

Product Datasheet

33mm \varnothing Ultracapacitors

- Rated voltage 3VDC
- 310F capacitance
- AEC-Q200, Rev. E qualified
- Highest power density based on ultra-low ESR
- Hermetically sealed cell
- Most ruggedized cell due to laser welded design
- Radial terminals for PCB mounting
- High cycle life of 1 million cycles



ELECTRICAL SPECIFICATIONS

Type	C33S-3R0-0310
Rated Voltage V_R	3.00 V
Surge Voltage V_S^1	3.10 V
Rated Capacitance C^2	310 F
Capacitance Tolerance ³	0% / +30%
ESR ² (DC, 10 Hz)	<1.6 m Ω
ESR ² (AC, 1 kHz)	<1.2 m Ω
Leakage Current, typical I_L^4	<1.2 mA
Self-discharge Rate, typical ⁵	<20%
Constant Current ($\Delta T = 15^\circ C$) ⁶	29 A
Max Current I_{Max}^7	311 A
Short Current I_S^8	1.875 kA
Stored Energy E^9	0.39 Wh
Energy Density E_d^{10}	6.15 Wh/kg
Usable Power Density P_d^{11}	10.71 kW/kg
Matched Impedance Power Density P_{dMax}^{12} , 10 Hz ESR	22.3 kW/kg
Matched Impedance Power Density P_{dMax}^{12} , 1 kHz ESR	29.8 kW/kg

THERMAL CHARACTERISTICS

Type	C33S-3R0-0310
Working Temperature	-40 ~ 65°C
Storage Temperature ¹³	-40 ~ 55°C
Thermal Resistance R_{Th}^{14}	10.9 K/W
Thermal Capacitance C_{Th}^{15}	60 J/K

LIFETIME CHARACTERISTICS

Type	C33S-3R0-0310
DC Life 3V and 65°C ¹⁶	1500 hours
DC Life at RT ¹⁷	10 years
Cycle Life ¹⁸	1'000'000 cycles
Shelf Life ¹⁹	4 years

SAFETY & ENVIRONMENTAL SPECIFICATIONS

Type	C33S-3R0-0310
Safety	RoHS, REACH, UL810A and AEC-Q200 ²⁰
Vibration	IEC 60068-2-64 Category 1 (table A.5/ A.6)
Shock	IEC 60068-2-27, 100g 6ms

