

DLC

Low leakage current Flat Battery support Super Capacitors



APPLICATIONS

- Extends battery life up to 3 times
- Handheld devices
- DC motors
- RFID systems
- Pulse power
- Automatic Meter Readers
- GPS
- Medical equipment

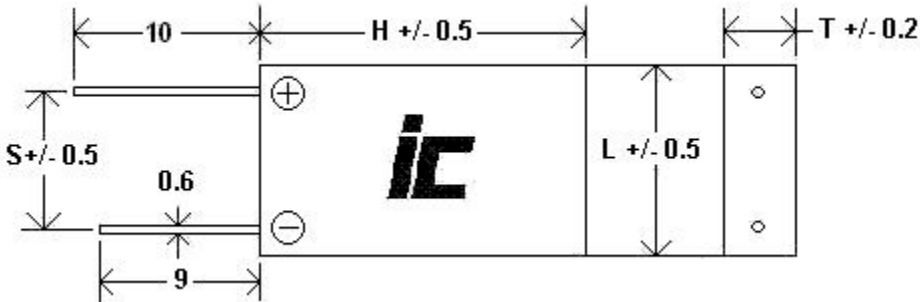
FEATURES

- **Low Leakage current**
- High Capacitance
- Low ESR
- High Voltage
- Compact size
- Environmentally friendly

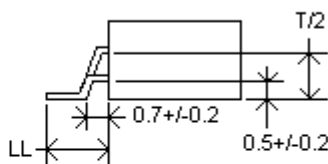
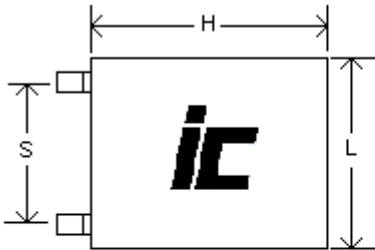
Operating Temperature Range		-40°C to +70°C		
Storage Temperature		-10°C to +40°C, 45 to 75% R.H.		
Capacitance Tolerance		+80%/-20% @ 20°C		
Surge voltage	WVDC	3.5	4.2	
	SVDC	4.0	4.8	
ESR		See part listing 1 kHz, 25°C		
Leakage Current		See part listing (4 hrs, 25°C)		
ESR Change over temperature		150% of nominal at 70°C (typical) 200% of nominal at 70°C (Maximum)		
Life time		1000 hours at 70°C and rated voltage		
		Capacitance change	±30% of initially measured values	
		ESR	<200% of specified maximum value	
		Leakage current	< 200 % of specified maximum value	
Shelf Life		1000 hours at 70C with no voltage applied		
		Capacitance change	±30% of initially measured values	
		ESR	<200% of specified maximum value	
		Leakage current	< 200 % of specified maximum value	
Surge Test		1000 cycles with 115% of rated voltage applied for 10 seconds then short units for 10 seconds		
		Capacitance change	±30% of initially measured values	
		ESR	<200% of specified maximum value	
		Leakage current	<200 % of specified maximum value	
Humidity Test		1000 hours at 70°C and 90-95% RH with no voltage applied		
		Capacitance change	±10% of initially measured values	
		ESR	<150% of specified maximum value	
		Leakage current	<150 % of specified maximum value	

<h1>DLC</h1>	<h2>Flat Super capacitor</h2>
Standard part listing	

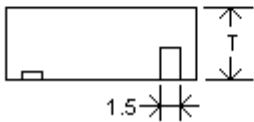
Cap (F)	VDC	IC PART NUMBER	Max current (A)	ESR AC (mΩ, 1kHz)	Max stored energy (mWh)	LC (μA)	Specific Energy Gravimetric DENSITY (mWh/kg)	Specific Energy Volumetric Density (mWh/l)	Weight (grams)	Volume (mL)	Dims LxHxT (mm)	Lead Spacing (mm)
0.01	4.2	103DLC4R2Z	0.021	720	0.0245	1.5	18.85	0.0628	1.4	0.39	12.5x12x2.6	8
0.012	3.5	123DLC3R5Z	0.021	600	0.0204	1.5	15.7	0.0567	1.3	0.36	12.5x12x2.4	8
0.02	4.2	203DLC4R2Z	0.042	360	0.0490	3	30.63	0.0838	1.7	0.585	12.5x12x3.9	8
0.025	3.5	253DLC3R5Z	0.0438	300	0.0425	3	26.6	0.0834	1.6	0.51	12.5x12x3.4	8



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0.01	4.2	103DLC4R2ZGW	0.021	720	0.0245	1.5	18.85	0.0628	1.4	0.39	12.5x12x2.6	8
0.012	3.5	123DLC3R5ZGW	0.021	600	0.0204	1.5	15.7	0.0567	1.3	0.36	12.5x12x2.4	8
0.02	4.2	203DLC4R2ZGW	0.042	360	0.0490	3	30.63	0.0838	1.7	0.585	12.5x12x3.9	8
0.025	3.5	253DLC3R5ZGW	0.0438	300	0.0425	3	26.6	0.0834	1.6	0.51	12.5x12x3.4	8



Lead spacing vs. length (mm)			
Length (L)	12.5	17.5	30.5
Lead spacing (S)	8	11	22.3
Lead Length (LL)	2.7	3.7	3.7



DLC**Flat Super
capacitor**

Soldering Requirements

Supercapacitors are not to be exposed to reflowing soldering.

Hand soldering

At no time is the soldering iron to touch the capacitor body.
Soldering iron temperature is to be limited to 360°C
with an exposure time limited to 8 seconds

Wave soldering

The following table has the recommended wave soldering profiles for Lead free and tin/lead wave soldering processes.

Profile feature	Sn-Pb system	Pb-free (RoHS) system
Solder melting point	183C	217C to 227C
Peak temperature	235C	260C
Contact (Dwell) time in the solder (includes Chip Wave and Maine Wave)	1.5 – 3.5 sec (2.5 - 3 seconds most common)	1.5 – 3.5 sec (2.5 - 3 seconds most common)
Topside Preheat Temperature	75C -100C	105C – 120C
Bottom side Preheat Temperature	about 35C higher than topside	about 35C higher than topside
Maximum Ramp-up rate of topside (to avoid component damage)	2C/sec	2C/sec
Conveyor speed	0.9 – 1.8 m/min	0.9 – 1.8 m/min
Solder pot temperature	240C – 250C	255C – 265C
Ramp-down rate	4C/sec max.	4C/sec max.