

# Type 420C 85 °C, Long-Life, Inverter Grade, Radial Leaded

## Best Value High Ripple Type Plug-in



Type 420C is the PC-mount version of the Type 520C screw terminal, computer grade capacitor and the 85 °C version of the Type 450C Inverter Grade capacitor. It delivers the ripple current capability and exceptional life needed for motor-drive bus capacitors and approaches the performance of the 450C at a lower cost. The extended cathode foil of the 420C assures cool operation and heat flow from the capacitor element to the can in all orientations.

### Highlights

- For motor drives and UPS systems
- ESRs to 6.9 mΩ
- Printed-circuit mounting
- Thermal-Pak™ extended cathode construction

### Specifications

- Operating Temperature:** -40 °C to 85 °C  
**Rated Voltage:** 100 to 500 Vdc  
**Capacitance:** 160 μF to 27,000 μF ± 20%  
**DC Leakage Current:** ≤ 3  $\sqrt{CV}$  μA, 4 mA max, 5 minutes  
**Cold Impedance:** -20 °C multiple of 25 °C  $Z \leq 3$   
**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
<b>1 3/8" &amp; 1 3/4" Diameters</b>							
100 to 350 V	0.91	0.93	1.00	1.06	1.08	1.09	1.09
400 to 500 V	0.82	0.86	1.00	1.14	1.20	1.23	1.23
<b>2" Diameters</b>							
100 to 350 V	0.92	0.94	1.00	1.05	1.07	1.08	1.08
400 to 500 V	0.82	0.86	1.00	1.14	1.20	1.23	1.27

**EIA Ripple Life:** 4000 h at full load at 85 °C per EIA IS-749

- Δ capacitance ± 20%
- ESR 200 % of limit
- DCL 100 % of limit

**Life Test:** 6,000 h at 85°C with rated voltage

- Δ Capacitance ±10%
- ESR 200% of limit
- DCL 100% of limit

**Shelf Life Test:** 500 h at 105 °C. Capacitance, ESR and DCL meet initial requirements

**Vibration:** 10 to 55 Hz, 0.06" and 10 g max, 2 h each plane

# Type 420C 85 °C, Long-Life, Inverter Grade, Radial Leaded Outline Drawings



## Case Dimensions

Case Code	Inches						Millimeters					
	D ± .031	L MAX	C ± .015	S ± .031	E ± .031	F ± .015	D ± .78	L MAX	C ± .78	S ± .78	E ± .78	F ± .38
AK	1.375	1.75	0.50	0.175	0.25	0.55	34.93	44.45	12.70	4.45	6.35	13.97
AA	1.375	2.25	0.50	0.175	0.25	0.55	34.93	57.15	12.70	4.45	6.35	13.97
AH	1.375	2.75	0.50	0.175	0.25	0.55	34.98	69.85	12.70	4.45	6.35	13.97
AB	1.375	3.25	0.50	0.175	0.25	0.55	34.93	82.55	12.70	4.45	6.35	13.97
AJ	1.375	3.75	0.50	0.175	0.25	0.55	34.93	95.25	12.70	4.45	6.35	13.97
AC	1.375	4.25	0.50	0.175	0.25	0.55	34.93	107.95	12.70	4.45	6.35	13.97
AD	1.375	4.75	0.50	0.175	0.25	0.55	34.93	120.65	12.70	4.45	6.35	13.97
AE	1.375	5.25	0.50	0.175	0.25	0.55	34.93	133.35	12.70	4.45	6.35	13.97
AF	1.375	5.75	0.50	0.175	0.25	0.55	34.93	146.05	12.70	4.45	6.35	13.97
EA	1.75	2.25	0.70	0.375	0.35	0.90	44.45	57.15	17.78	9.53	8.89	22.86
EH	1.75	2.75	0.70	0.375	0.35	0.90	44.45	69.85	17.78	9.53	8.89	22.86
EB	1.75	3.25	0.70	0.375	0.35	0.90	44.45	82.55	17.78	9.53	8.89	22.86
EJ	1.75	3.75	0.70	0.375	0.35	0.90	44.45	95.25	17.78	9.53	8.89	22.86
EC	1.75	4.25	0.70	0.375	0.35	0.90	44.45	107.95	17.78	9.53	8.89	22.86
ED	1.75	4.75	0.70	0.375	0.35	0.90	44.45	120.65	17.78	9.53	8.89	22.86
EE	1.75	5.25	0.70	0.375	0.35	0.90	44.45	133.35	17.78	9.53	8.89	22.86
EF	1.75	5.75	0.70	0.375	0.35	0.90	44.45	146.05	17.78	9.53	8.89	22.86
BA	2.00	2.25	0.80	0.425	0.40	1.00	50.80	57.15	20.32	10.80	10.16	25.40
BH	2.00	2.75	0.80	0.425	0.40	1.00	50.80	69.85	20.32	10.80	10.16	25.40
BB	2.00	3.25	0.80	0.425	0.40	1.00	50.80	82.55	20.32	10.80	10.16	25.40
BJ	2.00	3.75	0.80	0.425	0.40	1.00	50.80	95.25	20.32	10.80	10.16	25.40
BC	2.00	4.25	0.80	0.425	0.40	1.00	50.80	107.95	20.32	10.80	10.16	25.40
BD	2.00	4.75	0.80	0.425	0.40	1.00	50.80	120.65	20.32	10.80	10.16	25.40
BE	2.00	5.25	0.80	0.425	0.40	1.00	50.80	133.25	20.32	10.80	10.16	25.40
BF	2.00	5.75	0.80	0.425	0.40	1.00	50.80	146.05	20.32	10.80	10.16	25.40

## Part Numbering System

420C	242	M	100	AK	8	
Type	Capacitance	Tolerance	Voltage	Case Code	Insulation	Terminal
	242 = 2400 µF 221 = 220 µF	M = ±20% T = -10% +50% U = -10 +75%	100 = 100 V 450 = 450 V	0 = Bare can	8 = PVC and Standoffs 9 = Polyester and Standoffs	(blank) = Straight Leads

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## Ratings

## RoHS Compliant

Cap. (µF)	Catalog Part Number	ESR Max. 25 °C		Ripple Amps, 85 °C		Nominal Size D X L (in)
		120 Hz (µΩ)	20 kHz (µΩ)	120 Hz (A)	20 kHz (A)	
<b>100 Vdc (125 Vdc Surge)</b>						
2400	420C242M100AK8	74.60	50.60	3.80	4.80	1 3/8 X 1 3/4
3600	420C362M100AA8	50.10	34.00	5.30	6.70	1 3/8 X 2 1/4
5000	420C502M100AH8	36.60	24.80	6.40	8.10	1 3/8 X 2 3/4
5300	420C532M100EA8	39.90	27.10	6.90	8.60	1 3/4 X 2 1/4
6400	420C642M100AB8	28.40	19.30	7.90	9.80	1 3/8 X 3 1/4
6800	420C682M100BA8	36.90	25.10	7.70	9.60	2 X 2 1/4
7300	420C732M100EH8	28.60	19.40	8.70	10.90	1 3/4 X 2 3/4
7800	420C782M100AJ8	23.40	15.90	9.10	11.40	1 3/8 X 3 3/4
9100	420C912M100BH8	26.20	17.80	9.80	12.30	2 X 2 3/4
9300	420C932M100AC8	20.00	13.60	10.40	12.90	1 3/8 X 4 1/4
9600	420C962M100EB8	22.20	15.00	10.70	13.30	1 3/4 X 3 1/4
11000	420C113M100AD8	17.60	11.90	11.50	14.40	1 3/8 X 4 3/4
12000	420C123M100AE8	15.80	10.70	12.80	15.90	1 3/8 X 5 1/4
12000	420C123M100EJ8	18.20	12.40	12.20	15.20	1 3/4 X 3 3/4
12000	420C123M100BB8	20.30	13.80	11.80	14.70	2 X 3 1/4
14000	420C143M100EC8	15.60	10.60	13.60	17.00	1 3/4 X 4 1/4
14000	420C143M100AF8	18.10	12.30	12.50	15.70	1 3/8 X 5 3/4
15000	420C153M100BJ8	16.70	11.40	14.50	18.20	2 X 3 3/4
16000	420C163M100ED8	13.70	9.30	15.30	19.20	1 3/4 X 4 3/4
18000	420C183M100EE8	12.30	8.30	17.10	21.40	1 3/4 X 5 1/4
18000	420C183M100BC8	14.30	9.70	15.80	19.70	2 X 4 1/4
20000	420C203M100BD8	12.70	8.60	17.30	21.70	2 X 4 3/4
21000	420C213M100EF8	11.20	7.60	19.20	24.00	1 3/4 X 5 3/4
24000	420C243M100BE8	11.10	7.50	19.20	24.00	2 X 5 1/4
27000	420C273M100BF8	10.20	6.90	20.70	25.90	2 X 5 3/4
<b>160 Vdc (200 Vdc Surge)</b>						
1300	420C132M160AK8	94.80	57.00	4.20	5.40	1 3/8 X 1 3/4
1900	420C192M160AA8	63.90	38.70	5.90	7.50	1 3/8 X 2 1/4
2800	420C282M160EA8	49.00	33.40	7.40	8.90	1 3/4 X 2 1/4
3000	420C302M160AH8	45.00	27.50	7.20	9.20	1 3/8 X 2 3/4
3600	420C362M160AB8	35.10	21.80	8.80	11.10	1 3/8 X 3 1/4
3600	420C362M160BA8	42.80	31.70	8.00	9.30	2 X 2 1/4
3900	420C392M160EH8	34.90	23.60	9.30	11.30	1 3/4 X 2 3/4
4400	420C442M160AJ8	29.10	18.30	10.10	12.70	1 3/8 X 3 3/4
4800	420C482M160BH8	30.10	22.10	10.30	12.10	2 X 2 3/4
5100	420C512M160EB8	27.10	18.50	11.40	13.80	1 3/4 X 3 1/4
5200	420C522M160AC8	25.10	16.00	11.50	14.40	1 3/8 X 4 1/4
5700	420C572M160AD8	23.00	14.70	12.50	15.70	1 3/8 X 4 3/4
6300	420C632M160EJ8	22.40	15.40	13.00	15.60	1 3/4 X 3 3/4
6400	420C642M160BB8	23.50	17.30	12.30	14.40	2 X 3 1/4
6600	420C662M160AE8	20.80	13.50	13.80	17.10	1 3/8 X 5 1/4
7200	420C722M160AF8	19.20	12.70	15.10	18.60	1 3/8 X 5 3/4
7400	420C742M160EC8	19.30	13.40	14.50	17.40	1 3/4 X 4 1/4
7900	420C792M160BJ8	19.40	14.40	15.20	17.60	2 X 3 3/4
8600	420C862M160ED8	17.00	12.00	16.30	19.40	1 3/4 X 4 3/4
9300	420C932M160BC8	16.70	12.50	16.50	19.00	2 X 4 1/4
9700	420C972M160EE8	15.40	10.90	18.10	21.50	1 3/4 X 5 1/4
11000	420C113M160EF8	14.10	10.20	20.20	23.80	1 3/4 X 5 3/4
11000	420C113M160BD8	14.80	11.10	18.10	20.80	2 X 4 3/4
13000	420C133M160BE8	13.10	10.00	19.90	22.70	2 X 5 1/4
14000	420C143M160BF8	12.10	9.30	21.40	24.40	2 X 5 3/4
<b>200 Vdc (250 Vdc Surge)</b>						
900	420C901M200AK8	130.00	73.40	3.60	4.80	1 3/8 X 1 3/4
1300	420C132M200AA8	87.60	49.60	5.00	6.70	1 3/8 X 2 1/4
2000	420C202M200EA8	63.50	40.20	6.50	8.10	1 3/4 X 2 1/4
2000	420C202M200AH8	61.40	35.10	6.20	8.20	1 3/8 X 2 3/4
2500	420C252M200AB8	47.70	27.60	7.50	9.90	1 3/8 X 3 1/4

Cap. (µF)	Catalog Part Number	ESR Max. 25 °C		Ripple Amps, 85 °C		Nominal Size D X L (in)
		120 Hz (µΩ)	20 kHz (µΩ)	120 Hz (A)	20 kHz (A)	
2500	420C252M200BA8	53.20	36.50	7.20	8.70	2 X 2 1/4
2700	420C272M200EH8	45.50	28.50	8.20	10.30	1 3/4 X 2 3/4
3100	420C312M200AJ8	39.30	23.00	8.70	11.40	1 3/8 X 3 3/4
3400	420C342M200BH8	37.70	25.60	9.20	11.20	2 X 2 3/4
3600	420C362M200EB8	35.20	22.30	10.00	12.60	1 3/4 X 3 1/4
3700	420C372M200AC8	33.60	20.00	9.90	12.90	1 3/8 X 4 1/4
4100	420C412M200AD8	30.80	18.30	10.80	14.00	1 3/8 X 4 3/4
4400	420C442M200EJ8	29.00	18.50	11.40	14.30	1 3/4 X 3 3/4
4500	420C452M200BB8	29.30	20.00	11.00	13.40	2 X 3 1/4
4700	420C472M200AE8	27.70	16.70	12.00	15.40	1 3/8 X 5 1/4
5100	420C512M200AF8	25.30	15.50	13.20	16.80	1 3/8 X 5 3/4
5300	420C532M200EC8	24.80	16.00	12.80	15.90	1 3/4 X 4 1/4
5600	420C562M200BJ8	24.10	16.60	13.60	16.40	2 X 3 3/4
6100	420C612M200ED8	21.80	14.20	14.40	17.80	1 3/4 X 4 3/4
6600	420C662M200BC8	20.60	14.30	14.80	17.80	2 X 4 1/4
6900	420C692M200EE8	19.60	12.90	16.10	19.80	1 3/4 X 5 1/4
7600	420C762M200BD8	18.20	12.70	16.30	19.50	2 X 4 3/4
7800	420C782M200EF8	17.90	11.90	18.00	22.00	1 3/4 X 5 3/4
9100	420C912M200BE8	16.00	11.30	18.00	21.30	2 X 5 1/4
10000	420C103M200BF8	14.70	10.50	19.40	23.00	2 X 5 3/4
<b>250 Vdc (300 Vdc Surge)</b>						
600	420C601M250AK8	176.00	75.90	3.10	4.70	1 3/8 X 1 3/4
900	420C901M250AA8	118.00	51.30	4.30	6.60	1 3/8 X 2 1/4
1000	420C102M250AH8	82.60	36.30	5.30	8.00	1 3/8 X 2 3/4
1300	420C132M250EA8	82.30	41.20	5.70	8.00	1 3/4 X 2 1/4
1700	420C172M250AB8	63.80	28.40	6.50	9.80	1 3/8 X 3 1/4
1700	420C172M250BA8	66.60	37.20	6.40	8.60	2 X 2 1/4
1800	420C182M250EH8	59.10	29.20	7.20	10.20	1 3/4 X 2 3/4
2000	420C202M250AJ8	52.40	23.70	7.50	11.20	1 3/8 X 3 3/4
2300	420C232M250BH8	47.50	26.10	8.20	11.10	2 X 2 3/4
2400	420C242M250EB8	45.70	22.80	8.80	12.40	1 3/4 X 3 1/4
2400	420C242M250AC8	44.60	20.60	8.60	12.70	1 3/8 X 4 1/4
2700	420C272M250AD8	40.80	18.80	9.40	13.80	1 3/8 X 4 3/4
2900	420C292M250EJ8	37.40	18.90	10.00	14.10	1 3/4 X 3 3/4
3000	420C302M250BB8	36.70	20.40	9.80	13.20	2 X 3 1/4
3100	420C312M250AE8	36.50	17.20	10.40	15.20	1 3/8 X 5 1/4
3400	420C342M250AF8	33.2	15.9	11.5	16.6	1 3/8 X 5 3/4
3500	420C352M250EC8	31.9	16.3	11.3	15.8	1 3/4 X 4 1/4
3700	420C372M250BJ8	30.1	16.9	12.2	16.3	2 X 3 3/4
4100	420C412M250ED8	27.9	14.5	12.7	17.6	1 3/4 X 4 3/4
4400	420C442M250BC8	25.7	14.6	13.3	17.6	2 X 4 1/4
4600	420C462M250EE8	24.9	13.2	14.2	19.6	1 3/4 X 5 1/4
5100	420C512M250BD8	22.7	13.0	14.6	19.3	2 X 4 3/4
5200	420C522M250EF8	22.6	12.2	16.0	21.8	1 3/4 X 5 3/4
6000	420C602M250BE8	19.7	11.5	16.2	21.2	2 X 5 1/4
6700	420C672M250BF8	18.0	10.7	17.5	22.8	2 X 5 3/4
<b>300 Vdc (350 Vdc Surge)</b>						
450	420C451M300AK8	262.00	126.00	2.30	3.30	1 3/8 X 1 3/4
680	420C681M300AA8	175.00	84.70	3.20	4.50	1 3/8 X 2 1/4
1000	420C102M300AH8	122.00	59.50	3.90	5.60	1 3/8 X 2 3/4
1100	420C112M300EA8	111.00	54.10	4.50	6.50	1 3/4 X 2 1/4
1300	420C132M300AB8	93.70	46.20	4.80	6.80	1 3/8 X 3 1/4
1400	420C142M300BA8	98.90	49.30	5.20	7.40	2 X 2 1/4
1500	420C152M300AJ8	76.40	38.20	5.60	7.90	1 3/8 X 3 3/4
1500	420C152M300EH8	81.10	38.90	5.60	8.10	1 3/4 X 2 3/4
1800	420C182M300AC8	64.70	32.70	6.40	9.00	1 3/8 X 4 1/4
1900	420C192M300BH8	71.00	34.80	6.60	9.40	2 X 2 3/4
2000	420C202M300EB8	62.40	30.20	6.90	10.00	1 3/4 X 3 1/4

