

Type 520C 85 °C Long Life, Inverter Grade, Aluminum

High Ripple, Long Life Screw Terminal Type



Type 520C is the 85 °C version of the Type 550C Inverter-Grade capacitor. It delivers the ripple-current capability and exceptional life needed for motor-drive bus capacitors and approaches the performance of the 550C at lower cost. It is rated for 8000 h life with full ripple current, rated voltage, 85 °C and 100 lfm airflow while mounted horizontally. Horizontal mounting is more severe than vertical mounting. The extended cathode foil of the 520C assures heat flow from the capacitor element to the can in all orientations.

Highlights

- 8,000 hour load life
- Ripple current to 55 amps
- ESRs to 8 mΩ
- Best value high ripple current
- Thermal-Pak™ extended cathode construction

Specifications

Temperature Range	−40 °C to +85 °C							
Rated Voltage Range	200 Vdc to 500 Vdc							
Capacitance Range	84 μF to 39,000 μF							
Capacitance Tolerance	−10% +50%							
Leakage Current	≤3 √CV μA, 5 mA max, 5 minutes							
Ripple Current Multipliers	Ambient Temperature							
	45 °C	55 °C	65 °C	75 °C	85 °C			
	1.80	1.63	1.45	1.25	1.00			
	Frequency							
	50 Hz	60 Hz	120 Hz	360 Hz	1 kHz	5 kHz	10 kHz & up	
	1 3/8" & 1 3/4" Diameters							
	200 to 350 V	0.76	0.81	1.00	1.24	1.36	1.43	1.44
	400 to 500 V	0.76	0.81	1.00	1.24	1.37	1.44	1.45
	2" & 2 1/2" Diameters							
	200 to 350 V	0.78	0.83	1.00	1.20	1.29	1.34	1.35
	400 to 500 V	0.77	0.82	1.00	1.22	1.33	1.39	1.40
	3" & 3 1/2" Diameters							
	200 to 350 V	0.84	0.88	1.00	1.12	1.17	1.20	1.20
	400 to 500 V	0.79	0.84	1.00	1.18	1.26	1.31	1.32
Low Temperature Characteristics	Impedance ratio: Z _{−20°C} /Z _{+25°C} ≤ 3 (200–500 Vdc)							
Endurance Life Test	8000 h at full load at 85 °C Δ Capacitance ±20% ESR 200% of limit DCL 100% of limit							
Shelf Life Test	500 h at 85 °C Capacitance 100% of limit ESR 100% of limit DCL 100% of limit							
Vibration	10 to 55 Hz, 0.06" and 10 g max, 1.5 h each of 2 axes							
RoHS Compliant								

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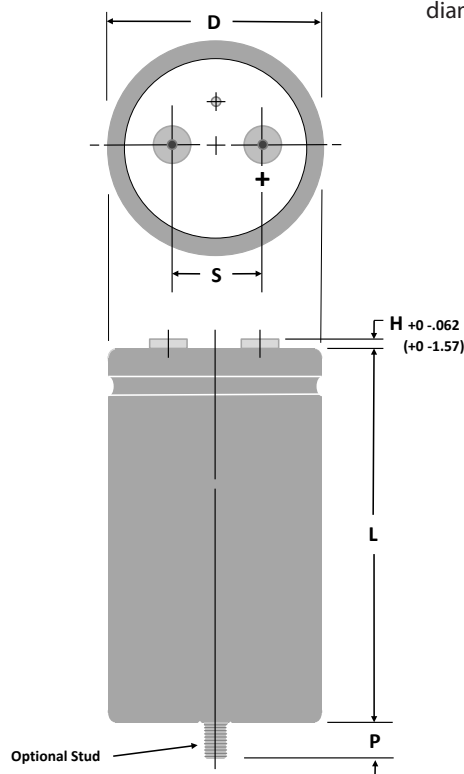
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Part Numbering System

520C	572	T	400	DF	2	B	S
Type	Capacitance	Tolerance	Voltage	Case Code	Insulation	Terminal	Can Style
	572 = 5700 µF	M = ±20% U = -10%+75% T = -10%+50%	200 = 200 Vdc 400 = 400 Vdc		0 = None 1 = Polyester 2 = PVC	A = Low Post B = High Post D = High Current, Low Post E = High Current, High Post F or M = M5 Post G = M6 Low Post H = M6 High Post	Blank = Standard Can S = Stud Bottom P = Stud with Thermal Pad

Standard insulation is 0.008-in PVC sleeve with 0.01-in polypropylene end disk.
Polyester insulation is not available for 3.5 inch diameter units.

Outline Drawing



Stud Dimensions

Case Diam.	Stud Thread	P ± 0.039" (±1.0 mm)
1.375	M8	0.470" (12.0)
1.750	M8	0.470" (12.0)
2.000	M12	0.630" (16.0)
2.500	M12	0.630" (16.0)
3.000	M12	0.630" (16.0)
3.500	M12	0.630" (16.0)

NOTE: With the stud-mount feature, a thermally-conductive disk can be inserted in the bottom flush with the outer insulating sleeve. This reduces the thermal resistance through the can bottom by 0.3 °C/W. Can Style P.

Terminal Dimensions

Terminal Style	For Case Diameters	Code	Post Diameter in mm	H max in mm	Thread	min Full Thread in mm	Torque in-lb N-m
Low Post	1 3/8 to 3	A	0.314 8.0	0.094 2.4	10-32	0.218 5.5	25 2.82
High Post	1 3/8 to 3	B	0.314 8.0	0.281 7.1	10-32	0.375 9.5	25 2.82
High Current, Low	2 1/2 to 3 1/2	D	0.684 17.4	0.125 3.2	1/4-28	0.344 8.7	50 5.65
High Current, High	2 1/2 to 3 1/2	E	0.684 17.4	0.281 7.1	1/4-28	0.469 11.9	60 6.78
M5 Post, Small	1 3/8 to 2	M	0.314 8.0	0.281 7.1	M5	0.375 9.5	25 2.82
M5 Post	2 1/2 & 3	F	0.512 13.0	0.230 5.8	M5	0.344 8.7	25 2.82
M6 Low Post	2 1/2 to 3 1/2	G	0.684 17.4	0.125 3.2	M6	0.344 8.7	50 5.65
M6 High Post	2 1/2 to 3 1/2	H	0.684 17.4	0.281 7.1	M6	0.469 11.9	60 6.78

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Uninsulated Case Dimensions

For insulated case, add 0.024"(0.610 mm) to "D" and 0.030"(0.762 mm) to length.

Case Code	Diam. (D)		Length (L)		Terminals (S)		Typical Weight	
	±.031 Inches	±.78 mm	±.062 Inches	±1.57 mm	±0.015 Inches	±.38 mm	oz	g
AK	1.375	34.93	1.625	41.28	0.50	12.70	1.9	54
AA	1.375	34.93	2.125	53.98	0.50	12.70	2.0	57
AH	1.375	34.93	2.625	66.68	0.50	12.70	2.7	77
AB	1.375	34.93	3.125	79.38	0.50	12.70	3.3	94
AJ	1.375	34.93	3.625	92.08	0.50	12.70	3.8	108
AC	1.375	34.93	4.125	104.78	0.50	12.70	4.4	125
AD	1.375	34.93	4.625	117.48	0.50	12.70	5.1	145
AE	1.375	34.93	5.125	130.18	0.50	12.70	6.8	193
AF	1.375	34.93	5.625	142.88	0.50	12.70	8.1	230
EA	1.750	44.45	2.125	53.98	0.75	19.05	2.7	76
EH	1.750	44.45	2.625	66.68	0.75	19.05	3.8	108
EB	1.750	44.45	3.125	79.38	0.75	19.05	5.1	145
EJ	1.750	44.45	3.625	92.08	0.75	19.05	6.8	193
EC	1.750	44.45	4.125	104.78	0.75	19.05	8.1	230
ED	1.750	44.45	4.625	117.48	0.75	19.05	9.0	255
EE	1.750	44.45	5.125	130.18	0.75	19.05	9.5	269
EF	1.750	44.45	5.625	142.88	0.75	19.05	10.5	298
BA	2.000	50.80	2.125	53.98	0.88	22.23	5.4	153
BH	2.000	50.80	2.625	66.68	0.88	22.23	6.1	173
BB	2.000	50.80	3.125	79.38	0.88	22.23	6.8	193
BJ	2.000	50.80	3.625	92.08	0.88	22.23	8.2	232
BC	2.000	50.80	4.125	104.78	0.88	22.23	9.5	269
BD	2.000	50.80	4.625	117.48	0.88	22.23	10.3	292
BE	2.000	50.80	5.125	130.18	0.88	22.23	10.7	303
BF	2.000	50.80	5.625	142.88	0.88	22.23	13.0	369
CH	2.500	63.50	2.625	66.68	1.13	28.58	9.2	261
CB	2.500	63.50	3.125	79.38	1.13	28.58	10.4	295
CJ	2.500	63.50	3.625	92.08	1.13	28.58	12.7	361
CC	2.500	63.50	4.125	104.78	1.13	28.58	15.0	425
CD	2.500	63.50	4.625	117.48	1.13	28.58	17.2	488
CE	2.500	63.50	5.125	130.18	1.13	28.58	19.3	547
CF	2.500	63.50	5.625	142.88	1.13	28.58	21.4	607
DB	3.000	76.20	3.125	79.38	1.25	31.75	16.7	473
DJ	3.000	76.20	3.625	92.08	1.25	31.75	20.0	567
DC	3.000	76.20	4.125	104.78	1.25	31.75	22.2	629
DD	3.000	76.20	4.625	117.48	1.25	31.75	25.5	723
DE	3.000	76.20	5.125	130.18	1.25	31.75	30.0	850
DF	3.000	76.20	5.625	142.88	1.25	31.75	31.9	904
DM	3.000	76.20	6.625	168.28	1.25	31.75	34.4	933.5
DP	3.000	76.20	5.875	149.23	1.25	31.75	32.8	931
DN	3.000	76.20	7.625	193.68	1.25	31.75	39.5	1119
DG	3.000	76.20	8.625	219.08	1.25	31.75	43.3	1227
FC	3.500	88.90	4.125	104.78	1.25	31.75	30.0	850
FD	3.500	88.90	4.625	117.48	1.25	31.75	34.4	976
FE	3.500	88.90	5.125	130.18	1.25	31.75	40.5	1148
FF	3.500	88.90	5.625	142.88	1.25	31.75	43.1	1221
FP	3.500	88.90	5.875	149.23	1.25	31.75	44.3	1257
FN	3.500	88.90	7.625	193.68	1.25	31.75	53.3	1512
FG	3.500	88.90	8.625	219.08	1.25	31.75	58.5	1658
FM	3.500	88.90	6.625	168.28	1.25	31.75	46.4	1315.4

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Ratings

Additional Smaller Sizes available at www.cde.com/catalogs/520C.pdf

Cap. (µF)	Catalog Part Number	ESR Max. @ 25 °C 120 Hz (mΩ)	Ripple Max. @ 85 °C 120 Hz (A)	Nominal Size D x L (inches)
200 Vdc (250 Vdc Surge)				
3200	520C322T200CH2B	44.3	9.0	2 1/2 x 2 5/8
4400	520C442T200CB2B	32.8	11.1	2 1/2 x 3 1/8
5700	520C572T200CJ2B	23.4	13.8	2 1/2 x 3 5/8
6400	520C642T200DB2B	31.8	12.6	3 x 3 1/8
7000	520C702T200CC2B	21.3	15.1	2 1/2 x 4 1/8
8200	520C822T200CD2B	18.2	17.0	2 1/2 x 4 5/8
8200	520C822T200DJ2B	24.9	15.0	3 x 3 5/8
9500	520C952T200CD2B	16.6	18.4	2 1/2 x 5 1/8
10000	520C103T200DC2B	20.7	17.1	3 x 4 1/8
11000	520C113T200CF2B	14.4	20.4	2 1/2 x 5 5/8
12000	520C123T200DD2B	17.7	19.2	3 x 4 5/8
14000	520C143T200DE2B	18.0	19.7	3 x 5 1/8
15000	520C153T200FC2D	15.6	21.7	3 1/2 x 4 1/8
16000	520C163T200DF2B	14.0	23.0	3 x 5 5/8
16000	520C163T200DP2B	16.1	21.7	3 x 5 7/8
17000	520C173T200FD2D	13.3	24.4	3 1/2 x 4 5/8
20000	520C203T200FE2D	14.1	24.4	3 1/2 x 5 1/8
22000	520C223T200DN2D	12.3	27.6	3 x 7 5/8
23000	520C233T200FF2D	12.6	26.5	3 1/2 x 5 5/8
24000	520C243T200FP2D	12.0	27.5	3 1/2 x 5 7/8
26000	520C263T200DG2D	10.1	31.0	3 x 8 5/8
34000	520C343T200FN2D	9.7	33.6	3 1/2 x 7 5/8
39000	520C393T200FG2D	8.3	37.2	3.5 x 8 5/8
250 Vdc (300 Vdc Surge)				
2100	520C212T250CH2B	54.2	8.2	2 1/2 x 2 5/8
3000	520C302T250CB2B	33.6	11.0	2 1/2 x 3 1/8
3900	520C392T250CJ2B	26.3	13.0	2 1/2 x 3 5/8
4300	520C432T250DB2B	29.0	13.2	3 x 3 1/8
4700	520C472T250CC2B	21.8	15.0	2 1/2 x 4 1/8
5600	520C562T250CD2B	18.6	16.8	2 1/2 x 4 5/8
5600	520C562T250DJ2B	22.7	15.7	3 x 3 5/8
6400	520C642T250CD2B	16.3	18.6	2 1/2 x 5 1/8
6800	520C682T250DC2B	18.5	18.2	3 x 4 1/8
7300	520C732T250CF2B	14.5	20.3	2 1/2 x 5 5/8
8000	520C802T250DD2B	17.1	19.5	3 x 4 5/8
9300	520C932T250DE2B	15.0	21.6	3 x 5 1/8
10000	520C103T250FC2D	20.4	19.0	3 1/2 x 4 1/8
11000	520C113T250DF2B	12.6	24.3	3 x 5 5/8
11000	520C113T250DP2B	12.1	25.1	3 x 5 7/8
12000	520C123T250FD2D	18.1	20.9	3 1/2 x 4 5/8
14000	520C143T250FE2D	15.8	23.0	3 1/2 x 5 1/8
15000	520C153T250FF2D	13.9	25.3	3 1/2 x 5 5/8
16000	520C163T250DN2B	9.1	32.2	3 x 7 5/8

Cap. (µF)	Catalog Part Number	ESR Max. @ 25 °C 120 Hz (mΩ)	Ripple Max. @ 85 °C 120 Hz (A)	Nominal Size D x L (inches)
250 Vdc (300 Vdc Surge)				
16000	520C163T250FP2D	13.5	26.0	3 1/2 x 5 7/8
18000	520C183T250DG2D	7.4	36.2	3 x 8 5/8
22000	520C223T250FN2D	11.0	31.5	3 1/2 x 7 5/8
26000	520C263T250FG2D	9.6	34.6	3 1/2 x 8 5/8
300 Vdc (350 Vdc Surge)				
1600	520C162T300CH2B	59.5	7.8	2 1/2 x 2 5/8
2200	520C222T300CB2B	48.8	9.1	2 1/2 x 3 1/8
2900	520C292T300CJ2B	40.0	10.6	2 1/2 x 3 5/8
3400	520C342T300DB2B	44.9	10.6	3 x 3 1/8
3500	520C352T300CC2B	31.4	12.5	2 1/2 x 4 1/8
4100	520C412T300CD2B	26.8	14.0	2 1/2 x 4 5/8
4300	520C432T300DJ2B	35.7	12.5	3 x 3 5/8
4800	520C482T300CD2B	23.3	15.5	2 1/2 x 5 1/8
5300	520C532T300DC2B	27.5	14.9	3 x 4 1/8
5400	520C542T300CF2B	20.7	17.0	2 1/2 x 5 5/8
6300	520C632T300DD2B	24.8	16.3	3 x 4 5/8
7200	520C722T300DE2B	21.5	18.0	3 x 5 1/8
7400	520C742T300FC2D	22.1	18.2	3 1/2 x 4 1/8
8200	520C822T300DF2B	18.9	19.8	3 x 5 5/8
8700	520C872T300DP2B	17.9	20.6	3 x 5 7/8
8800	520C882T300FD2D	19.1	20.3	3 1/2 x 4 5/8
10000	520C103T300FE2D	16.8	22.3	3 1/2 x 5 1/8
11000	520C113T300FF2D	15.0	24.4	3 1/2 x 5 5/8
12000	520C123T300DN2B	13.8	26.1	3 x 7 5/8
12000	520C123T300FP2D	14.2	25.3	3 1/2 x 5 7/8
14000	520C143T300DG2B	11.3	29.3	3 x 8 5/8
17000	520C173T300FN2D	11.5	30.9	3 1/2 x 7 5/8
20000	520C203T300FG2D	9.8	34.2	3 1/2 x 8 5/8
350 Vdc (400 Vdc Surge)				
1500	520C152T350CH2B	91.3	6.3	2 1/2 x 2 5/8
2000	520C202T350CB2B	64.0	8.0	2 1/2 x 3 1/8
2600	520C262T350CJ2B	51.0	9.4	2 1/2 x 3 5/8
3100	520C312T350DB2B	56.6	9.5	3 x 3 1/8
3200	520C322T350CC2B	41.9	10.8	2 1/2 x 4 1/8
3800	520C382T350CD2B	35.7	12.1	2 1/2 x 4 5/8
4000	520C402T350DJ2B	43.8	11.3	3 x 3 5/8
4400	520C442T350CD2B	31.1	13.5	2 1/2 x 5 1/8
4800	520C482T350DC2B	36.5	12.9	3 x 4 1/8
4900	520C492T350CF2B	27.6	14.7	2 1/2 x 5 5/8
5700	520C572T350DD2B	31.0	14.5	3 x 4 5/8
6600	520C662T350DE2B	27.1	16.1	3 x 5 1/8
6800	520C682T350FC2D	31.4	15.3	3 1/2 x 4 1/8
7500	520C752T350DF2B	24.1	17.5	3 x 5 5/8

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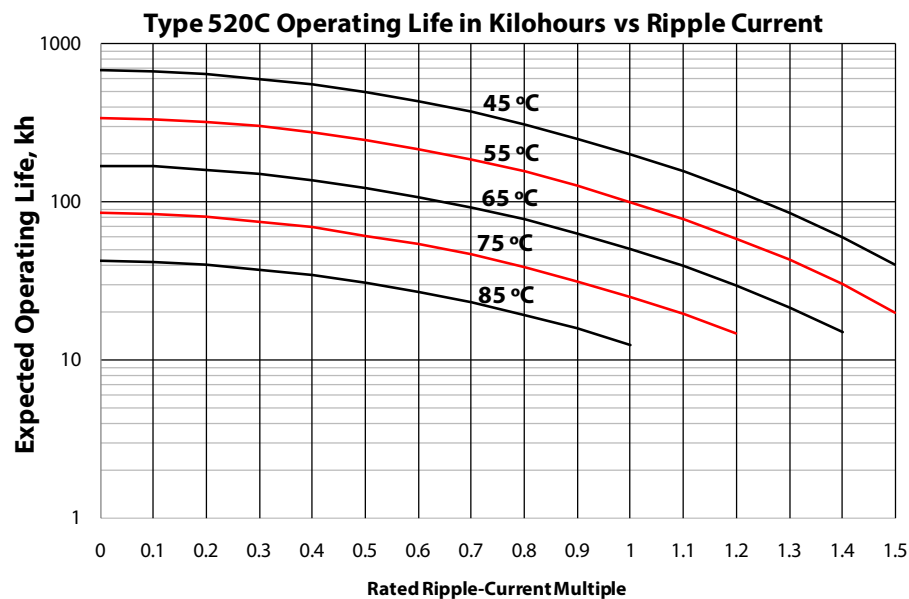
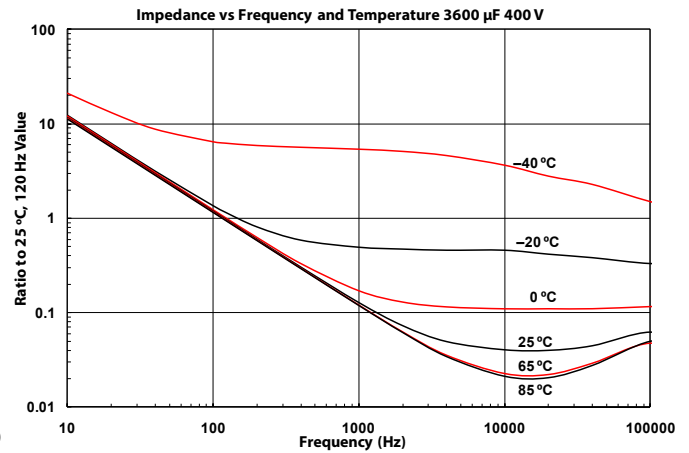
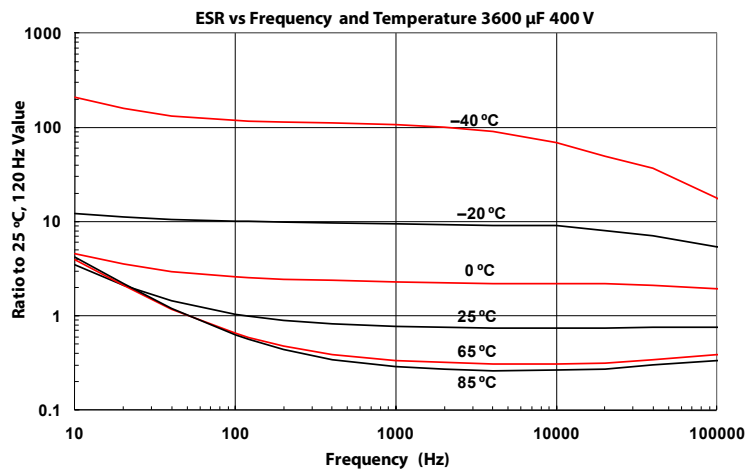
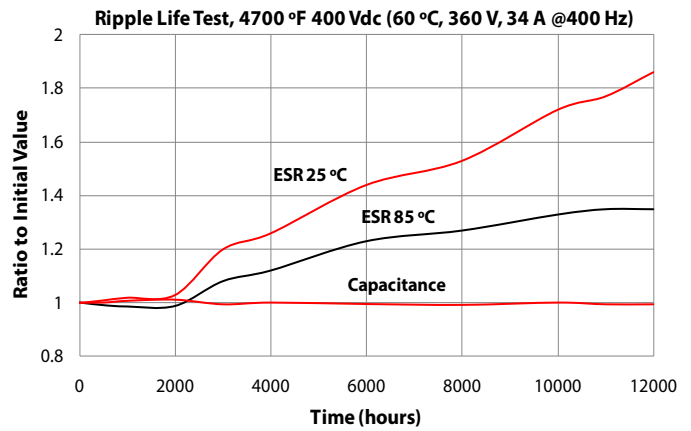
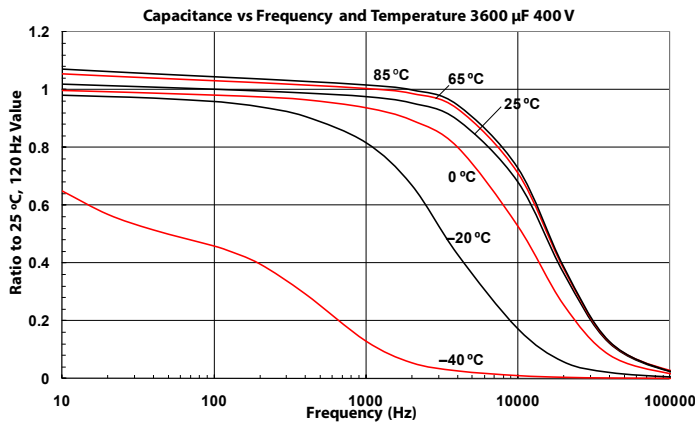
Cap. (μF)	Catalog Part Number	ESR Max. @ 25 °C 120 Hz (mΩ)	Ripple Max. @ 85 °C 120 Hz (A)	Nominal Size D x L (inches)
350 Vdc (400 Vdc Surge)				
7900	520C792T350DP2B	22.8	18.3	3 x 5 7/8
8000	520C802T350FD2D	27.0	17.1	3 1/2 x 4 5/8
9200	520C922T350FE2D	23.6	18.9	3 1/2 x 5 1/8
10000	520C103T350FF2D	21.0	20.6	3 1/2 x 5 5/8
10000	520C103T350FF2D	21.0	20.6	3 1/2 x 5 5/8
11000	520C113T350FP2D	19.9	21.4	3 1/2 x 5 7/8
13000	520C133T350DG2B	14.9	25.5	3 x 8 5/8
15000	520C153T350FN2D	15.7	26.7	3 1/2 x 7 5/8
18000	520C183T350FG2D	13.0	29.7	3 1/2 x 8 5/8
400 Vdc (450 Vdc Surge)				
1100	520C112T400CH2B	97.8	6.1	2 1/2 x 2 5/8
1600	520C162T400CB2B	68.6	7.7	2 1/2 x 3 1/8
2000	520C202T400CJ2B	54.6	9.1	2 1/2 x 3 5/8
2400	520C242T400CC2B	44.9	10.4	2 1/2 x 4 1/8
2400	520C242T400DB2B	60.4	9.2	3 x 3 1/8
2900	520C292T400CD2B	47.1	10.6	2 1/2 x 4 5/8
3000	520C302T400DJ2B	47.1	10.9	3 x 3 5/8
3300	520C332T400CD2B	33.0	13.0	2 1/2 x 5 1/8
3700	520C372T400DC2B	38.8	12.5	3 x 4 1/8
3800	520C382T400CF2B	33.0	13.5	2 1/2 x 5 5/8
4400	520C442T400DD2B	29.5	14.9	3 x 4 5/8
5000	520C502T400DE2B	28.8	15.6	3 x 5 1/8
5200	520C522T400FC2D	33.5	14.8	3 1/2 x 4 1/8
5700	520C572T400DF2B	25.6	17.0	3 x 5 5/8
6100	520C612T400DP2B	24.3	17.7	3 x 5 7/8
6100	520C612T400FD2D	28.8	16.6	3 1/2 x 4 5/8
7000	520C702T400FE2D	25.1	18.3	3 1/2 x 5 1/8
8000	520C802T400FF2D	22.3	20.0	3 1/2 x 5 5/8
8400	520C842T400DN2B	19.1	22.2	3 x 7 5/8
8500	520C852T400FP2D	21.1	20.8	3 1/2 x 5 7/8
9800	520C982T400DG2B	15.8	24.8	3 x 8 5/8
12000	520C123T400FN2D	16.6	25.9	3 1/2 x 7 5/8
14000	520C143T400FG2D	13.8	28.8	3 1/2 x 8 5/8
450 Vdc (500 Vdc Surge)				
920	520C921T450CH2B	114.0	5.6	2 1/2 x 2 5/8
1300	520C132T450CB2B	81.9	7.0	2 1/2 x 3 1/8
1600	520C162T450CJ2B	63.5	8.4	2 1/2 x 3 5/8
1900	520C192T450DB2B	52.6	9.8	3 x 3 1/8
2000	520C202T450CC2B	49.8	9.9	2 1/2 x 4 1/8
2400	520C242T450CD2B	42.3	11.1	2 1/2 x 4 5/8

Cap. (μF)	Catalog Part Number	ESR Max. @ 25 °C 120 Hz (mΩ)	Ripple Max. @ 85 °C 120 Hz (A)	Nominal Size D x L (inches)
450 Vdc (500 Vdc Surge)				
2500	520C252T450DJ2B	40.3	11.8	3 x 3 5/8
2700	520C272T450CE2B	38.9	12.0	2 1/2 x 5 1/8
3100	520C312T450CF2B	32.7	13.5	2 1/2 x 5 5/8
3100	520C312T450DC2B	33.0	13.6	3 x 4 1/8
3600	520C362T450DD2B	27.8	15.3	3 x 4 5/8
4200	520C422T450DE2B	23.9	17.1	3 x 5 1/8
4300	520C432T450FC2D	23.9	17.5	3 1/2 x 4 1/8
4700	520C472T450DF2B	21.3	18.7	3 x 5 5/8
5000	520C502T450DP2B	20.0	19.5	3 x 5 7/8
5000	520C502T450FD2D	20.0	19.9	3 1/2 x 4 5/8
5800	520C582T450FE2D	17.6	21.8	3 1/2 x 5 1/8
6600	520C662T450FF2D	15.1	24.2	3 1/2 x 5 5/8
7000	520C702T450FP2D	14.3	25.2	3 1/2 x 5 7/8
7000	520C702T450DN2B	15.0	25.0	3 x 7 5/8
8100	520C812T450DG2B	12.5	27.9	3 x 8 5/8
9500	520C952T450FN2D	11.0	32.0	3 1/2 x 7 5/8
11000	520C113T450FG2D	9.1	35.5	3 1/2 x 8 5/8
500 Vdc (550 Vdc Surge)				
630	520C631T500CH2B	165.0	4.7	2 1/2 x 2 5/8
890	520C891T500CB2B	118.0	5.9	2 1/2 x 3 1/8
1100	520C112T500CJ2B	91.9	7.0	2 1/2 x 3 5/8
1300	520C132T500DB2B	77.1	8.1	3 x 3 1/8
1400	520C142T500CC2B	73.1	8.2	2 1/2 x 4 1/8
1600	520C162T500CD2B	63.2	9.1	2 1/2 x 4 5/8
1700	520C172T500DJ2B	60.1	9.7	3 x 3 5/8
1900	520C192T500CD2B	54.9	10.1	2 1/2 x 5 1/8
2100	520C212T500DC2B	49.4	11.1	3 x 4 1/8
2200	520C222T500CF2B	46.2	11.4	2 1/2 x 5 5/8
2500	520C252T500DD2B	42.0	12.5	3 x 4 5/8
2900	520C292T500DE2B	36.5	13.8	3 x 5 1/8
3000	520C302T500FC2D	35.7	14.4	3 1/2 x 4 1/8
3300	520C332T500DF2B	32.4	15.1	3 x 5 5/8
3500	520C352T500DP2B	30.6	15.8	3 x 5 7/8
3500	520C352T500FD2D	30.3	16.1	3 1/2 x 4 5/8
4000	520C402T500FE2D	26.4	17.8	3 1/2 x 5 1/8
4600	520C462T500FF2D	23.4	19.5	3 1/2 x 5 5/8
4800	520C482T500FP2D	22.2	20.3	3 1/2 x 5 7/8
4800	520C482T500DN2B	23.9	19.8	3 x 7 5/8
5600	520C562T500DG2B	19.7	22.2	3 x 8 5/8
6700	520C672T500FN2D	17.3	25.4	3 1/2 x 7 5/8

Type 520C 85 °C Long Life, Inverter Grade, Aluminum

High Ripple, Long Life Screw Terminal Type

Typical Performance Curves



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