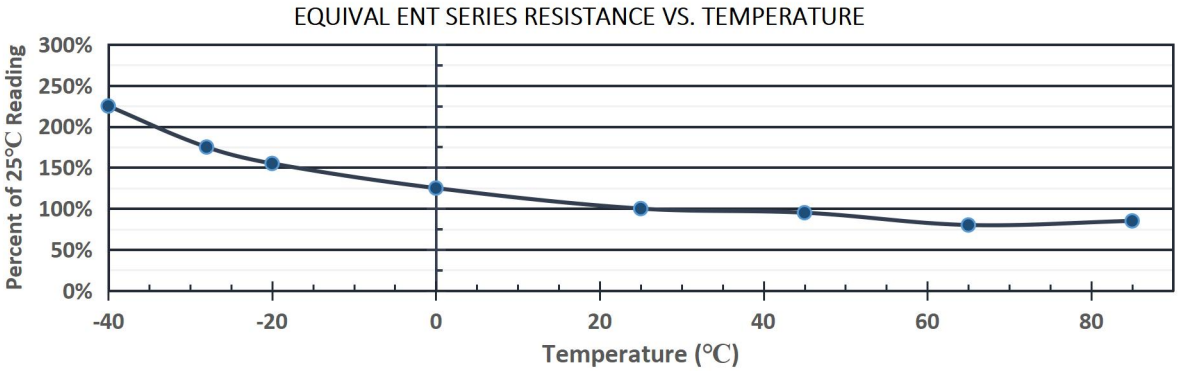
			D*L	ESRAC (1kHz/mΩ)	ESRDC (mΩ)						
SOLDER PIN TYPE 2-PIN											
CXP-3R0107R-TW	3.0	100	22*45	8.0	11.2	0.276	70.75	6.84	4231	0.1250	5.48
CXP-3R0127R-TW	3.0	120	22*50	7.5	10.5	0.345	79.65	7.40	3594	0.1500	5.24
CXP-3R0157R-TWX	3.0	150	22*55	7.0	9.8	0.460	93.40	7.00	3800	0.2000	7.00
CXP-3R0167R-TW	3.0	160	22*55	7.0	9.5	0.460	94.20	8.00	3800	0.2100	7.00
CXP-3R0157R-TW	3.0	150	25*50	7.0	9.8	0.460	91.09	8.22	3150	0.1875	5.36
CXP-3R0227R-TW	3.0	220	30*50	6.0	8.4	0.598	115.87	9.83	2726	0.2750	5.83
CXP-3R0257R-TW	3.0	250	30*55	5.5	7.7	0.667	128.21	10.71	2877	0.3125	6.41
SOLDER PIN TYPE 2-PIN / SOLDER PIN TYPE 4-PIN											
CXP-3R0357R-TW	3.0	350	35*60	3	3.5	1.00	235.90	13.90	2657	0.4300	6.83
CXP-3R0367R-TW	3.0	360	35*60	4.0	5.4	0.98	183.42	14.49	2657	0.4500	5.98
CXP-3R0387R-TW	3.0	380	35*60	3.8	5.1	1.05	193.26	14.86	2751	0.4750	6.21
CXP-3R0407R-TW	3.0	400	35*66	3.5	4.7	1.15	207.61	16.15	2537	0.5000	5.55
CXP-3R0437R-TW	3.0	430	35*66	3.2	4.5	1.24	223.14	16.55	2505	0.5625	5.87
CXP-3R0487R-TW	3.0	480	35*70	3.1	4.4	1.35	234.30	17.17	2405	0.6050	6.13
CXP-3R0507R-TW	3.0	500	35*65	2.9	3.4	1.30	277.70	18.75	2405	0.6250	7.81
CXP-3R0607R-TW	3.0	600	35*70	3	3.5	1.50	290.30	19.95	3760	0.7500	9.14

*with appropriate voltage derating operating temperature can be extended to 85°C

QUALITY AND RELIABILITY







LIFE TIME AND TEMPERATURE PERFORMANCE

The life of a Super Capacitor is impacted by a combination of operating voltage and the operating temperature according to the following equation :

$$LS = L_R \times 2_X \times 2_Y$$

Which is X=（Tm-Ta)/10 Y= (Vr-Va)/0.2

Ls = Expected life of the super capacitor in the application

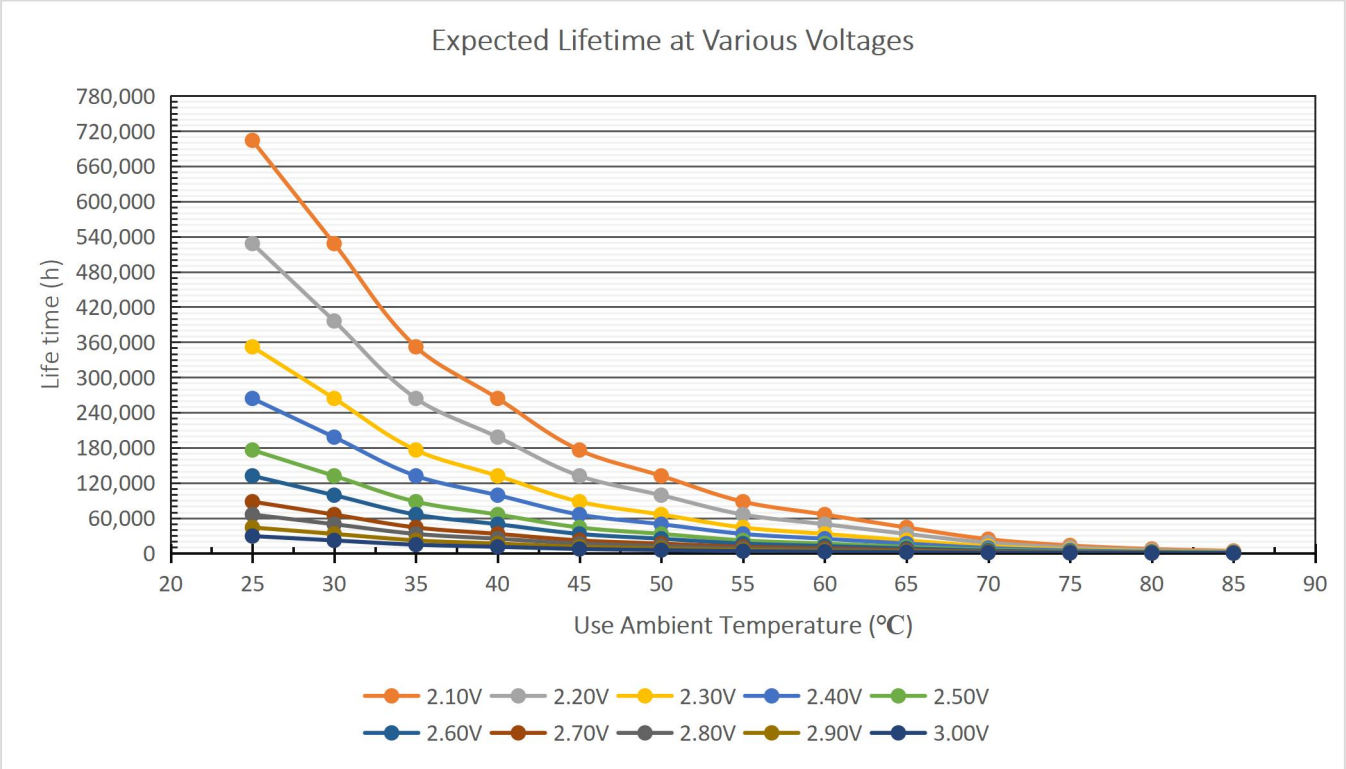
LR = Load life rating of the super capacitor

Tm = Max temperature rating of the super capacitor

Ta = Ambient temperature of the application

Vr = Rated voltage of the super capacitor

Va = Maximum applied voltage on the super capacitor in the application



SAFETY RECOMMENDATIONS

WARNINGS

• To Avoid Short Circuit, after usage or test, SuperCapacitor voltage needs to discharge to ≤ 0.1V
• Do not Apply Overvoltage, Reverse Charge, Burn or Heat Higher than 150°C, explosion-proof valve may break open
• Do not Press, Damage or disassemble the SuperCapacitors, housing could heat to high temperature causing Burns
• If you observe Overheating or Burning Smell from the capacitor disconnect Power immediately, and do not touch

REGULATORY

• MSDS
• RoHS Compliant
• Reach Compliant

TRANSPORTATION

Not subjected to US DOT or IATA regulations
UN3499, <10Wh, Non-Hazardous Goods
International shipping description –
"Electronic Products – Capacitor"

PRECAUTIONS FOR WELDING

When soldering supercapacitors to a PCB, the temperature & time that the body of the supercapacitor sees during soldering can have a negative effect on performance. We advise following these guidelines:
• Do not immerse the supercapacitors in solder. Only the leads should come in contact with the solder.
• Ensure that the body of the supercapacitor is never in contact with the molten solder, the PCB or other components during soldering.
• Excessive temperatures or excessive temperature cycling during soldering may cause the safety vent to burst or the case to shrink or crack, potentially damaging the PCB or other com-ponents, and significantly reduce the life of the capacitor.

HAND SOLDERING

Keep distance between the supercapacitor body and the tip of the soldering iron and the tip should never touch the body of the ca-pacitor. Contact between supercapacitor body and soldering iron will cause extensive damage to the supercapacitor, and change its electrical properties. It is recommended that the soldering iron temperature should be less than 350°C, and contact time should be limited to less than 4 seconds. Too much exposure to terminal heat during soldering can cause heat to transfer to the body of the supercapacitor, potentially damaging the electrical properties of the supercapacitor.

WAVE SOLDERING

Only use wave soldering on Radial type supercapacitors. The PCB should be preheated only from the bottom and for less than 60 seconds, with temperature at, or below, 100°C on the top side of the board for PCBs equal to or greater than 0.8 mm thick.

Solder Temperature (ºC)	Suggested Solder Time (s)	Maximum Solder Time (s)
220	7	9
240	7	9
250	5	7
260	3	5

REFLOW SOLDERING

Infrared or conveyor over reflow techniques can be used on these supercapacitors. Do not use a traditional reflow oven with-out clear rated reflow temperature for supercapacitors.