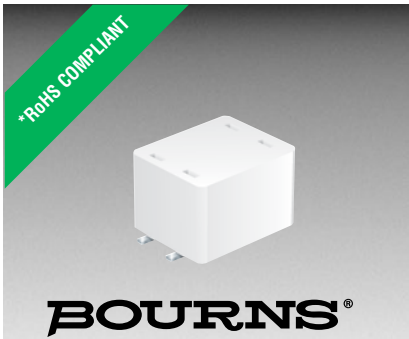




**THE DATASHEET OF
CMF-SD50A-2**





Features

- Two resistance-matched PTCs in a ceramic housing
- Narrow resistance tolerance
- RoHS compliant*



Model CMF-SD is currently available, although not recommended for new designs. Model **CMF-SDP** is recommended.

CMF-SD Series - Telecom CPTC Resettable Fuses

Electrical Characteristics

| Model | Induction Voltage Withstand | Rated Voltage | Rated Resistance (RN) @ 25°C | | Resistance Matching in Housing | Hold Current | Trip Current | I _{max} @ 230 VAC | Time to Trip @ I _{max} / 230 VAC |
|--------------|-----------------------------|---------------|------------------------------|-----------|--------------------------------|--------------|--------------|----------------------------|---|
| | VAC | Volts | Ohms | Tolerance | Ohms | Amps @ 25 °C | Amps @ 25 °C | Amps | Seconds |
| CMF-SD10 | 600 | 220 | 10 | ±20 % | ±1.0 | 0.150 | 0.360 | 1 | <4.5 |
| CMF-SD25 | 600 | 230 | 25 | ±20 % | ±0.5 | 0.130 | 0.260 | 2.8 | < 0.3 |
| CMF-SD25-10 | 600 | 220 | 25 | ±10 % | ±0.5 | 0.130 | 0.260 | 2.5 | < 0.3 |
| CMF-SD35 | 600 | 230 | 35 | ±20 % | ±0.5 | 0.100 | 0.200 | 3 | < 0.2 |
| CMF-SD35-10 | 600 | 230 | 35 | ±10 % | ±0.5 | 0.100 | 0.200 | 3 | < 0.2 |
| CMF-SD35A | 600 | 230 | 35 | ±20 % | ±0.5 | 0.100 | 0.200 | 2.5 | < 0.2 |
| CMF-SD35A-10 | 600 | 230 | 35 | ±10 % | ±0.5 | 0.100 | 0.200 | 2.5 | < 0.2 |
| CMF-SD50 | 600 | 230 | 50 | ±20 % | ±0.5 | 0.090 | 0.190 | 3 | < 0.1 |
| CMF-SD50-10 | 600 | 230 | 50 | ±10 % | ±0.5 | 0.090 | 0.190 | 3 | < 0.1 |
| CMF-SD50A | 600 | 230 | 50 | ±20 % | ±0.5 | 0.090 | 0.190 | 3 | < 0.1 |
| CMF-SD50A-10 | 600 | 230 | 50 | ±10 % | ± 0.5 | 0.090 | 0.190 | 3 | < 0.1 |

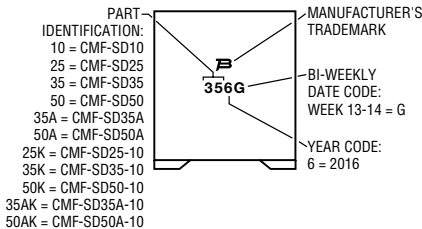
Test Procedures And Requirements For Model CMF-SD Series

| Test | Primary Protection | Test Condition | Requirements |
|--|--------------------|--|----------------------|
| Mains Power Contact - ITU-T K.20, K.21 | None | 230 V rms, 10 ohms, 15 Min. | (Ri-Rf) / Ri < ±10 % |
| Power Induction - ITU-T K.20, K.21 | None | 600V rms, 600 ohms, 0.2 seconds, 10 cycles, every 1 Min. | (Ri-Rf) / Ri < ±10 % |
| Power Induction - ITU-T K.20, K.21 | GDT | 600 V rms, 600 ohms, 1 second, 10 cycles, every 1 Min. | (Ri-Rf) / Ri < ±10 % |
| Power Induction - ITU-T K.20, K.21 | GDT | 600 V rms, 200 ohms, 1 second, 10 cycles, every 1 Min. | (Ri-Rf) / Ri < ±10 % |
| Lightning Surge - ITU-T K.20, K.21 | | 10/700 μs, 25 ohms, 1.0 kV, 10 Tests, every 1 Min. | (Ri-Rf) / Ri < ±10 % |
| Lightning Surge | | 10/1000 μs, 40 ohms, 1.0 kV, 30 Tests, every 3 Min. | (Ri-Rf) / Ri < ±10 % |

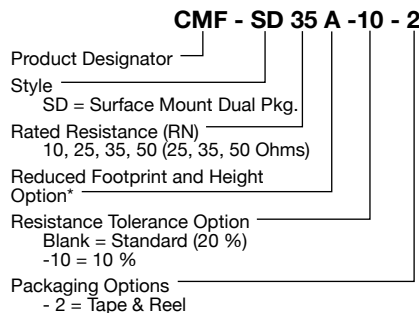
Ri = R initial
Rf = R final

Typical Part Marking

Represents total content. Layout may vary.



How to Order



*Reduced footprint and height option currently unavailable for Model CMF-SD25.

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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Applications

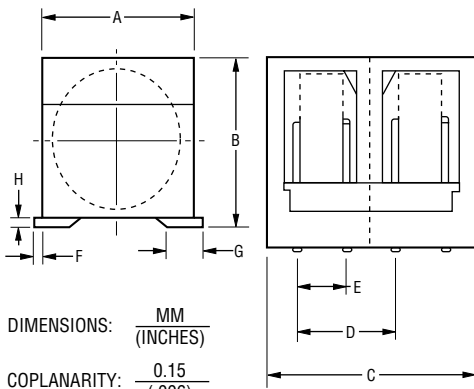
Used as a secondary overcurrent protection device in:

- Customer Premise Equipment (CPE)
- Central Office (CO)
- Access equipment

CMF-SD Series - Telecom CPTC Resettable Fuses

BOURNS®

Product Dimensions



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

COPLANARITY: $\frac{0.15}{(.006)}$

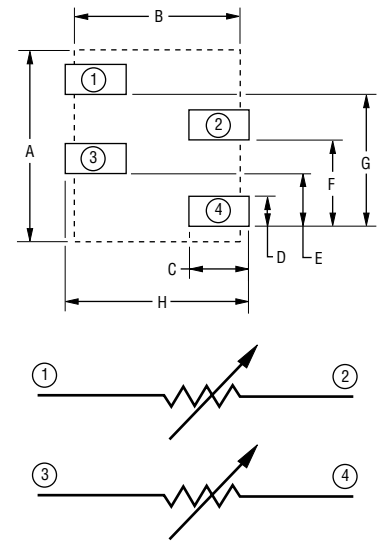
(Reduced value available on request.)

Packaging Options - Tape and Reel:

CMF-SD10, CMF-SD25, CMF-SD35 & CMF-SD50 = 400 pcs. per reel;
CMF-SD35A & CMF-SD50A = 500 pcs. per reel

| Dim. | CMF-SD10 CMF-SD25 CMF-SD35 CMF-SD50 | CMF-SD35A CMF-SD50A |
|------|--|-------------------------------------|
| A | $\frac{9.00}{(.354)}$ MAX. | $\frac{7.15}{(.281)}$ MAX. |
| B | $\frac{10.80}{(.425)}$ MAX. | $\frac{8.50}{(.355)}$ MAX. |
| C | $\frac{10.20}{(.402)}$ MAX. | $\frac{8.10}{(.319)}$ MAX. |
| D | $\frac{4.88 - 5.28}{(.192 - .208)}$ | $\frac{3.25 - 3.65}{(.128 - .144)}$ |
| E | $\frac{2.41 - 2.61}{(.095 - .103)}$ | $\frac{2.41 - 2.61}{(.095 - .103)}$ |
| F | $\frac{0.5}{(.020)}$ MAX. | $\frac{0.5}{(.020)}$ MAX. |
| G | $\frac{2.5}{(.098)}$ | $\frac{2.5}{(.098)}$ |
| H | $\frac{1.0}{(.039)}$ | $\frac{1.0}{(.039)}$ |

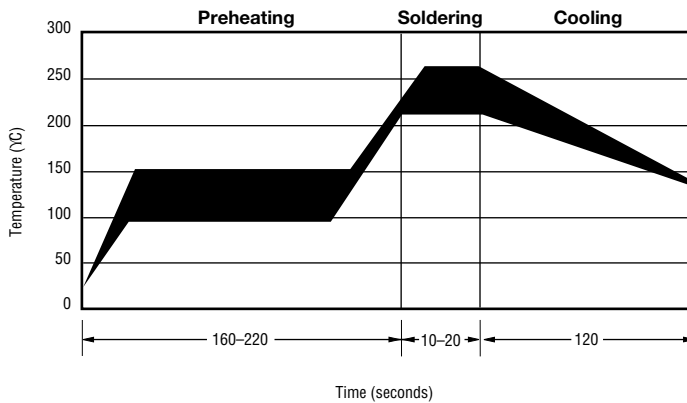
Recommended Pad Layout



| Dim. | CMF-SD10 CMF-SD25 CMF-SD35 CMF-SD50 | CMF-SD35A CMF-SD50A |
|------|--|------------------------|
| A | $\frac{10.0}{(.394)}$ | $\frac{8.00}{(.315)}$ |
| B | $\frac{8.80}{(.346)}$ | $\frac{7.05}{(.278)}$ |
| C | $\frac{3.20}{(.126)}$ | $\frac{2.75}{(.108)}$ |
| D | $\frac{2.00}{(.079)}$ | $\frac{2.00}{(.079)}$ |
| E | $\frac{2.60}{(.102)}$ | $\frac{2.51}{(.099)}$ |
| F | $\frac{5.00}{(.197)}$ | $\frac{3.45}{(.136)}$ |
| G | $\frac{7.60}{(.299)}$ | $\frac{5.95}{(.234)}$ |
| H | $\frac{10.0}{(.394)}$ | $\frac{8.15}{(.321)}$ |

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Solder Reflow Recommendations



Solder reflow

- Recommended reflow methods: IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Gluing the devices is not recommended.
- Recommended maximum paste thickness is 0.25 mm (.010 inch).
- Devices can be cleaned using standard industry methods and solvents.

Note:

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Rework

- A device should not be reworked.

CMF-SD SERIES, REV. P, 03/17

Specifications are subject to change without notice.

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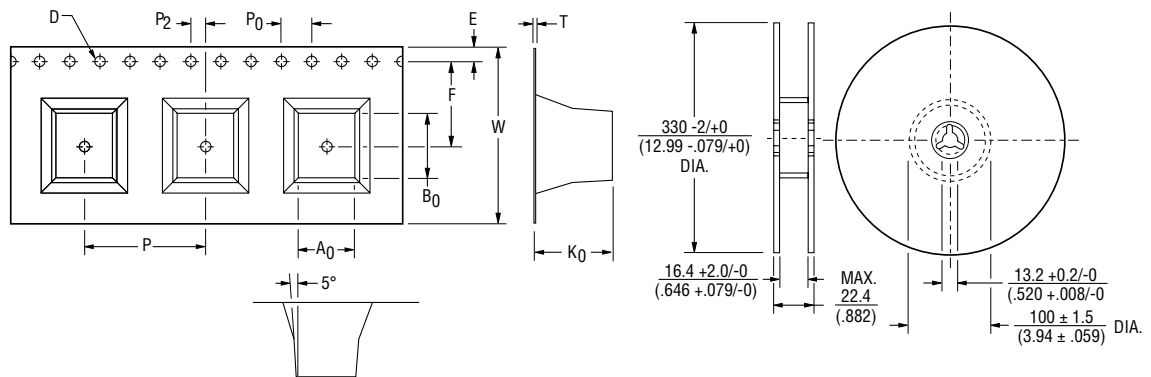
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CMF-SD Series Tape and Reel Specifications

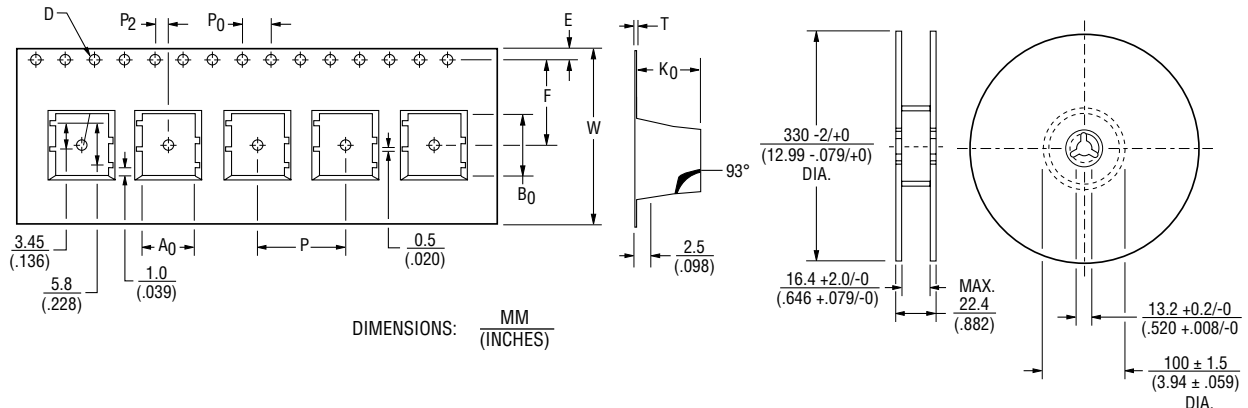
BOURNS®

| Tape Dimensions per EIA 481-2 | CMF-SD10 | CMF-SD35A-2 |
|-------------------------------|--|--|
| | CMF-SD25-2 CMF-SD35-2 CMF-SD50-2 | CMF-SD50A-2 |
| W | $\frac{24.0 +0.30/-0.10}{(0.945 +0.012/-0.004)}$ | $\frac{24.0 \pm 0.20}{(0.945 \pm 0.008)}$ |
| P ₀ | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| P | $\frac{16.0 \pm 0.10}{(0.630 \pm 0.004)}$ | $\frac{12.0 \pm 0.10}{(0.472 \pm 0.004)}$ |
| P ₂ | $\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$ | $\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$ |
| A ₀ | $\frac{10.2 \pm 0.10}{(0.402 \pm 0.004)}$ | $\frac{7.30 \pm 0.10}{(0.287 \pm 0.004)}$ |
| B ₀ | $\frac{9.0 \pm 0.10}{(0.354 \pm 0.004)}$ | $\frac{8.30 \pm 0.10}{(0.327 \pm 0.004)}$ |
| D | $\frac{1.5 + 0.10/-0.0}{(0.059 + 0.004/-0)}$ | $\frac{1.5 \pm 0.10}{(0.059 \pm 0.004)}$ |
| F | $\frac{11.5 \pm 0.10}{(0.453 \pm 0.004)}$ | $\frac{11.5 \pm 0.10}{(0.453 \pm 0.004)}$ |
| E | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$ | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$ |
| T max. | $\frac{0.50}{(0.020)}$ | $\frac{0.50 \pm 0.005}{(0.020 \pm 0.002)}$ |
| T ₁ max. | $\frac{0.1}{(0.004)}$ | $\frac{0.1}{(0.004)}$ |
| K ₀ | $\frac{11.0 \pm 0.10}{(0.433 \pm 0.004)}$ | $\frac{8.80 \pm 0.10}{(0.346 \pm 0.004)}$ |

CMF-SD25-2
CMF-SD35-2
CMF-SD50-2



CMF-SD35A-2
CMF-SD50A-2



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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