Type BLC Polypropylene Board Mount DC Link Capacitors

PCB Mount Power Film Capacitors



Type BLC series uses the most advanced metallized film technology for long life and high reliability in DC Link applications. This series combines high capacitance and very high ripple current capability needed for today's inverter designs for medium power wind, solar, fuel cells, UPS systems and more.

Highlights

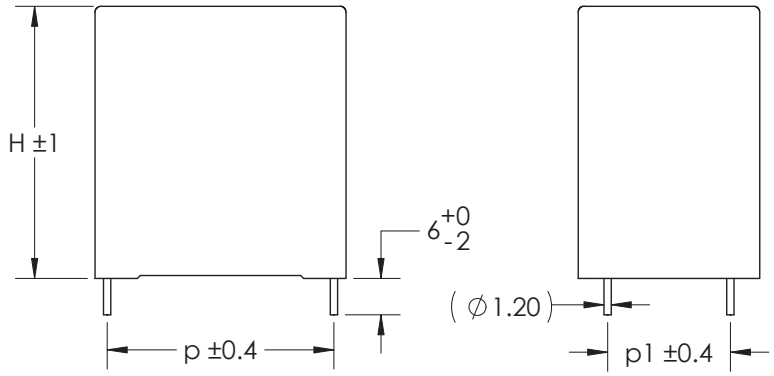
- High capacitance
- High ripple current
- Self-healing

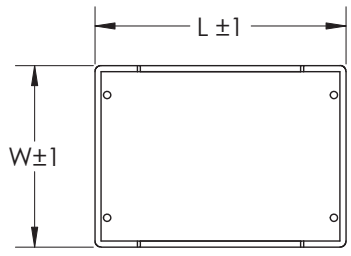
Specifications

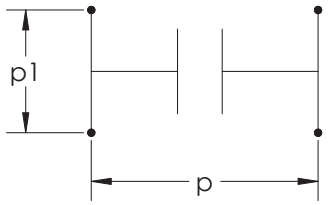
Capacitance Range	8 to 55 µF
Capacitance Tolerance	±5% standard
Rated Voltage	700 to 1100 Vdc
Operating Temperature Range	-45 °C to 85 °C (ambient)
Maximum rms Current	see data tables
Maximum rms Voltage	230 Vac
Test Voltage between Terminals @ 25 °C	150% rated DC voltage for 10 s
Test Voltage between Terminals and Case @ 25°C	2 kVac @ 50/60 Hz for 10 s
Life Test	5000 h @ 85 °C, rated voltage
Reference Standards	IEC 61071
RoHS Compliant	

Dimensions

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







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Part Numbering System

BLC	300	J	901	B4	E
Type	Capacitance	Tolerance	Voltage	Case Type	Case Code
BLC	**080**= 8 µF **150**= 15 µF **300**= 30 µF	**J** = ±5%	**701** = 700 Vdc **901** = 900 Vdc **112** = 1100 Vdc	**B4** = Box 4 Lead	

Case Code	W	H	L	p	p1	d
A	20	40	41.5	37.5	10.2	1.2
B	28	37	41.5	37.5	10.2	1.2
C	24	44	41.5	37.5	10.2	1.2
D	30	45	41.5	37.5	20.3	1.2
E	30	45	57.5	52.5	20.3	1.2
F	35	50	57.5	52.5	20.3	1.2

Ratings

PartNumber	Cap C (µF)	Typ 10 kHz ESR (mΩ)	Current T_A=25 °C Irms (A)	Current T_A=55 °C Irms (A)	Current T_A=75 °C Irms (A)	dV/dt (V/µs)	Peak Current I_{pk} (A)	Thermal Resistance Θcc (°C/W)	Thermal Resistance Θca (°C/W)	Case Area (mm²)	Typical Weight (g)	Case Code
700 Vdc												
BLC150J701B4A	15	5.2	21	15	8	13.5	200	10.0	15.8	6580	30.5	A
BLC200J701B4B	20	3.9	25	17	10	13.0	260	11.4	14.0	7467	36.8	B
BLC220J701B4C	22	3.6	27	19	11	11.8	290	10.0	13.4	7756	37.8	C
BLC300J701B4D	30	2.6	33	23	13	13.0	390	10.0	11.7	8925	46.7	D
BLC450J701B4E	45	3.6	31	22	13	8.5	390	8.0	9.3	11325	59.5	E
BLC550J701B4F	55	2.9	36	25	14	8.9	490	8.0	8.0	13275	69.6	F
900 Vdc												
BLC120J901B4A	12	5.2	21	15	8	15.8	190	10.0	15.8	6580	34.8	A
BLC140J901B4B	14	4.5	23	16	9	16.4	230	11.4	14.0	7467	39.3	B
BLC160J901B4C	16	3.9	26	18	10	15.6	250	10.0	13.4	7756	41.5	C
BLC200J901B4D	20	3.1	30	21	12	16.0	320	10.0	11.7	8925	48.8	D
BLC300J901B4E	30	4.3	29	20	11	10.8	325	8.0	9.3	11325	62.4	E
BLC400J901B4F	40	3.2	35	25	14	10.7	430	8.0	8.0	13275	78.6	F
1100 Vdc												
BLC080J112B4A	8	6.5	19	13	7	20.0	160	10.0	15.8	6580	34.3	A
BLC100J112B4B	10	5.2	22	15	9	20.0	200	11.4	14.0	7467	40.4	B
BLC120J112B4D	12	4.3	25	18	10	19.2	230	10.0	11.7	8925	44.5	D
BLC200J112B4E	20	5.3	26	18	10	13.0	260	8.0	9.3	11325	61.1	E
BLC250J112B4F	25	4.2	30	21	12	13.2	330	8.0	8.0	13275	72.9	F

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Expected Lifetime Predictions

Capacitance:	C (µF)
Equivalent Series Resistance:	ESR (mΩ)
Frequency:	f (kHz)
Ripple Current:	I (A_{rms})
Ambient Temperature:	T_A (°C)
Core Temperature:	T_C (°C)
Total Thermal Resistance:	Θ (°C/W)
Thermal Resistance case-to-ambient:	$Θ_{CA}$ (°C/W)
Thermal Resistance core-to-case:	$Θ_{CC}$ (°C/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: ESR - 31.83/(10C) + 31.83/(fC).

Determine Thermal Resistance at Operating Frequency and Air Flow

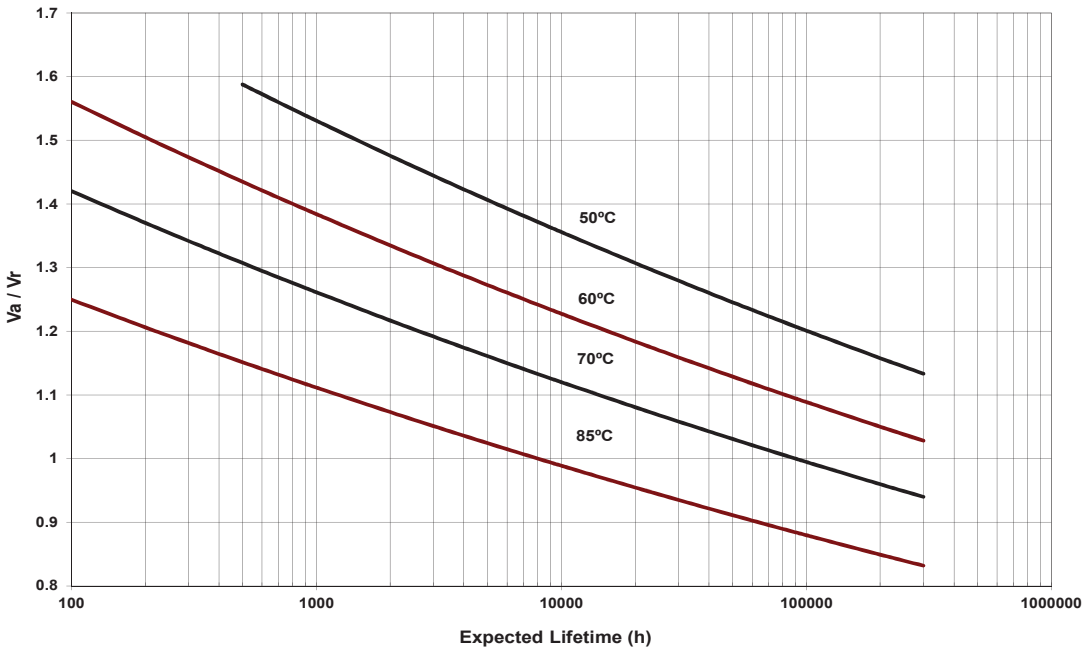
Compute $Θ = Θ_{CC} + Θ_{CA}$. In the ratings tables, $Θ_{CA}$ is for still air. For v = 0 to 5 m/s, multiply $Θ_{CA}$ by $[(5 + 17.6(0.1^{0.66})) / (5 + 17.6(v + 0.1)^{0.66})]$

Determine Expected Lifetime

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

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

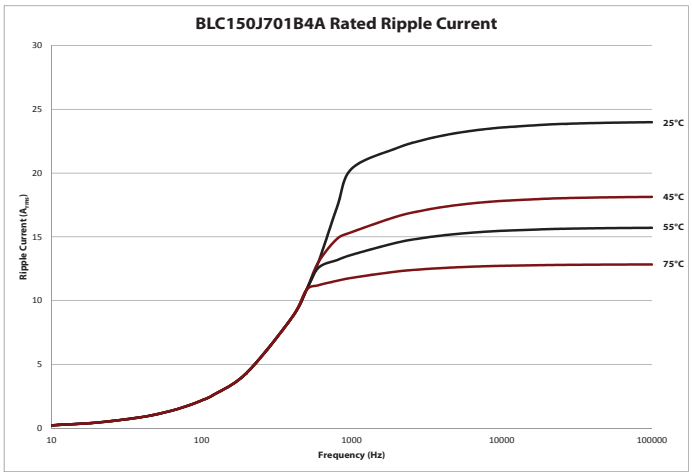
Expected Lifetime vs Core Temperature and Applied DC Voltage

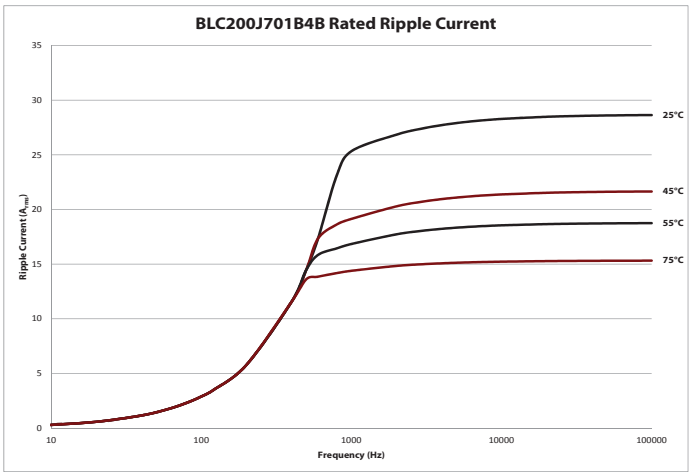


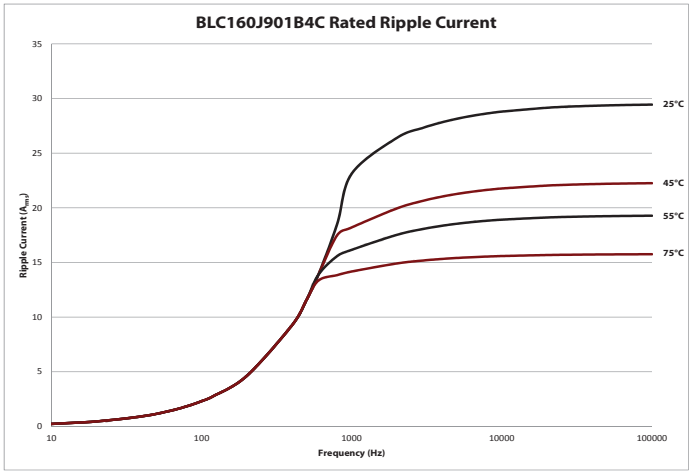
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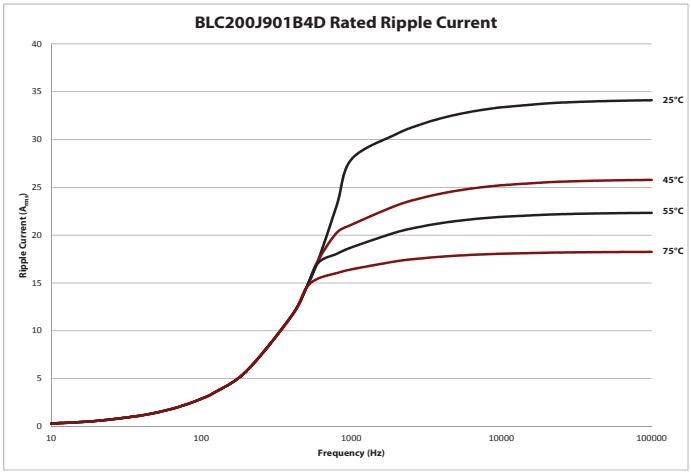
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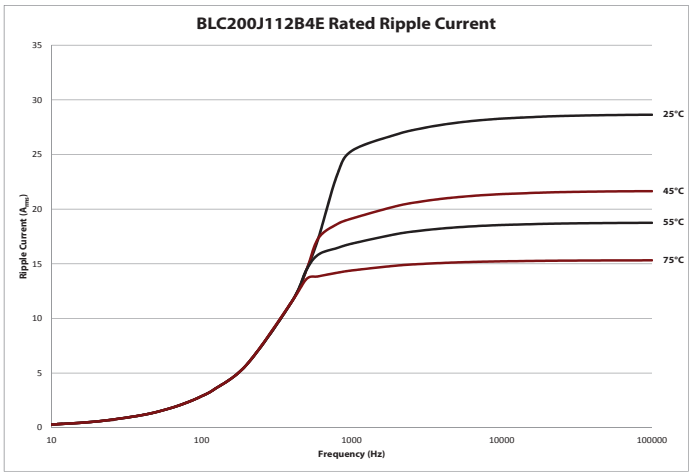
Typical Performance Curves

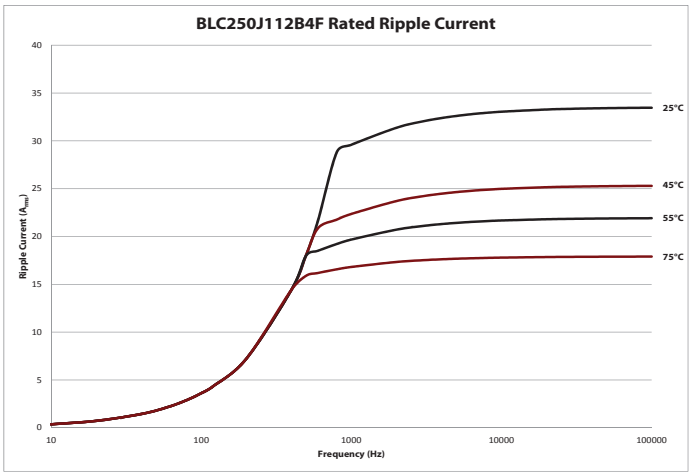












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