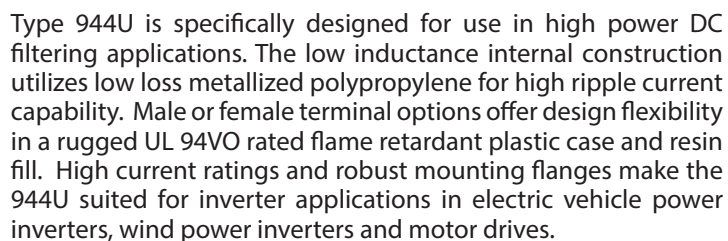


High Current, Low Profile for Inverter Applications



- Low Inductance
- Low Profile
- Low ESR
- High Ripple Current
- High Voltage Ratings

Capacitance Range	33 to 220 μF
Capacitance Tolerance	±10% standard
Rated Voltage	800 to 1400 Vdc
Operating Temperature Range	-40 °C to 85 °C
Maximum rms Current	74A @ 55 °C
Maximum rms Voltage	230 Vac
Test Voltage between Terminal @ 25°C	150% rated DC voltage for 10 s
Test Voltage between Terminals & Case @ 25°C	4 kVac @ 50/60 Hz for 60 s
Life Test	5000 h @ 85 °C, rated voltage
RoHS Compliant	

Construction Details	
Case Material	Plastic UL94V-0
Resin Material	Dry Resin UL94V-0
Terminal Material	Tin Plated Brass

[illegible]

Type 944U Polypropylene, DC Link Capacitors

High Current, Low Profile for Inverter Applications

Part Numbering System

944U	101	K	801	A	A	M
Type	Capacitance	Tolerance	Voltage	Diameter D (mm)	Height H (mm)	Terminal
944U	101 = 100 μ F 700 = 70 μ F 470 = 47 μ F	K = $\pm$ 10%	801 = 800 Vdc 102 = 1000 Vdc 122 = 1200 Vdc 142 = 1400 Vdc	A = 84.5	A = 40 B = 51 C = 64	M = M8 Thd Stud I = M5 Thd Insert

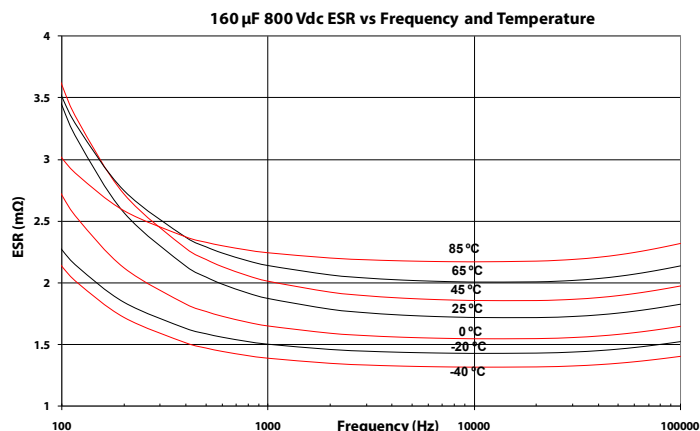
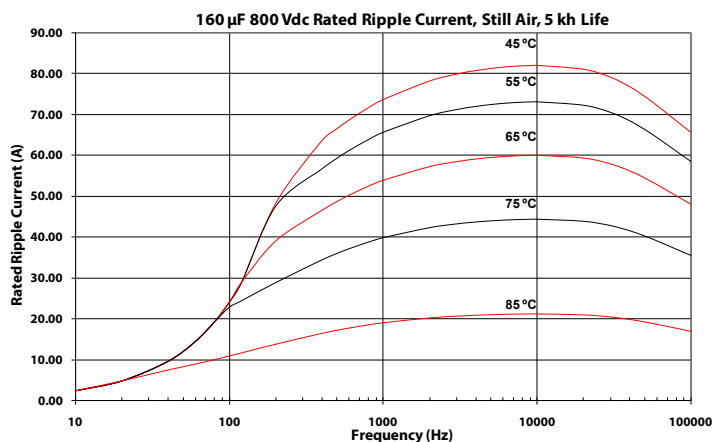
Ratings

NOTE: Other ratings, sizes and performance specifications are available. Contact us.

Catalog Part Number	Cap (μ F)	Rated Voltage (Vdc)	H Height mm	Typical ESR 10kHz (m Ω)	Typical ESL (nH)	Max Irms 55°C (A)	Thermal Resistance Θ_{cc} (°C/W)	Θ_{ca} (°C/W)
944U101K801AA*	100	800	40	0.5	20	74	2.8	5.2
944U161K801AB*	160	800	51	0.8	30	73	3.0	4.5
944U221K801AC*	220	800	64	1.0	40	72	3.1	4.0
944U660K102AA*	66	1000	40	0.6	20	70	2.8	5.2
944U101K102AB*	100	1000	51	0.8	30	68	3.0	4.5
944U141K102AC*	140	1000	64	1.0	40	65	3.1	4.0
944U470K122AA*	47	1200	40	0.7	20	67	2.8	5.2
944U700K122AB*	70	1200	51	1.0	30	65	3.0	4.5
944U101K122AC*	100	1200	64	1.3	40	64	3.1	4.0
944U330K142AA*	33	1400	40	0.8	20	64	2.8	5.2
944U520K142AB*	52	1400	51	1.1	30	60	3.0	4.5
944U700K142AC*	70	1400	64	1.4	40	59	3.1	4.0

* M = M8 Stud I = M5 Insert

Typical Performance Curves



Type 944U Polypropylene, DC Link Capacitors

High Current, Low Profile for Inverter Applications

Expected Lifetime Predictions

Capacitance:	C (μF)
Equivalent Series Resistance:	ESR ($\text{m}\Omega$)
Frequency:	f (kHz)
Ripple Current:	I (A_{rms})
Ambient Temperature:	T_A ($^{\circ}\text{C}$)
Core Temperature:	T_C ($^{\circ}\text{C}$)
Total Thermal Resistance:	Θ ($^{\circ}\text{C}/\text{W}$)
Thermal Resistance case-to-ambient:	Θ_{CA} ($^{\circ}\text{C}/\text{W}$)
Thermal Resistance core-to-case:	Θ_{CC} ($^{\circ}\text{C}/\text{W}$)
Airflow Speed:	v (m/s)
Applied Voltage:	V_A (V_{DC})
Rated Voltage:	V_R (V_{DC})

Determine ESR at Operating Frequency

Use the 10 kHz ESR from the ratings tables.

For operation below 10 kHz, the ESR will need to be adjusted using the following equation: $\text{ESR} - 31.83/(10C) + 31.83/(fC)$.

Determine Thermal Resistance at Operating Frequency and Air Flow

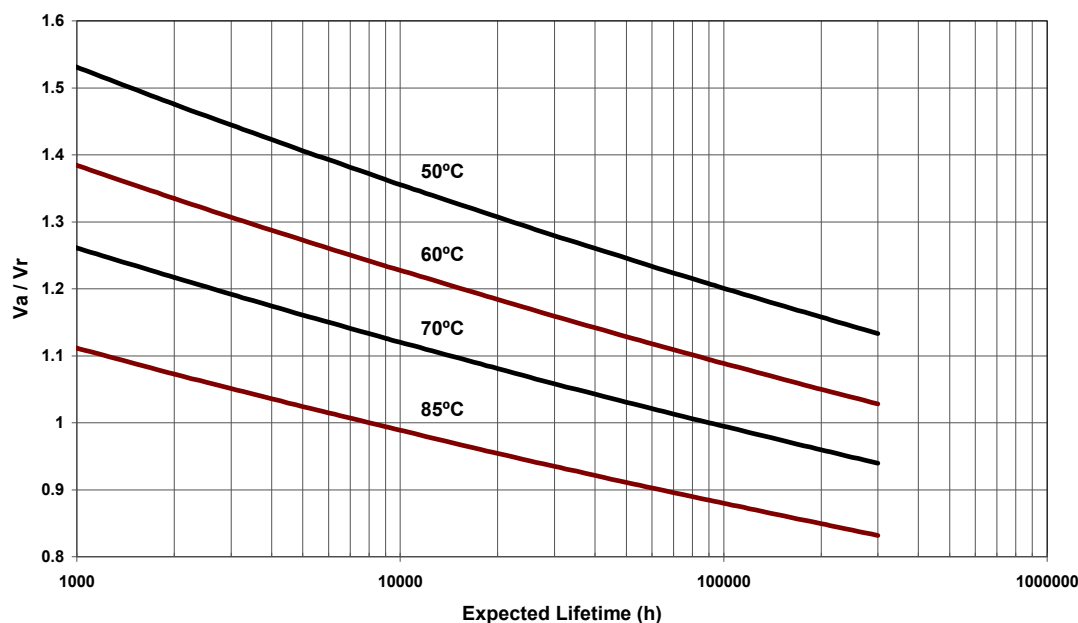
Compute $\Theta = \Theta_{\text{CC}} + \Theta_{\text{CA}}$. In the ratings tables, Θ_{CA} is for still air. For $v = 0$ to 5 m/s, multiply Θ_{CA} by $[(5 + 17.6(0.1^{0.66})) / (5 + 17.6(v + 0.1)^{0.66})]$

Determine Expected Lifetime

Look up Expected Lifetime on the graph using V_A/V_R and $T_C = T_A + I^2 (\text{ESR}/1000) \Theta$

The maximum allowed temperature rise is 40°C and the maximum allowed core temperature is 95°C .

Expected Lifetime vs Hot Spot Temperature and Applied DC Voltage



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