

SC0370-300-RSS



APPLICATIONS

- Wind Turbine Pitch Control
- Industrial Backup Power
- Electric Power Tools
- Renewable Energy Systems
- Energy Harvesting
- AGV's



FEATURES & ADVANTAGES

- One Million Cycle Life
- Good Low Temperature Characteristics
- Ultra High Power Density
- Ultra Low Internal Resistance
- 10-15 year calendar life



Specifications

Capacitance	Rated ¹	370F
	Tolerance	-0/+20%
Voltage	Rated	3.0V DC
	Surge ²	3.1V DC
ESR	ESR (DC) - typical	1.8mΩ
	ESR (DC) - maximum initial	2.4mΩ
Current	Maximum leakage ³	0.3mA
	Maximum peak	220A
	Maximum continuous current ($\Delta T = 15^{\circ}\text{C}$) ⁴	21A RMS
	Maximum continuous current ($\Delta T = 40^{\circ}\text{C}$) ⁴	34A RMS
Energy Storage	Maximum energy ⁵	0.46Wh
	Usable energy ⁶	0.35Wh
	Volumetric energy density ⁷	8.86Wh/L
	Gravametric energy density ⁸	7.12Wh/kg
Power Density	Power density ⁹	6923W/kg

Temperature

Temperature Characteristics	Operating Temperature Range ¹⁰	-50°C to +65°C
	Storage Temperature Range	-50°C to +70°C

Standards, Safety & Environmental

Safety	Short Circuit Current	1200A
	<ul style="list-style-type: none"> • This product may vent or rupture if overcharged, reverse charged, incinerated or heated above 100°C • Do not crush, mutilate, or disassemble • Do not dispose of unit in trash 	

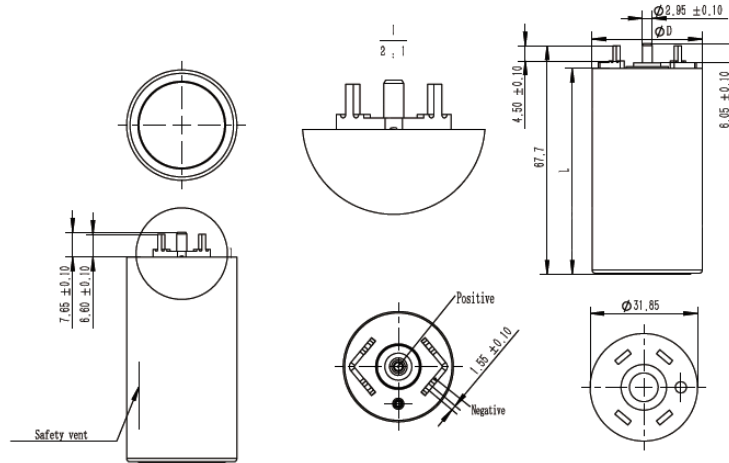
Service Lifetime

Endurance	Product held at rated voltage in 65°C environment for 1500 hours	
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
DC Life	Product held at rated voltage in 25°C environment	
	Projected Life	10+ years
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
Cycle Life	Cycling from rated voltage to 50% voltage under constant current in 25°C environment	
	Projected Life	1,000,000 cycles
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
Storage Life	Stored uncharged in original packaging in 25°C environment	
	Life	4 years

Physical Characteristics

Mechanical	Operation Vibration	IEC60068-2-6, SAE J380
	Impact	IEC60068-2-27, SAE J2464

Outline Drawings:



Weight and Size:

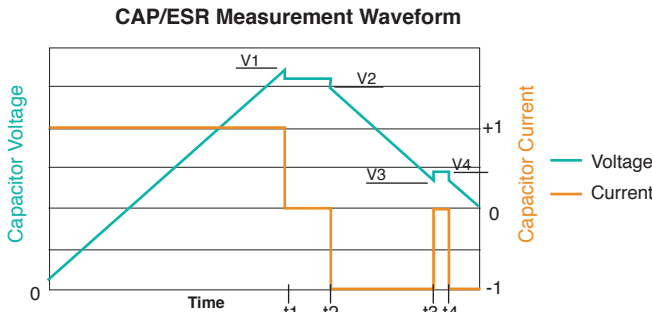
Weight: 65g | Size: L (Max.) 61mm, D (Max.) 33mm

Naming Rules:

Type	Capacitance	Dash	Rated Voltage	Dash	Termination	
SC	Supercapacitor Cell	0370 = 370F	-	300 = 3.0V	-	RSS = Radial Square Solder

Notes:

1. Measure capacitance and DC internal resistance at 25°C under specified test current per Figure 1



$$V1 = V_{\text{rated}} \quad t2 - t1 = 15 \text{ seconds} \quad \text{Capacitance} = I \times (t3 - t2) / (V2 - V3)$$

$$V3 = 0.5 \times V_{\text{rated}} \quad t4 - t3 = 5 \text{ seconds} \quad \text{ESR} = (V4 - V3) / I$$

Figure 1

2. Surge voltage is non-repeatable and duration cannot exceed 1s
3. Corresponding current value after 72 hours of rated voltage at 25°C
4. $\Delta T = I_{\text{rms}}^2 \times \text{ESR} \times R_{\text{ca}}$
5. $0.5CV^2/3600$
6. $0.5C(V_{\text{nom}}^2 - V_{\text{min}}^2)/3600$

$$7. Wh_{\text{usable}} / \left(\frac{\pi r^2 (\text{mm}) \times L (\text{mm})}{1 \times 10^6} \right)$$

$$8. Wh_{\text{usable}} / \text{weight} (\text{kg})$$

$$9. \text{Per IEC62391-2 } P_d = \frac{0.12V^2}{\text{ESR}_{\text{DC}} \times \text{weight} (\text{kg})}$$

10. Test after the sample has been maintained at -50°C for 16 hours and the temperature raised 10°C each time and maintained for 1 hour, then test the sample Figure 2

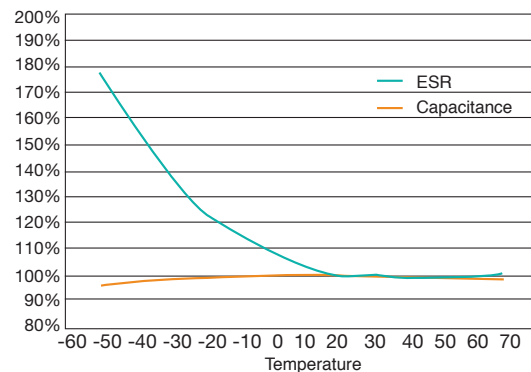


Figure 2

 Specifications are subject to change without notice.