

SC0600-285-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 | 600F |
| | Tolerance | -0/+20% |
| Voltage | Rated | 2.85V DC |
| | Surge ² | 3.0V DC |
| | ESR (DC) - maximum initial | 2.6mΩ |
| Current | Maximum leakage ³ | 1.0mA |
| | Maximum peak | 365A |
| | Maximum continuous current ($\Delta T = 15^{\circ}\text{C}$) ⁴ | 26A RMS |
| | Maximum continuous current ($\Delta T = 40^{\circ}\text{C}$) ⁴ | 41A RMS |
| Energy Storage | Maximum energy ⁵ | 0.68Wh |
| | Usable energy ⁶ | 0.49Wh |
| | Volumetric energy density ⁷ | 8.5Wh/L |
| | Gravimetric energy density ⁸ | 7.0Wh/kg |
| Power Density | Power density ⁹ | 4558W/kg |

Temperature

| | | |
|-----------------------------|---|----------------|
| Temperature Characteristics | Operating Temperature Range ¹⁰ | -40°C to +65°C |
| | Storage Temperature Range | -50°C to +70°C |

Standards, Safety & Environmental

| | | |
|--------|---|-------|
| Safety | Short Circuit Current | 1280A |
| | <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 | |

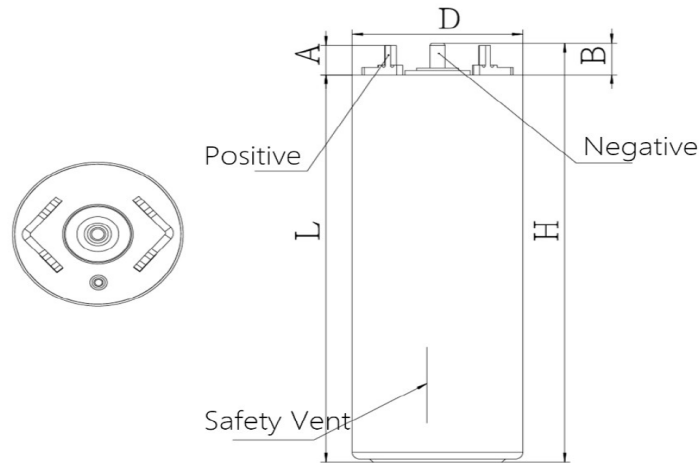
Service Lifetime

| | | |
|--------------|---|------------------|
| 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% |
| Cycle Life | Change in ESR (% increase from maximum initial) | ≤100% |
| | 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% |
| Storage Life | Change in ESR (% increase from maximum initial) | ≤100% |
| | Stored uncharged in original packaging in 25°C environment | |
| | Life | 4 years |

Physical Characteristics

| | | |
|------------|---------------------|--------------------------|
| Mechanical | Operation Vibration | IEC60068-2-6, SAE J2380 |
| | Impact | IEC60068-2-27, SAE J2464 |

Outline Drawings:



Weight and Size:

Weight: 97g | Size: L (Max.) 76mm, D (Max.) 35.5mm, H (Max.) 83mm

Naming Rules:

| Type | | Capacitance | Dash | Rated Voltage | Dash | Termination |
|------|---------------------|-------------|------|---------------|------|----------------------------|
| SC | Supercapacitor Cell | 0600 = 600F | - | 285 = 2.85V | - | RSS = Radial Square Solder |

Notes:

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

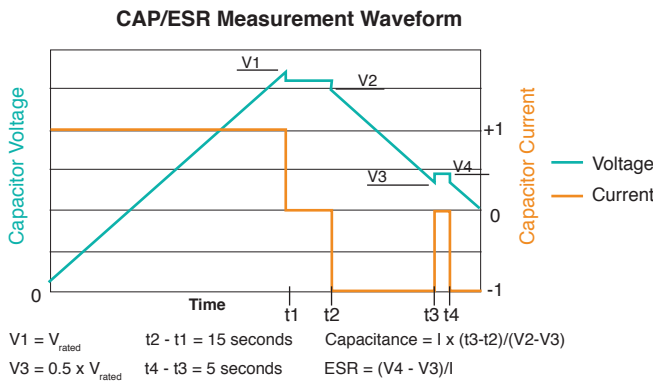


Figure 1

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. $\Delta T = I_{rms}^2 \times \text{ESR} \times R_{ca}$
5. $0.5CV^2/3600$
6. $0.5C(V_{nom}^2 - V_{min}^2)/3600$

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

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

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

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

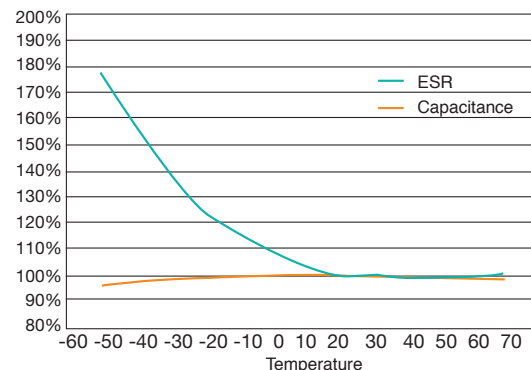


Figure 2



Specifications are subject to change without notice.