

# 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

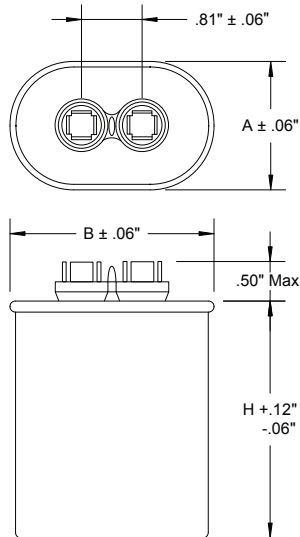
- Self healing
- Fault current protection up to 10,000 amps AFC
- Low energy consumption
- 4 - tine, 1/4" quick connect lug terminals are standard
- Meets EIA Standard EIA-456-A
- UL recognized File Number E71645
- CSA File Number 223507

### Specifications

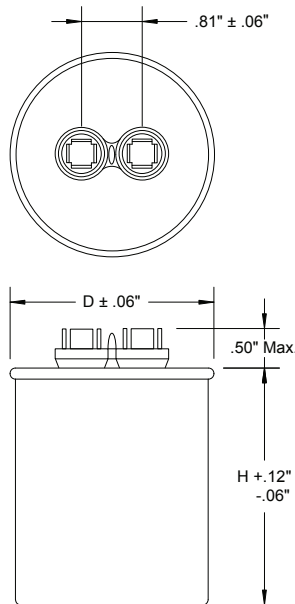
|   |   |
|---|---|
| Capacitance Range                       | 5.0 $\mu$ F to 120.0 $\mu$ F  |
| Capacitance Tolerance                   | $\pm$ 10% standard, $\pm$ 6% and $\pm$ 3% available                     |
| Rated Voltage                           | 240 Vac to 660 Vac  |
| Operating Temperature Range with Ripple | -40 $^{\circ}$ C to 70 $^{\circ}$ C standard, 90 $^{\circ}$ C available |
| Dissipation Factor                      | <0.1%   |
| Service Life Objective                  | 60,000 h with 94% survival rate   |
| RoHS Compliant                          |   |

### Dimensions

#### Oval Case Style



#### Round Case Style



#### Construction Details

|                   |                                       |
|-------------------|---------------------------------------|
| Case Material     | Tin Plated Steel or Aluminum          |
| Encapsulation     | Environmentally Safe Dielectric Fluid |
| Terminal Material | Tin Plated Steel                      |

Note: The capacitor's safety pressure interrupter is designed to disconnect the capacitor element as the cover expands upward due to gas pressure build up. Catastrophic failure may result if movement of the cover and or terminals are restricted. Rigid bus bars are not recommended as they may restrict movement of the cover or terminals. Customers are advised to provide at least 0.5" clearance above the cover to allow for its expansion.

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

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

# Type SF Motor-Run and Power Supply Capacitors

## Oil Filled/Impregnated, AC Rated, Metallized Polypropylene Capacitors 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<br>B = 1 1/2" Oval<br>C = 1 3/4" Oval<br>D = 2.0" Oval<br>P = 1 3/4" Round<br>S = 2.0" Round<br>T = 2 1/2" Round | 24 = 240 Vac<br>37 = 370 Vac<br>44 = 440 Vac<br>66 = 660 Vac | S = Steel<br>T = Aluminum<br>w/steel cover | 7 = 7.0 µF<br>35 = 35.0 µF | L = ±3%<br>H = ±6%<br>K = ±10% | 238 = 2.38"<br>291 = 2.91"<br>388 = 3.88"<br>475 = 4.75"<br>488 = 4.88" | A = 2 way 70°C<br>B = 4 way 70°C<br>C = 2 way 90°C<br>D = 4 way 90°C<br>E = Dual 2,3,4 70°C<br>F = Forks 70°C<br>G = Forks 90°C<br>H = Forks 100°C<br>J = Forks, 70°C Res.<br>K = Forks, 90°C Res.<br>L = Forks 100°C Res.<br>Z = Other | <b>Compliant</b><br>-F = Compliant<br>Blank = Not Compliant |

### Round Ratings

| Cap (µF)                                    | Stock Items | Catalog Part Number | Case Code | H (Inches) |
|---|-------------|---------------------|-----------|------------|
| <b>370 Vac Round 70 °C Case Temperature</b> |             |                     |           |            |
| 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       |
| <b>440 Vac Round 70 °C Case Temperature</b> |             |                     |           |            |
| 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  | *           | SFP44S10K238B-F     | P         | 2.38       |
| 12.5  | *           | SFS44S12.5K238B-F   | S         | 2.38       |
| 15.0  | *           | SFS44S15K238B-F     | S         | 2.38       |
| 17.5  | *           | SFS44S17.5K238B-F   | S         | 2.38       |
| 20.0  | S           | SFP44S20K288B-F     | P         | 2.88       |
| 25.0  | *           | SFS44S25K288B-F     | S         | 2.88       |
| 30.0  | S           | SFS44S30K288B-F     | S         | 2.88       |
| <b>660 Vac Round 70 °C Case Temperature</b> |             |                     |           |            |
| 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       |

### Options

Tinplated steel or aluminum cans, with and without studs, 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 lug are available.

Dual capacitance values are available for 370 Vac and 440 Vac applications.

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## Oil Filled/Impregnated, AC Rated, Metallized Polypropylene Capacitors

### Oval Ratings

| Cap. (µF)                                  | Stock Items | Catalog Part Number | Case Code | H (inches) |
|--|-------------|---------------------|-----------|------------|
| <b>240 Vac Oval 70 °C Case Temperature</b> |             |                     |           |            |
| 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       |
| <b>370 Vac Oval 70 °C Case Temperature</b> |             |                     |           |            |
| 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       |
| <b>440 Vac Oval 70 °C Case Temperature</b> |             |                     |           |            |
| 2.0  | S           | SFA44S2K203B-F      | A         | 2.03       |
| 2.0  | *           | SFA44S2K156B-F      | A         | 1.56       |
| 3.0  | S           | SFA44S3K209B-F      | A         | 2.09       |

| Cap. (µF)                                  | Stock Items | Catalog Part Number | Case Code | H (inches) |
|--|-------------|---------------------|-----------|------------|
| <b>440 Vac Oval 70 °C Case Temperature</b> |             |                     |           |            |
| 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       |
| <b>660 Vac Oval 70 °C Case Temperature</b> |             |                     |           |            |
| 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 or aluminum cans, with and without studs, 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 370Vac and 440 Vac applications.

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