

# 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

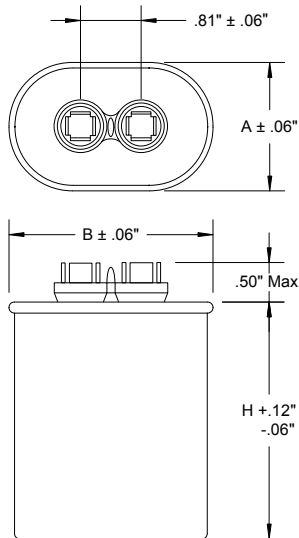
### Specifications

|   |   |
|---|---|
| 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

[Click here to view hardware](#)

#### Oval Case Style



#### Round Case Style



#### Construction Details

|                   |                                       |
|-------------------|---------------------------------------|
| Case Material     | Aluminum or Tin Plated Steel          |
| 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) |      | H                 |
|-----------|---------------------|------|-------------------|
|           | A                   | B    |                   |
| 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   | T  | 35                                   | K  | 291   | B   | -F   |
|--------|--|--|--|--------------------------------------|--|---|---|--|
| Series | Case   | AC Volt  | Case Material                              | Cap                                  | Tol. $\pm\%$                                     | 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 | T = Aluminum<br>w/steel cover<br>S = Steel | 7 = 7.0 $\mu$ F<br>35 = 35.0 $\mu$ F | L = $\pm 3\%$<br>H = $\pm 6\%$<br>K = $\pm 10\%$ | 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><b>Blank</b> = Not Compliant |

### Options

Capacitors in aluminum cases with mounting studs, are available upon request.

Tighter capacitance tolerances such as  $\pm 3\%$  or  $\pm 6\%$  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.

Steel cases are not for new design. Check parametric search for product availability.

# Type SF Motor-Run and Power Supply Capacitors

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

| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) | Steel Catalog Part Number* | H (inches) |
|-------------|-----------|------------------------------|------------|----------------------------|------------|
| <b>240V</b> |           |                              |            |                            |            |
| 4.0         | A         | SFA24T4K219B-F               | 2.19       | SFA24S4K219B-F             | 2.19       |
| 5.0         | A         | SFA24T5K219B-F               | 2.19       | SFA24S5K219B-F             | 2.19       |
| 6.0         | A         | SFA24T6K219B-F               | 2.19       | SFA24S6K219B-F             | 2.19       |
| 7.5         | A         | SFA24T7.5K219B-F             | 2.19       | SFA24S7.5K219B-F           | 2.19       |
| 10.0        | A         | SFA24T10K219B-F              | 2.19       | SFA24S10K219B-F            | 2.19       |
| 15.0        | A         | SFA24T15K288B-F              | 2.88       | SFA24S15K263B-F            | 2.63       |
| 20.0        | A         | SFA24T20K288B-F              | 2.88       | SFA24S20K300B-F            | 3.00       |
| 25.0        | C         | SFC24T25K291B-F              | 2.91       | SFC24S25K263B-F            | 2.63       |
| 30.0        | C         | SFC24T30K291B-F              | 2.91       | SFC24S30K263B-F            | 2.63       |
| 35.0        | C         | SFC24T35K291B-F              | 2.91       | SFC24S35K263B-F            | 2.63       |
| 40.0        | C         | SFC24T40K291B-F              | 2.91       | SFC24S40K303B-F            | 3.03       |
| 45.0        | C         | SFC24T45K291B-F              | 2.91       | SFC24S45K303B-F            | 3.03       |
| 50.0        | C         | SFC24T50K291B-F              | 2.91       | SFC24S50K303B-F            | 3.03       |
| 60.0        | C         | SFC24T60K391B-F              | 3.91       | SFC24S60K391B-F            | 3.91       |
| 70.0        | C         | SFC24T70K391B-F              | 3.91       | SFC24S70K391B-F            | 3.91       |
| <b>370V</b> |           |                              |            |                            |            |
| 2.0         | A         | SFA37T2K219B-F               | 2.19       | SFA37S2K219B-F             | 2.19       |
| 2.0         | A         | SFA37T2K156B-F               | 1.56       | SFA37S2K156B-F             | 1.56       |
| 3.0         | A         | SFA37T3K219B-F               | 2.19       | SFA37S3K219B-F             | 2.19       |
| 3.0         | A         | SFA37T3K156B-F               | 1.56       | SFA37S3K156B-F             | 1.56       |
| 4.0         | A         | SFA37T4K219B-F               | 2.19       | SFA37S4K219B-F             | 2.19       |
| 4.0         | A         | SFA37T4K156B-F               | 1.56       | SFA37S4K156B-F             | 1.56       |
| 5.0         | A         | SFA37T5K219B-F               | 2.19       | SFA37S5K219B-F             | 2.19       |
| 5.0         | A         | SFA37T5K156B-F               | 1.56       | SFA37S5K156B-F             | 1.56       |
| 6.0         | A         | SFA37T6K219B-F               | 2.19       | SFA37S6K219B-F             | 2.19       |
| 6.0         | A         | SFA37T6K156B-F               | 1.56       | SFA37S6K156B-F             | 1.56       |
| 7.5         | A         | SFA37T7.5K219B-F             | 2.19       | SFA37S7.5K219B-F           | 2.19       |
| 10.0        | A         | SFA37T10K288B-F              | 2.88       | SFA37S10K288B-F            | 2.88       |
| 12.5        | A         | SFA37T12.5K288B-F            | 2.88       | SFA37S12.5K288B-F          | 2.88       |
| 15.0        | A         | SFA37T15K288B-F              | 2.88       | SFA37S15K288B-F            | 2.88       |
| 17.5        | C         | SFC37T17.5K291B-F            | 2.91       | SFC37S17.5K291B-F          | 2.91       |
| 20.0        | C         | SFC37T20K291B-F              | 2.91       | SFC37S20K291B-F            | 2.91       |
| 20.0        | A         | SFA37T20K388B-F              | 3.88       | SFA37S20K375B-F            | 3.75       |
| 25.0        | C         | SFC37T25K291B-F              | 2.91       | SFC37S25K291B-F            | 2.91       |
| 30.0        | C         | SFC37T30K291B-F              | 2.91       | SFC37S30K291B-F            | 2.91       |
| 35.0        | C         | SFC37T35K291B-F              | 2.91       | SFC37S35K291B-F            | 2.91       |
| 40.0        | C         | SFC37T40K391B-F              | 3.91       | SFC37S40K391B-F            | 3.91       |
| 45.0        | C         | SFC37T45K391B-F              | 3.91       | SFC37S45K391B-F            | 3.91       |
| 50.0        | C         | SFC37T50K391B-F              | 3.91       | SFC37S50K391B-F            | 3.91       |
| <b>440V</b> |           |                              |            |                            |            |
| 2.0         | A         | SFA44T2K219B-F               | 2.19       | SFA44S2K203B-F             | 2.03       |
| 2.0         | A         | SFA44T2K156B-F               | 1.56       | SFA44S2K156B-F             | 1.56       |

| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) | Steel Catalog Part Number* | H (inches) |
|-------------|-----------|------------------------------|------------|----------------------------|------------|
| <b>440V</b> |           |                              |            |                            |            |
| 3.0         | A         | SFA44T3K219B-F               | 2.19       | SFA44S3K209B-F             | 2.09       |
| 3.0         | A         | SFA44T3K156B-F               | 1.56       | SFA44S3K156B-F             | 1.56       |
| 4.0         | A         | SFA44T4K219B-F               | 2.19       | SFA44S4K209B-F             | 2.09       |
| 4.0         | A         | SFA44T4K156B-F               | 1.56       | SFA44S4K156B-F             | 1.56       |
| 5.0         | A         | SFA44T5K219B-F               | 2.19       | SFA44S5K219B-F             | 2.19       |
| 6.0         | A         | SFA44T6K288B-F               | 2.88       | SFA44S6K288B-F             | 2.88       |
| 7.5         | A         | SFA44T7.5K288B-F             | 2.88       | SFA44S7.5K288B-F           | 2.88       |
| 10.0        | A         | SFA44T10K388B-F              | 3.88       | SFA44S10K375B-F            | 3.75       |
| 12.5        | A         | SFA44T12.5K388B-F            | 3.88       | SFA44S12.5K375B-F          | 3.75       |
| 12.5        | C         | SFC44T12.5K291B-F            | 2.91       | SFC44S12.5K291B-F          | 2.91       |
| 15.0        | A         | SFA44T15K388B-F              | 3.88       | SFA44S15K375B-F            | 3.75       |
| 15.0        | C         | SFC44T15K291B-F              | 2.91       | SFC44S15K291B-F            | 2.91       |
| 17.5        | C         | SFC44T17.5K291B-F            | 2.91       | SFC44S17.5K291B-F          | 2.91       |
| 20.0        | C         | SFC44T20K391B-F              | 3.91       | SFC44S20K391B-F            | 3.91       |
| 25.0        | C         | SFC44T25K391B-F              | 3.91       | SFC44S25K391B-F            | 3.91       |
| 30.0        | C         | SFC44T30K391B-F              | 3.91       | SFC44S30K391B-F            | 3.91       |
| 35.0        | D         | SFD44T35K391B-F              | 3.91       | SFD44S35K391B-F            | 3.91       |
| 40.0        | D         | SFD44T40K391B-F              | 3.91       | SFD44S40K391B-F            | 3.91       |
| 45.0        | D         | SFD44T45K391B-F              | 3.91       | SFD44S45K391B-F            | 3.91       |
| 50.0        | D         | SFD44T50K391B-F              | 3.91       | SFD44S50K391B-F            | 3.91       |
| 55.0        | D         | SFD44T55K391B-F              | 3.91       | SFD44S55K391B-F            | 3.91       |
| 60.0        | D         | SFD44T60K391B-F              | 3.91       | SFD44S60K391B-F            | 3.91       |
| <b>660V</b> |           |                              |            |                            |            |
| 1.0         | A         | SFA66T1K156B-F               | 1.56       | SFA66S1K156B-F             | 1.56       |
| 1.0         | A         | SFA66T1K219B-F               | 2.19       | SFA66S1K219B-F             | 2.19       |
| 2.0         | A         | SFA66T2K156B-F               | 1.56       | SFA66S2K156B-F             | 1.56       |
| 2.0         | A         | SFA66T2K219B-F               | 2.19       | SFA66S2K219B-F             | 2.19       |
| 3.0         | A         | SFA66T3K288B-F               | 2.88       | SFA66S3K288B-F             | 2.88       |
| 4.0         | A         | SFA66T4K288B-F               | 2.88       | SFA66S4K288B-F             | 2.88       |
| 5.0         | A         | SFA66T5K388B-F               | 3.88       | SFA66S5K375B-F             | 3.75       |
| 6.0         | A         | SFA66T6K388B-F               | 3.88       | SFA66S6K375B-F             | 3.75       |
| 8.0         | A         | SFA66T8K475B-F               | 4.75       | SFA66S8K475B-F             | 4.75       |
| 8.0         | C         | SFC66T8K291B-F               | 2.91       | SFC66S8K291B-F             | 2.91       |
| 10.0        | A         | SFA66T10K475B-F              | 4.75       | SFA66S10K475B-F            | 4.75       |
| 10.0        | C         | SFC66T10K291B-F              | 2.91       | SFC66S10K291B-F            | 2.91       |
| 12.0        | C         | SFC66T12K391B-F              | 3.91       | SFC66S12K391B-F            | 3.91       |
| 15.0        | C         | SFC66T15K391B-F              | 3.91       | SFC66S15K391B-F            | 3.91       |
| 18.0        | C         | SFC66T18K391B-F              | 3.91       | SFC66S18K391B-F            | 3.91       |
| 20.0        | D         | SFD66T20K391B-F              | 3.91       | SFD66S20K391B-F            | 3.91       |
| 25.0        | D         | SFD66T25K391B-F              | 3.91       | SFD66S25K391B-F            | 3.91       |
| 30.0        | D         | SFD66T30K391B-F              | 3.91       | SFD66S30K391B-F            | 3.91       |
| 35.0        | D         | SFD66T35K475B-F              | 4.75       | SFD66S35K491B-F            | 4.91       |
| 40.0        | D         | SFD66T40K475B-F              | 4.75       | SFD66S40K491B-F            | 4.91       |

\*Steel cases are not for new design. Check parametric search for product availability.

# Type SF Motor-Run and Power Supply Capacitors

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

| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) | Steel Catalog Part Number* | H (inches) |
|-------------|-----------|------------------------------|------------|----------------------------|------------|
| <b>370V</b> |           |                              |            |                            |            |
| 2.0         | P         | SFP37T2K238B-F               | 2.38       | SFP37S2K238B-F             | 2.38       |
| 3.0         | P         | SFP37T3K238B-F               | 2.38       | SFP37S3K238B-F             | 2.38       |
| 4.0         | P         | SFP37T4K238B-F               | 2.38       | SFP37S4K238B-F             | 2.38       |
| 5.0         | P         | SFP37T5K238B-F               | 2.38       | SFP37S5K238B-F             | 2.38       |
| 6.0         | P         | SFP37T6K238B-F               | 2.38       | SFP37S6K238B-F             | 2.38       |
| 7.5         | P         | SFP37T7.5K238B-F             | 2.38       | SFP37S7.5K238B-F           | 2.38       |
| 10.0        | P         | SFP37T10K238B-F              | 2.38       | SFP37S10K238B-F            | 2.38       |
| 12.5        | P         | SFP37T12.5K238B-F            | 2.38       | SFP37S12.5K238B-F          | 2.38       |
| 15.0        | P         | SFP37T15K238B-F              | 2.38       | SFP37S15K238B-F            | 2.38       |
| 17.5        | P         | SFP37T17.5K238B-F            | 2.38       | SFP37S17.5K238B-F          | 2.38       |
| 20.0        | P         | SFP37T20K238B-F              | 2.38       | SFP37S20K238B-F            | 2.38       |
| 25.0        | P         | SFP37T25K284B-F              | 2.84       | SFP37S25K288B-F            | 2.88       |
| 30.0        | P         | SFP37T30K284B-F              | 2.84       | SFP37S30K288B-F            | 2.88       |
| 35.0        | S         | SFS37T35K291B-F              | 2.91       | SFS37S35K288B-F            | 2.88       |
| 40.0        | S         | SFS37T40K291B-F              | 2.91       | SFS37S40K288B-F            | 2.88       |
| 45.0        | S         | SFS37T45K384B-F              | 3.84       | SFS37S45K375B-F            | 3.75       |
| 50.0        | S         | SFS37T50K384B-F              | 3.84       | SFS37S50K375B-F            | 3.75       |
| 55.0        | S         | SFS37T55K384B-F              | 3.84       | SFS37S55K375B-F            | 3.75       |
| 60.0        | T         | SFT37T60K291B-F              | 2.91       | SFT37S60K303B-F            | 3.03       |
| 65.0        | T         | SFT37T65K291B-F              | 2.91       | SFT37S65K303B-F            | 3.03       |
| 70.0        | T         | SFT37T70K291B-F              | 2.91       | SFT37S70K303B-F            | 3.03       |
| 75.0        | T         | SFT37T75K391B-F              | 3.91       | SFT37S75K391B-F            | 3.91       |
| 80.0        | T         | SFT37T80K391B-F              | 3.91       | SFT37S80K391B-F            | 3.91       |
| 90.0        | T         | SFT37T90K475B-F              | 4.75       | SFT37S90K475B-F            | 4.75       |
| 100.0       | T         | SFT37T100K475B-F             | 4.75       | SFT37S100K475B-F           | 4.75       |
| <b>440V</b> |           |                              |            |                            |            |
| 2.0         | P         | SFP44T2K238B-F               | 2.38       | SFP44S2K238B-F             | 2.38       |
| 3.0         | P         | SFP44T3K238B-F               | 2.38       | SFP44S3K238B-F             | 2.38       |
| 4.0         | P         | SFP44T4K238B-F               | 2.38       | SFP44S4K238B-F             | 2.38       |

| Cap. (µF)   | Case Code | Aluminum Catalog Part Number | H (inches) | Steel Catalog Part Number* | H (inches) |
|-------------|-----------|------------------------------|------------|----------------------------|------------|
| <b>440V</b> |           |                              |            |                            |            |
| 5.0         | P         | SFP44T5K238B-F               | 2.38       | SFP44S5K238B-F             | 2.38       |
| 6.0         | P         | SFP44T6K238B-F               | 2.38       | SFP44S6K238B-F             | 2.38       |
| 7.5         | P         | SFP44T7.5K238B-F             | 2.38       | SFP44S7.5K238B-F           | 2.38       |
| 10.0        | P         | SFP44T10K238B-F              | 2.38       | SFP44S10K238B-F            | 2.38       |
| 12.5        | P         | SFP44T12.5K238B-F            | 2.38       | SFP44S12.5K238B-F          | 2.38       |
| 15.0        | P         | SFP44T15K284B-F              | 2.84       | SFP44S15K288B-F            | 2.88       |
| 17.5        | P         | SFP44T17.5K284B-F            | 2.84       | SFP44S17.5K288B-F          | 2.88       |
| 20.0        | P         | SFP44T20K284B-F              | 2.84       | SFP44S20K288B-F            | 2.88       |
| 25.0        | S         | SFS44T25K291B-F              | 2.91       | SFS44S25K288B-F            | 2.88       |
| 30.0        | S         | SFS44T30K291B-F              | 2.91       | SFS44S30K288B-F            | 2.88       |
| 35.0        | T         | SFT44T35K291B-F              | 2.91       | SFT44S35K303B-F            | 3.03       |
| 40.0        | T         | SFT44T40K391B-F              | 3.91       | SFT44S40K391B-F            | 3.91       |
| 45.0        | T         | SFT44T45K391B-F              | 3.91       | SFT44S45K391B-F            | 3.91       |
| 50.0        | T         | SFT44T50K391B-F              | 3.91       | SFT44S50K391B-F            | 3.91       |
| 55.0        | T         | SFT44T55K391B-F              | 3.91       | SFT44S55K391B-F            | 3.91       |
| 60.0        | T         | SFT44T60K475B-F              | 4.75       | SFT44S60K475B-F            | 4.75       |
| <b>660V</b> |           |                              |            |                            |            |
| 2.0         | P         | SFP66T2K238B-F               | 2.38       | SFP66S2K238B-F             | 2.38       |
| 3.0         | P         | SFP66T3K238B-F               | 2.38       | SFP66S3K238B-F             | 2.38       |
| 5.0         | P         | SFP66T5K238B-F               | 2.38       | SFP66S5K238B-F             | 2.38       |
| 7.5         | P         | SFP66T7.5K284B-F             | 2.84       | SFP66S7.5K288B-F           | 2.88       |
| 10.0        | P         | SFP66T10K284B-F              | 2.84       | SFP66S10K288B-F            | 2.88       |
| 12.5        | S         | SFS66T12.5K291B-F            | 2.91       | SFS66S12.5K288B-F          | 2.88       |
| 15.0        | S         | SFS66T15K384B-F              | 3.84       | SFS66S15K375B-F            | 3.75       |
| 17.5        | T         | SFT66T17.5K391B-F            | 3.91       | SFT66S17.5K391B-F          | 3.91       |
| 20.0        | T         | SFT66T20K391B-F              | 3.91       | SFT66S20K391B-F            | 3.91       |
| 25.0        | T         | SFT66T25K475B-F              | 4.75       | SFT66S25K491B-F            | 4.91       |
| 30.0        | T         | SFT66T30K475B-F              | 4.75       | SFT66S30K491B-F            | 4.91       |
| 35.0        | T         | SFT66T35K475B-F              | 4.75       | SFT66S35K491B-F            | 4.91       |
| 40.0        | T         | SFT66T40K475B-F              | 4.75       | SFT66S40K491B-F            | 4.91       |

\*Steel cases are not for new design. Check parametric search for product availability.

**Notice and Disclaimer:** All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.