Type SF Motor-Run and Power Supply Capacitors

Oil Filled/Impregnated, AC Rated, Metallized Polypropylene Capacitors



Type SF, AC rated metallized polypropylene capacitors provide starting torque and power factor correction for split phase motors typically used in refrigeration and air conditioning motor-run applications. Type SF also may be used to provide noise suppression, voltage regulation and line current reduction in power supply applications.

RoHS Compliant

Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Highlights

- Self healing
- Fault current protection up to 10,000 amps AFC
- Low energy consumption
- 4 - tine, 1/4" quick connect lug terminals are standard
- Meets EIA Standard EIA-456-A
- UL recognized File Number E71645
- CSA File Number 223507

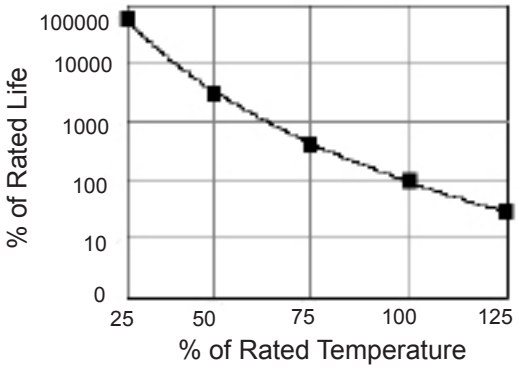
Specifications

Capacitance Range:	5.0 µF to 120.0 µF
Voltage Range:	240 Vac to 660 Vac
Capacitance Tolerance:	±10% standard, ± 6% and ±3% available
Temperature Range:	–40 ºC to 70 ºC standard, 90 ºC available
Dissipation Factor:	<0.1%

Service Life Objective

The service life objective for this series is 60,000 hours of operating life with a 94% survival rate when operated at full voltage, 60 Hz, and rated ambient temperature. AC capacitors are frequently used at voltages and ambient temperatures other than rated conditions. Service life may be estimated under specific conditions of temperature and voltage by using the curves as shown below and to the right.

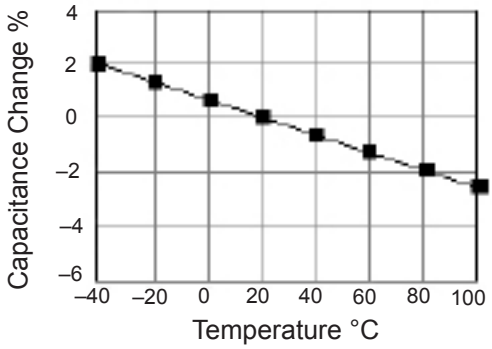
Life vs. Temperature



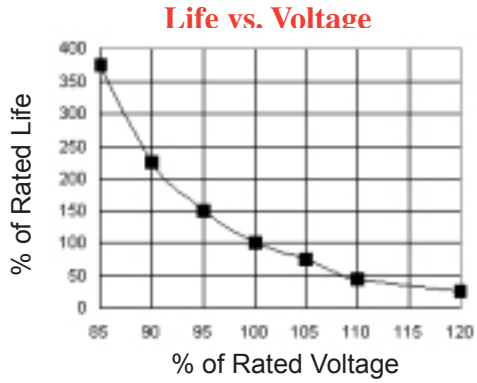
Capacitance vs. Temperature

The Capacitance vs. Temperature curve may be used to determine the capacitance change as a function of temperature. capacitance varies by no more than ±3% over the operating temperature range.

Capacitance vs. Temperature

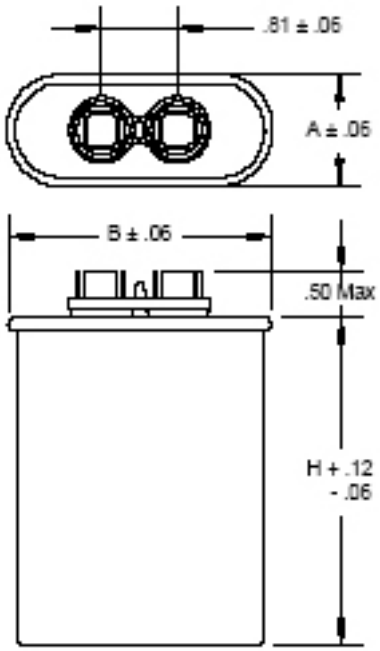


Life vs. Voltage



Type SF Motor-Run and Power Supply Capacitors

Outline Drawing - Oval Case Style



	Dimensions (Inches)		
Case Code	A	B	H
A	1.31	2.16	See Ratings Table
B	1.56	2.69	See Ratings Table
C	1.91	2.91	See Ratings Table
D	1.97	3.66	See Ratings Table

Ratings - Oval

Cap. (µF)	Stock Items	Catalog Part Number	Case Code	H (inches)
240 Vac Oval 70°C Case Temperature				
4.0	*	SFA24S4K219B-F	A	2.19
5.0	*	SFA24S5K219B-F	A	2.19
6.0	*	SFA24S6K219B-F	A	2.19
7.5	*	SFA24S7.5K219B-F	A	2.19
10.0	*	SFA24S10K219B-F	A	2.19
15.0	*	SFA24S15K263B-F	A	2.63
20.0	*	SFA24S20K300B-F	A	3.00
25.0	*	SFC24S25K263B-F	C	2.63
30.0	*	SFC24S30K263B-F	C	2.63
35.0	*	SFC24S35K263B-F	C	2.63
40.0	*	SFC24S40K303B-F	C	3.03
45.0	*	SFC24S45K303B-F	C	3.03
50.0	*	SFC24S50K303B-F	C	3.03
60.0	*	SFC24S60K391B-F	C	3.91
70.0	*	SFC24S70K391B-F	C	3.91

Ratings - Oval - RoHS Compliant

Cap. (µF)	Stock Items	Catalog Part Number	Case Code	H (Inches)
370 Vac Oval 70 °C Case Temperature				
2.0	S	SFA37S2K219B-F	A	2.19
2.0	*	SFA37S2K156B-F	A	1.56
3.0	S	SFA37S3K219B-F	A	2.19
3.0	*	SFA37S3K156B-F	A	1.56
4.0	S	SFA37S4K219B-F	A	2.19
4.0	*	SFA37S4K156B-F	A	1.56
5.0	S	SFA37S5K219B-F	A	2.19
5.0	*	SFA37S5K156B-F	A	1.56
6.0	S	SFA37S6K219B-F	A	2.19
6.0	*	SFA37S6K156B-F	A	1.56
7.5	S	SFA37S7.5K219B-F	A	2.19
10.0	S	SFA37S10K288B-F	A	2.88
12.5	S	SFA37S12.5K288B-F	A	2.88
15.0	S	SFA37S15K288B-F	A	2.88
17.5	S	SFC37S17.5K291B-F	C	2.91
20.0	S	SFC37S20K291B-F	C	2.91
20.0	*	SFA37S20K375B-F	A	3.75
25.0	S	SFC37S25K291B-F	C	2.91
30.0	S	SFC37S30K291B-F	C	2.91
35.0	S	SFC37S35K291B-F	C	2.91
40.0	S	SFC37S40K391B-F	C	3.91
45.0	S	SFC37S45K391B-F	C	3.91
50.0	S	SFC37S50K391B-F	C	3.91
440 Vac Oval 70 °C Case Temperature				
2.0	S	SFA44S2K203B-F	A	2.03
2.0	*	SFA44S2K156B-F	A	1.56
3.0	S	SFA44S3K209B-F	A	2.09
3.0	*	SFA44S3K156B-F	A	1.56
4.0	S	SFA44S4K209B-F	A	2.09
4.0	*	SFA44S4K156B-F	A	1.56
5.0	S	SFA44S5K219B-F	A	2.19
6.0	S	SFA44S6K288B-F	A	2.88
7.5	S	SFA44S7.5K288B-F	A	2.88
10.0	S	SFA44S10K375B-F	A	3.75
12.5	*	SFA44S12.5K375B-F	A	3.75
12.5	*	SFC44S12.5K291B-F	C	2.91
15.0	S	SFA44S15K375B-F	A	3.75
15.0	*	SFC44S15K291B-F	C	2.91
17.5	*	SFC44S17.5K291B-F	C	2.91
20.0	S	SFC44S20K391B-F	C	3.91
25.0	S	SFC44S25K391B-F	C	3.91
30.0	S	SFC44S30K391B-F	C	3.91
35.0	S	SFD44S35K391B-F	D	3.91
40.0	S	SFD44S40K391B-F	D	3.91
45.0	S	SFD44S45K391B-F	D	3.91
50.0	S	SFD44S50K391B-F	D	3.91
55.0	S	SFD44S55K391B-F	D	3.91
60.0	S	SFD44S60K391B-F	D	3.91

Ratings - Oval

Cap. (µF)	Stock Items	Catalog Part Number	Case Code	H (Inches)
660 Vac Oval 70 °C Case Temperature				
1.0	S	SFA66S1K156B-F	A	1.56
1.0	*	SFA66S1K219B-F	A	2.19
2.0	S	SFA66S2K156B-F	A	1.56
2.0	*	SFA66S2K219B-F	A	2.19
3.0	S	SFA66S3K288B-F	A	2.88
4.0	S	SFA66S4K288B-F	A	2.88
5.0	S	SFA66S5K375B-F	A	3.75
6.0	S	SFA66S6K375B-F	A	3.75
8.0	S	SFA66S8K475B-F	A	4.75
8.0	*	SFC66S8K291B-F	C	2.91
10.0	S	SFA66S10K475B-F	A	4.75
10.0	S	SFC66S10K291B-F	C	2.91
12.0	S	SFC66S12K391B-F	C	3.91
15.0	S	SFC66S15K391B-F	C	3.91
18.0	S	SFC66S18K391B-F	C	3.91
20.0	S	SFD66S20K391B-F	D	3.91
25.0	S	SFD66S25K391B-F	D	3.91
30.0	S	SFD66S30K391B-F	D	3.91
35.0	S	SFD66S35K491B-F	D	4.91
40.0	S	SFD66S40K491B-F	D	4.91

Options

- Tinplated steel cans are standard. Aluminum cases are available upon request.
- Tighter capacitance tolerances such as ±3% or ±6% are available.
- +90 °C ratings are available for HID lighting and power supply applications.
- Discharge resistors are available.
- Special terminal lugs such as 2 tines plus 1 fork lugs are available.
- Dual capacitance values are available for 370 Vac and 440 Vac applications.

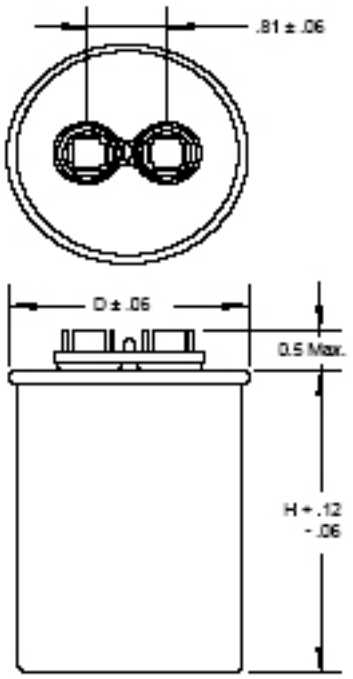
Hardware and Brackets: See Capacitor Hardware, page 5.000

Part Numbering System

SF	C	37	S	35	K	291	B	-F
Series	Case	AC Volt	Case Material	Cap	Tol. ±%	Can Height	VAR	RoHS
SF	**A** = 1 1/4" Oval	**24** = 240 Vac	**S** = Steel	**7** = 7.0 µF	**L** = ±3%	**238** = 2.38"	**A** = 2 way 70ºC	Compliant
	B = 1 1/2 Oval	**37** = 370 Vac	**T** = Aluminum	**35** = 35.0 µF	**H** = ±6%	**291** = 2.91"	**B** = 4 way 70 ºC	**-F** = Compliant
	C = 1 3/4" Oval	**44** = 440 Vac	w/steel cover		**K** = ±10%	**388** = 3.88"	**C** = 2 way 90 ºC	**Blank** = Not
	D = 2.0" Oval	**66** = 660 Vac	**A** = All Aluminum			**475** = 4.75"	**D** = 4 way 90 ºC	Compliant
						488 = 4.88"	**E** = Dual 2,3,4 70 ºC	
							F = Forks 70 ºC	
							G = Forks 90 ºC	
							H = Forks 100 ºC	
							J = Forks, 70 ºC Res.	
							K = Forks, 90 ºC Res.	
							L = Forks 100 ºC Res.	

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Outline Drawing - Round Case Style



Case Code

Case Code	D (Inches)	H
P	1.87	See Ratings Table
S	2.12	See Ratings Table
T	2.62	See Ratings Table

Ratings - Round

Cap (µF)	Stock Items	Catalog Part Number	Case Code	H (Inches)
370 Vac Round 70°C Case Temperature				
2.0	*	SFP37S2K238B-F	P	2.38
3.0	*	SFP37S3K238B-F	P	2.38
4.0	S	SFP37S4K238B-F	P	2.38
5.0	*	SFP37S5K238B-F	P	2.38
6.0	*	SFP37S6K238B-F	P	2.38
7.5	*	SFP37S7.5K238B-F	P	2.38
10.0	S	SFP37S10K238B-F	P	2.38
12.5	S	SFP37S12.5K238B-F	P	2.38
15.0	S	SFP37S15K238B-F	P	2.38
17.5	*	SFP37S17.5K238B-F	P	2.38
20.0	S	SFP37S20K238B-F	P	2.38
25.0	S	SFP37S25K288B-F	P	2.88
30.0	S	SFP37S30K288B-F	P	2.88
35.0	S	SFS37S35K288B-F	S	2.88
40.0	S	SFS37S40K288B-F	S	2.88
45.0	S	SFS37S45K375B-F	S	3.75
50.0	S	SFS37S50K375B-F	S	3.75
55.0	S	SFS37S55K375B-F	S	3.75
60.0	S	SFT37S60K303B-F	T	3.03
65.0	*	SFT37S65K303B-F	T	3.03
70.0	*	SFT37S70K303B-F	T	3.03
75.0	*	SFT37S75K391B-F	T	3.91
80.0	S	SFT37S80K391B-F	T	3.91
90.0	*	SFT37S90K475B-F	T	4.75
100.0	*	SFT37S100K475B-F	T	4.75
440 Vac Round 70 °C Case Temperature				
2.0	*	SFP44S2K238B-F	P	2.38
3.0	*	SFP44S3K238B-F	P	2.38
4.0	*	SFP44S4K238B-F	P	2.38
5.0	*	SFP44S5K238B-F	P	2.38
6.0	*	SFP44S6K238B-F	P	2.38
7.5	*	SFP44S7.5K238B-F	P	2.38
10.0	S	SFP44S10K238B-F	P	2.38
12.5	*	SFP44S12.5K238B-F	P	2.38
15.0	S	SFP44S15K288B-F	P	2.88
17.5	*	SFP44S17.5K288B-F	P	2.88
20.0	S	SFP44S20K288B-F	P	2.88
25.0	*	SFS44S25K288B-F	S	2.88
30.0	S	SFS44S30K288B-F	S	2.88
35.0	*	SFT44S35K303B-F	T	3.03
40.0	S	SFT44S40K391B-F	T	3.91
45.0	*	SFT44S45K391B-F	T	3.91
50.0	S	SFT44S50K391B-F	T	3.91
55.0	*	SFT44S55K391B-F	T	3.91
60.0	S	SFT44S60K475B-F	T	4.75

Ratings - Round -

Cap (µF)	Stock Items	Catalog Part Number	Case Code	H (Inches)
660 Vac Round 70°C Case Temperature				
2.0	*	SFP66S2K238B-F	P	2.38
3.0	*	SFP66S3K238B-F	P	2.38
5.0	*	SFP66S5K238B-F	P	2.38
7.5	*	SFP66S7.5K288B-F	P	2.88
10.0	*	SFP66S10K288B-F	P	2.88
12.5	*	SFS66S12.5K288B-F	S	2.88
15.0	*	SFS66S15K375B-F	S	3.75
17.5	*	SFT66S17.5K391B-F	T	3.91
20.0	*	SFT66S20K391B-F	T	3.91
25.0	*	SFT66S25K491B-F	T	4.91
30.0	*	SFT66S30K491B-F	T	4.91
35.0	*	SFT66S35K491B-F	T	4.91
40.0	*	SFT66S40K491B-F	T	4.91

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	T = 2 1/2" Round	**44** = 440 Vac	w/steel cover		**K** = ±10%	**388** = 3.88"	**C** = 2 way 90 ºC	**Blank** = Not
		66 = 660 Vac	**A** = All Aluminum		**Z** = Special	**475** = 4.75"	**D** = 4 way 90 ºC	Compliant
		X = Other				**488** = 4.88"	**E** = Dual 2,3,4 70 ºC	
							F = Forks 70 ºC	
							G = Forks 90 ºC	
							H = Forks 100 ºC	
							J = Forks, 70 ºC Res.	
							K = Forks, 90 ºC Res.	