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.

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

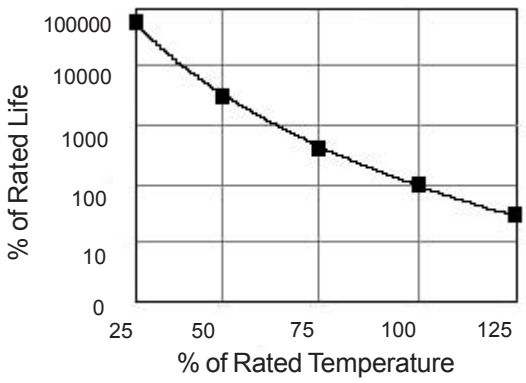
Specifications

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 º C 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.

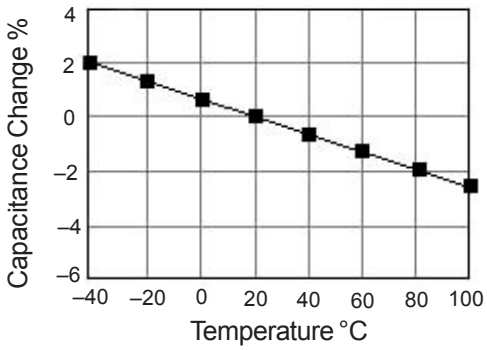
Life vs. Temperature



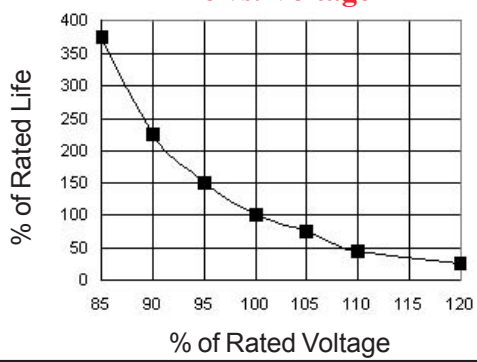
Capacitance vs. Temperature

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.

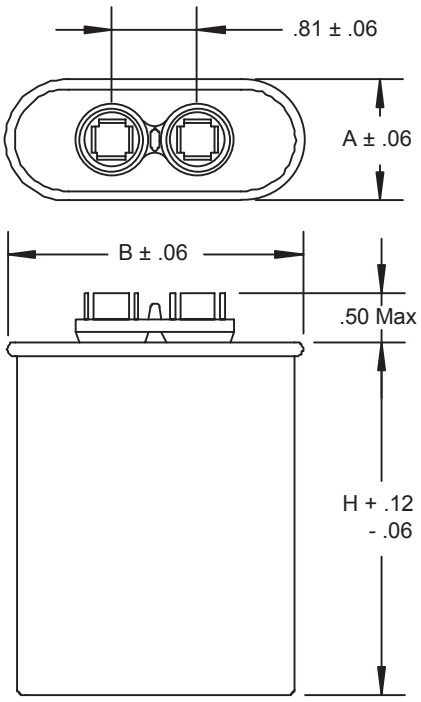
Capacitance vs. Temperature



Life vs. Voltage



Type SF - Oval Case Style



	Dimensions (Inches)		
Case Code	A	B	H
A	1.31	2.16	see table
C	1.91	2.91	see table
D	1.97	3.66	see table

Ratings - Oval Case Style

Cap. (µF)	Stock Items	Catalog Part Number	Case Code	H (inches)
240 Vac Oval 70°C Case Temperature				
4.0	*	SFA24S4K219B	A	2.19
5.0	*	SFA24S5K219B	A	2.19
6.0	*	SFA24S6K219B	A	2.19
7.5	*	SFA24S7.5K219B	A	2.19
10.0	*	SFA24S10K219B	A	2.19
15.0	*	SFA24S15K263B	A	2.63
20.0	*	SFA24S20K303B	A	3.03
25.0	*	SFC24S25K269B	C	2.69
30.0	*	SFC24S30K269B	C	2.69
35.0	*	SFC24S35K269B	C	2.69
40.0	*	SFC24S40K303B	C	3.03
45.0	*	SFC24S45K303B	C	3.03
50.0	*	SFC24S50K303B	C	3.03
60.0	*	SFC24S60K388B	C	3.88
70.0	*	SFC24S70K388B	C	3.88

Ratings - Oval Case Style

Cap. (µF)	Stock Items	Catalog Part Number	Case Code	H Inches
370 Vac 70 °C Case Temperature				
2.0	S	SFA37S2K219B	A	2.19
2.0	*	SFA37S2K156B	A	1.56
3.0	S	SFA37S3K219B	A	2.19
3.0	*	SFA37S3K156B	A	1.56
4.0	S	SFA37S4K219B	A	2.19
4.0	*	SFA37S4K156B	A	1.56
5.0	S	SFA37S5K219B	A	2.19
5.0	*	SFA37S5K156B	A	1.56
6.0	S	SFA37S6K219B	A	2.19
6.0	*	SFA37S6K156B	A	1.56
7.5	S	SFA37S7.5K219B	A	2.19
7.5	*	SFA37S7.5K156B	A	1.56
10.0	S	SFA37S10K288B	A	2.88
12.5	S	SFA37S12.5K288B	A	2.88
15.0	S	SFA37S15K288B	A	2.88
17.5	S	SFC37S17.5K291B	C	2.91
20.0	S	SFC37S20K291B	C	2.91
20.0	*	SFA37S20K375B	A	3.75
25.0	S	SFC37S25K291B	C	2.91
30.0	S	SFC37S30K291B	C	2.91
35.0	S	SFC37S35K291B	C	2.91
40.0	S	SFC37S40K391B	C	3.91
45.0	S	SFC37S45K391B	C	3.91
50.0	S	SFC37S50K391B	C	3.91
50.0	S	SFD37S50K391B	D	3.91
440 Vac 70 °C Case Temperature				
2.0	S	SFA44S2K203B	A	2.03
2.0	*	SFA44S2K156B	A	1.56
3.0	S	SFA44S3K209B	A	2.09
3.0	*	SFA44S3K156B	A	1.56
4.0	S	SFA44S4K209B	A	2.09
4.0	*	SFA44S4K156B	A	1.56
5.0	S	SFA44S5K219B	A	2.19
6.0	S	SFA44S6K288B	A	2.88
7.5	S	SFA44S7.5K288B	A	2.88
10.0	S	SFA44S10K375B	A	3.75
12.5	*	SFA44S12.5K375B	A	3.75
12.5	*	SFC44S12.5K291B	C	2.91
15.0	S	SFA44S15K375B	A	3.75
15.0	*	SFC44S15K291B	C	2.91
17.5	*	SFC44S17.5K291B	C	2.91
20.0	S	SFC44S20K391B	C	3.91
25.0	S	SFC44S25K391B	C	3.91
30.0	S	SFC44S30K391B	C	3.91
35.0	S	SFD44S35K391B	D	3.91
40.0	S	SFD44S40K391B	D	3.91
45.0	S	SFD44S45K391B	D	3.91
50.0	S	SFD44S50K391B	D	3.91
55.0	S	SFD44S55K391B	D	3.91
60.0	S	SFD44S60K391B	D	3.91

Ratings - Oval Case Style

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

C — Case
A = 1 1/4" Oval
B = 1 1/2" Oval
C = 1 3/4" Oval
D = 2.0" Oval
P = 1 3/4" Round
S = 2.0" Round
T = 2 1/2" Round

37 — AC Volt
24 = 240 Vac
37 = 370 Vac
44 = 440 Vac
66 = 660 Vac
X = Other

S — Case Material
S = Steel
T = Aluminum with steel cover
A = All Aluminum

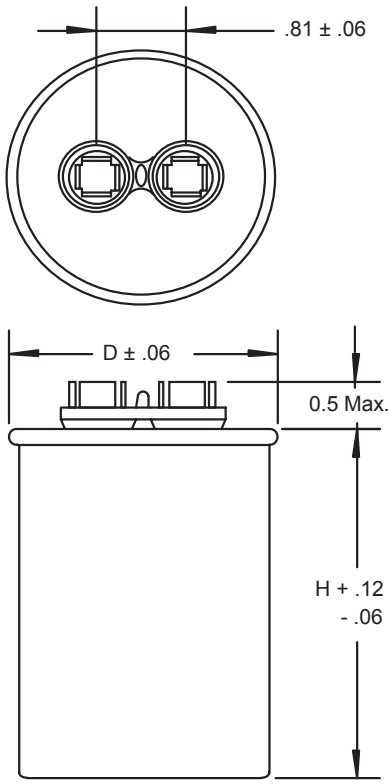
35 — Cap
7 = 7.0 µF
35 = 35.0 µF

K — Tol. ±%
L = ±3%
H = ±6%
K = ±10%

291 — Can Height
238 = 2.38"
291 = 2.91"
388 = 3.88"
475 = 4.75"
488 = 4.88"

B — VAR
A = 2 way 70 °C
B = 4 way 70 °C
C = 2 way 90 °C
D = 4 way 90 °C
E = Dual 2,3,4 70 °C
F = Forks 70 °C
G = Forks 90 °C
H = Forks 100 °C
J = Forks, 70° Res.
K = Forks, 90° Res.
L = Forks, 100° Res.
Z = Other

Type SF - Round Case Style



Case Code

Case Code	D (Inches)	H
P	1.87	see table
S	2.12	see table
T	2.62	see table

Hardware and Brackets:

See page 5.000 for details

Cap (µF)	Stock Items	Catalog Part Number	Case Code	H (Inches)
370 Vac 70°C Case Temperature				
2.0	*	SFP37S2K238B	P	2.38
3.0	*	SFP37S3K238B	P	2.38
4.0	S	SFP37S4K238B	P	2.38
5.0	*	SFP37S5K238B	P	2.38
6.0	*	SFP37S6K238B	P	2.38
7.5	*	SFP37S7.5K238B	P	2.38
10.0	S	SFP37S10K238B	P	2.38
12.5	S	SFP37S12.5K238B	P	2.38
15.0	S	SFP37S15K238B	P	2.38
17.5	*	SFP37S17.5K238B	P	2.38
20.0	S	SFP37S20K238B	P	2.38
25.0	S	SFP37S25K288B	P	2.88
30.0	S	SFP37S30K288B	P	2.88
35.0	S	SFS37S35K288B	S	2.88
40.0	S	SFS37S40K288B	S	2.88
45.0	S	SFS37S45K375B	S	3.75
50.0	S	SFS37S50K375B	S	3.75
55.0	S	SFS37S55K375B	S	3.75
60.0	S	SFT37S60K303B	T	3.03
65.0	*	SFT37S65K303B	T	3.03
70.0	*	SFT37S70K303B	T	3.03
75.0	*	SFT37S75K391B	T	3.91
80.0	S	SFT37S80K391B	T	3.91
90.0	*	SFT37S90K391B	T	3.91
100.0	*	SFT37S100K391B	T	3.91
Cap (µF)	**Stock Items**	**Catalog Part Number**	**Case Code**	**H (Inches)**
440 Vac 70 °C Case Temperature				
2.0	*	SFP44S2K238B	P	2.38
3.0	*	SFP44S3K238B	P	2.38
4.0	*	SFP44S4K238B	P	2.38
5.0	*	SFP44S5K238B	P	2.38
6.0	*	SFP44S6K238B	P	2.38
7.5	*	SFP44S7.5K238B	P	2.38
10.0	S	SFP44S10K238B	P	2.38
12.5	*	SFP44S12.5K238B	P	2.38
15.0	S	SFP44S15K288B	P	2.88
17.5	*	SFP44S17.5K288B	P	2.88
20.0	S	SFP44S20K288B	P	2.88
25.0	*	SFS44S25K288B	S	2.88
30.0	S	SFS44S30K288B	S	2.88
35.0	*	SFT44S35K303B	T	3.03
40.0	S	SFT44S40K391B	T	3.91
45.0	*	SFT44S45K391B	T	3.91
50.0	S	SFT44S50K391B	T	3.91
55.0	*	SFT44S55K391B	T	3.91
60.0	S	SFT44S60K475B	T	4.75

Ratings - Round Case Style

Cap (µF)	Stock Items	Catalog Part Number	Case Code	H (Inches)
660 Vac 70°C Case Temperature				
2.0	*	SFP66S2K238B	P	2.38
3.0	*	SFP66S3K238B	P	2.38
5.0	*	SFP66S5K238B	P	2.38
7.5	*	SFP66S7.5K288B	P	2.88
10.0	*	SFP66S10K288B	P	2.88
12.5	*	SFS66S12.5K288B	S	2.88
15.0	*	SFS66S15K375B	S	3.75
17.5	*	SFT66S17.5K388B	T	3.88
20.0	*	SFT66S20K388B	T	3.88
25.0	*	SFT366S25K488B	T	4.88
30.0	*	SFT66S30K488B	T	4.88
35.0	*	SFT66S35K488B	T	4.88
40.0	*	SFT66S40K488B	T	4.88

Options

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- **T** = 2 1/2" Round

37 – AC Volt
- **24** = 240 Vac
- **37** = 370 Vac
- **44** = 440 Vac
- **66** = 660 Vac
- **X** = Other

S – Case Material
- **S** = Steel
- **T** = Aluminum with steel cover
- **A** = All Aluminum

35 – Cap
- **7** = 7.0 µF
- **35** = 35.0 µF

K – Tol. ±%
- **L** = ±3%
- **H** = ±6%
- **K** = ±10%
- **Z** = Special

291 – Can Height
- **238** = 2.38"
- **291** = 2.91"
- **388** = 3.88"
- **475** = 4.75"
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B – VAR
- **A** = 2 way 70 °C
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- **F** = Forks 70 °C
- **G** = Forks 100 °C
- **H** = Forks 100 °C
- **J** = Forks, 70° Res.
- **K** = Forks, 90° Res.
- **L** = Forks, 100° Res.