

## SC0350-270-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 <sup>1</sup>	350F
	Tolerance	0/+20%
Voltage	Rated	2.7V DC
	Surge <sup>2</sup>	2.85V DC
ESR	ESR (DC) - typical	2.3mΩ
	ESR (DC) - maximum initial	2.8mΩ
Current	Maximum leakage <sup>3</sup>	0.3mA
	Maximum Peak	220A
	Maximum continuous current ( $\Delta T = 15^{\circ}\text{C}$ ) <sup>4</sup>	21A RMS
	Maximum continuous current ( $\Delta T = 40^{\circ}\text{C}$ ) <sup>4</sup>	34A RMS
Energy Storage	Maximum energy <sup>5</sup>	0.35Wh
	Usable energy <sup>6</sup>	0.27Wh
	Volumetric energy density <sup>7</sup>	6.53Wh/L
	Gravimetric energy density <sup>8</sup>	5.56Wh/kg
Power Density	Power density <sup>9</sup>	4967W/kg

### Temperature

Temperature Characteristics	Operating Temperature Range <sup>10</sup>	-50°C to +65°C
	Storage Temperature Range	-50°C to +70°C

### Safety

Safety	Short Circuit Current	960A
	<ul style="list-style-type: none"> <li>• This product may vent or rupture if overcharged, reverse charged, incinerated or heated above 100°C</li> <li>• Do not crush, mutilate, or disassemble</li> <li>• Do not dispose of unit in trash</li> </ul>	

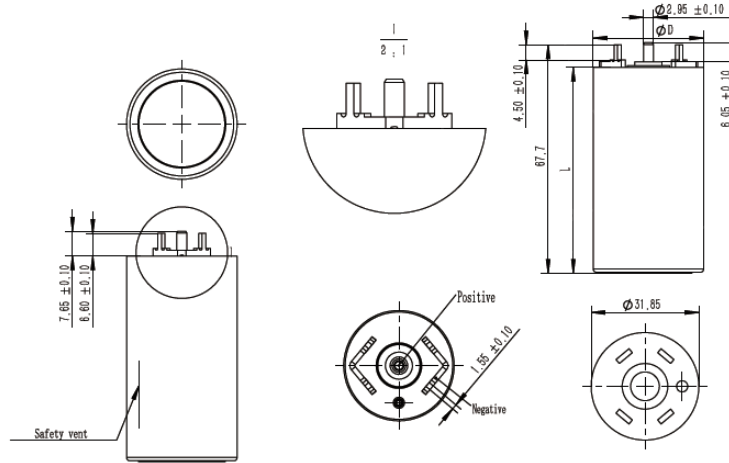
### Service Lifetime

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

### Physical Characteristics

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

### Outline Drawings:



### Weight and Size:

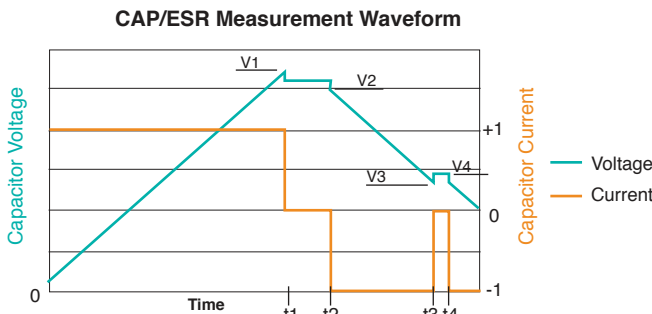
**Weight: 62.9g | Size: L (Max.) 61.5mm D (Max.) 33.3mm**

### Naming Rules:

Type	Capacitance	Dash	Rated Voltage	Dash	Termination
SC   Supercapacitor Cell	0350 = 350F	-	270 = 2.7V	-	RSS = Radial Square Solder

### Notes:

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



$V1 = V_{\text{rated}}$        $t2 - t1 = 15 \text{ seconds}$        $\text{Capacitance} = I \times (t3 - t2) / (V2 - V3)$   
 $V3 = 0.5 \times V_{\text{rated}}$        $t4 - t3 = 5 \text{ seconds}$        $\text{ESR} = (V4 - V3) / I$

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. 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

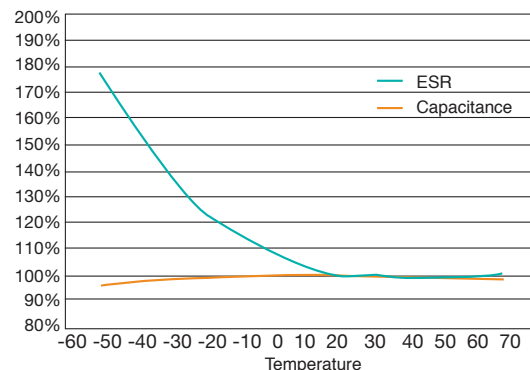


Figure 2

 Specifications are subject to change without notice.