



3.0V 600F Supercapacitor

- 3.0V DC output
- 600F Capacitance
- Cycle life of 1 million cycles
- High power density
- Solderable terminals for PCB mounting

ELECTRICAL SPECIFICATIONS

TYPE	C35S-3R0-0600
Rated Voltage V_R	3.00 V
Surge Voltage V_S^1	3.10 V
Rated Capacitance C^2	600 F
Capacitance Tolerance ³	-0% / +20%
DC ESR ²	≤ 1.4 m Ω
Leakage Current I_L^4	≤ 1.5 mA
Self-discharge Rate ⁵	$\leq 20\%$
Max Constant Current $I_{MCC}(\Delta T = 15^\circ C)^6$	34 A
Max Current I_{Max}^7	474 A
Short Current I_S^8	2.0 kA
Stored Energy E^9	0.75 Wh
Energy Density E_d^{10}	7.2 Wh/kg
Usable Power Density P_d^{11}	6.9 kW/kg
Matched Impedance Power P_d^{12}	14.4 kW/kg

THERMAL CHARACTERISTICS

TYPE	C35S-3R0-0600
Working Temperature	-40~65°C
Storage Temperature ¹³	-40~70°C
Thermal Resistance R_{th}^{14}	8.6 K/W
Thermal Capacitance C_{th}^{15}	110 J/K

SAFETY&ENVIRONMENTAL CHARACTERISTICS

TYPE	C35S-3R0-0600
Safety	RoHS, REACH and UL810A
Vibration	ISO16750 Table 12 IEC 60068-2-64(table A.5/A.6)
Shock	IEC 60068-2-27

LIFETIME CHARACTERISTICS

TYPE	C35S-3R0-0600
Accelerated aging life ¹⁶	1500 hours
Designed Life ¹⁷	10 years
Cycle Life ¹⁸	1,000,000 cycles
Shelf Life ¹⁹	4 years

PHYSICAL PARAMETERS

TYPE	C35S-3R0-0600
Mass M	104 g
Terminals ²⁰	Solderable
Dimensions ²¹ Height	87.7 mm
Diameter	35 mm

NOTES:

TYPE

C35S-3R0-0600

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| <ol style="list-style-type: none"> 1. Surge voltage V_S: Absolute maximum voltage, non-repetitive. The duration must not exceed 1 second. 2. Rated capacity C: the rated capacity test method is as shown in Figure 1. The test current is 100 C multiple current, i.e. 0.1 A/F. if the calculated test current is greater than 100 A, 100 A is used. 3. Capacitance tolerance: The actual capacity is 100%~120% of the rated capacitance. 4. Leakage current test procedure: 1) Charge the capacitor to the V_R with a constant current (0.1 A/F, if the calculated current is >100A, then apply 100A). 2) Hold the voltage at V_R for 72h. 3) The current to maintain V_R after 72 h is the leakage current. 5. Self-discharge rate test procedure: 1) Charge the capacitor to V_R with a constant current (0.1 A/F, if the calculated current >100A, then apply 100A). 2) Hold the voltage at V_R for 3h. 3) Floating for 72h. 4) Measure the voltage after 72 h. 6. Max constant working current: $I_{MCC} = \sqrt{\Delta T / (ESR * R_{th})}$, which depends on the natural convection heat dissipation of the shell and the Joule heat balance in static air. 7. Max current: $I_{Max} = 0.5C * V_R / (\Delta t + ESR * C)$, that discharge from V_R to $V_R/2$ in 1 second. 8. Short current: $I = V_R / ESR$, each parameter adopts SI system unit or its conversion unit, This current can't be used as working current. 9. Stored energy: $E = 0.5C * V^2 / 3600$. 10. Energy density: $E_d = E / M$. 11. Usable power density: $P_d = 0.12V_R^2 / (ESR * M)$. 12. Impedance match power density: $P_d = 0.25V_R^2 / (ESR * M)$. 13. Storage temperature: Storage at discharged state (cell voltage < 0.2 V). 14. Thermal resistance: _____, where $h=10 W/(m^2 * K)$, A=Externalsurface area. | <ol style="list-style-type: none"> 15. Thermal capacitance: For the whole capacitor. 16. Accelerated aging life: Under the maximum working temperature of the supercapacitor (65 °C), it is constant at its rated voltage for 1500h, the capacity is kept above 80% of the rated capacity under normal temperature, and the internal resistance is below 200% of the rated internal resistance. 17. Designed Life: keep the supercapacitor at its rated voltage. The life criterion is that the capacity is kept above 80% of the rated capacity, and the internal resistance is below 200% of the rated internal resistance. 18. Cycle life: Charge and discharged the capacitor in the range between V_R and $V_R/2$ with 0.1 seconds rest. The constant test current is 0.1 A/F (if the calculated current >100A, then apply 100A). 19. Shelf Life: within the storage temperature range, keep the discharge state, no load (cell voltage < 0.2 V). 20. Leading end: Tinned terminal, can weld PCB board. 21. Dimensions C35S-3R0-0600 22. Standard marking 23. +Name of manufacturer, part number, serial number. 24. +Rated voltage and capacitance, negative and positive terminals, warning marking. 25. +Stored energy in watt-hours. 26. Mounting recommendations: 27. +Provide sufficient distance between cells to meet the insulation strength.
+Keep enough space around the explosion-proof tank and keep the top clean and avoid mechanical damage. 28. The contents of this document are subject to change without notice. GMCC accepts no liability for the accuracy or credibility of the values and information contained in this document. |
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