



Features

- Surface Mount Device
- Reduced footprint size
- High voltage surge capabilities
- Assists in meeting ITU K.20/K.21/K.45 specifications
- RoHS compliant*
- Agency recognition:

Applications

- Provides overcurrent protection in:
- Customer Premise Equipment (CPE)
 - Central Office (CO)
 - Access/Outside Plant Equipment

MF-SM013/250V - Telecom PTC Resettable Fuses

Electrical Characteristics

| Model | Max. Operating Voltage Volts | Max. Interrupt Ratings | | Hold Current Amps at 23 °C | Initial Resistance | | One Hour Post-Trip Resistance Ohms at 23 °C | Tripped Power Dissipation Watts at 23 °C |
|---------------|---------------------------------|------------------------|----------|-------------------------------|--------------------|---------------|--|---|
| | | Volts (V) | Amps (A) | | Ohms at 23 °C | Ohms at 23 °C | | |
| | | Max. | Max. | | I _H | Min. | | |
| MF-SM013/250V | 60 | 250 | 3.0 | 0.13 | 6.5 | 12.0 | 20.0 | 3.0 |

Environmental Characteristics

| | |
|---|---|
| Operating Temperature | -40 °C to +85 °C |
| Maximum Device Surface Temperature in Tripped State..... | 125 °C |
| Passive Aging | +85 °C, 1000 hours.....±5 % typical resistance change |
| | +60 °C, 1000 hours.....±5 % typical resistance change |
| Humidity Aging | +85 °C, 85 % R.H. 500 hours.....±5 % typical resistance change |
| Thermal Shock | MIL-STD-202F, Method 107G,.....±10 % typical resistance change |
| | +125 °C to -55 °C, 10 times.....±15 % typical resistance change |
| Solvent Resistance | MIL-STD-202, Method 215B.....No change |
| Lead Solderability | ANSI/J-STD-002 |
| Flammability | IEC 695-2-2.....No Flame for 60 secs. |
| Vibration | MIL-STD-883C, Method 2007.1, Condition A.....No change |

Test Procedures And Requirements For Model SM013/250V Series

| Test | Test Conditions | Accept/Reject Criteria |
|-----------------------|--|---|
| Visual/Mech. | Verify dimensions and materials..... | Per MF physical description |
| Resistance | In still air @ 23 °C | R _{min} ≤ R ≤ R _{max} |
| Time to Trip | At specified current, V _{max} , 23 °C | T ≤ max. time to trip (seconds) |
| Hold Current | 30 min. at I _{hold} | No trip |
| Trip Cycle Life | V _{max} , I _{max} , 100 cycles | No arcing or burning |
| Trip Endurance | V _{max} , 48 hours..... | No arcing or burning |
| Solderability | MIL-STD-202F, Method 208F | 95 % min. coverage |

| | |
|-----------------------|-----------|
| UL File Number | E 174545S |
| CSA File Number | CA 110338 |
| TÜV File Number | R2057213 |

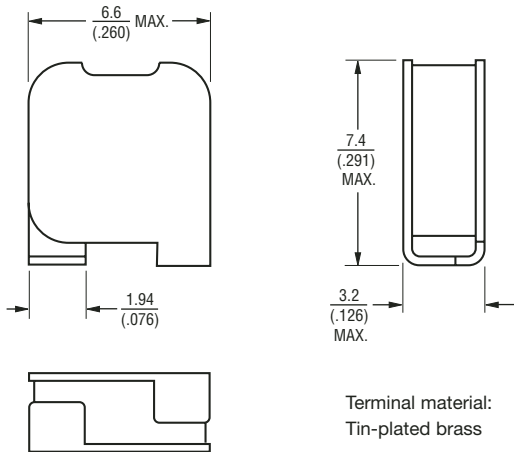
Thermal Derating Chart -I_{hold} / I_{trip} (Amps)

| Model | Ambient Operating Temperature | | | | | | | | |
|---------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | -40 °C | -20 °C | 0 °C | 23 °C | 40 °C | 50 °C | 60 °C | 70 °C | 85 °C |
| MF-SM013/250V | 0.21 / 0.42 | 0.18 / 0.37 | 0.16 / 0.31 | 0.13 / 0.26 | 0.10 / 0.23 | 0.09 / 0.18 | 0.08 / 0.15 | 0.07 / 0.12 | 0.05 / 0.10 |

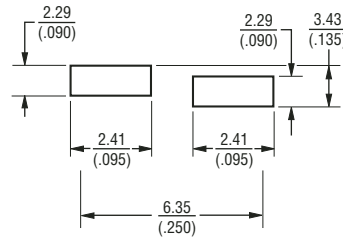
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
 Specifications are subject to change without notice.
 Customers should verify actual device performance in their specific applications.

MF-SM013/250V Series - Telecom PTC Resettable Fuses **BOURNS®**

Product Dimensions



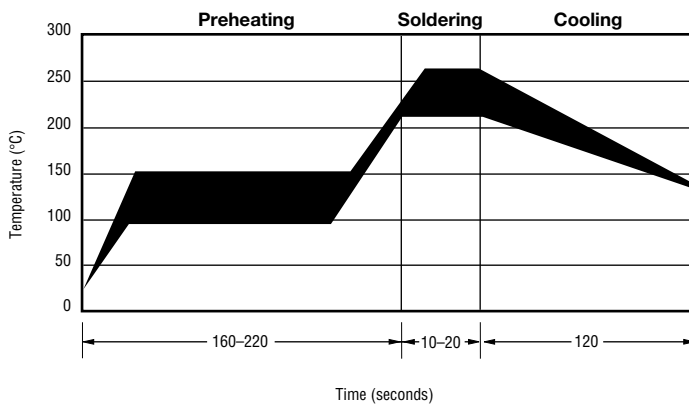
Recommended Pad Layout



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

Packaging:
TAPE & REEL: 1000 pcs. per reel

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

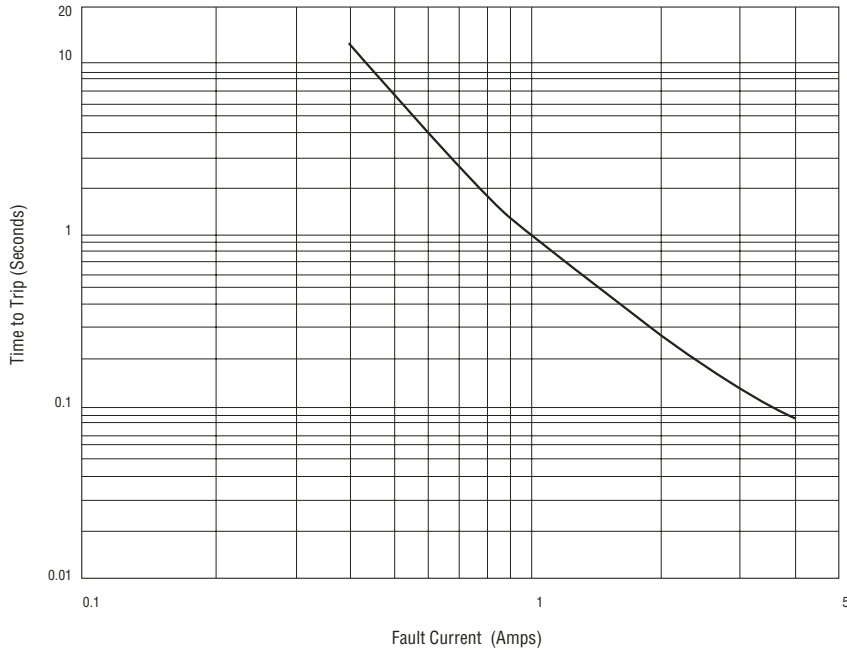
- A device should not be reworked.

Storage Recommendations

The recommended long term storage conditions for Multifuse® Polymer PTC devices are 40 °C maximum and 70 % RH maximum. All devices should remain in the original sealed packaging prior to use. Devices may not conform with data sheet specifications if these storage recommendations are exceeded. Devices stored in this manner have an indefinite shelf life.

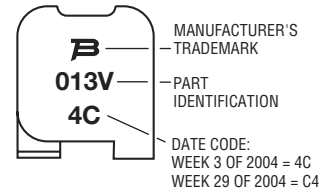
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Typical Time to Trip at 23 °C



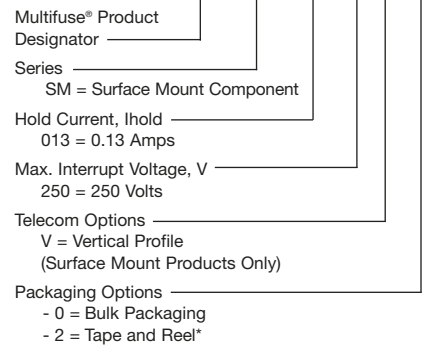
Typical Part Marking

Represents total content. Layout may vary.



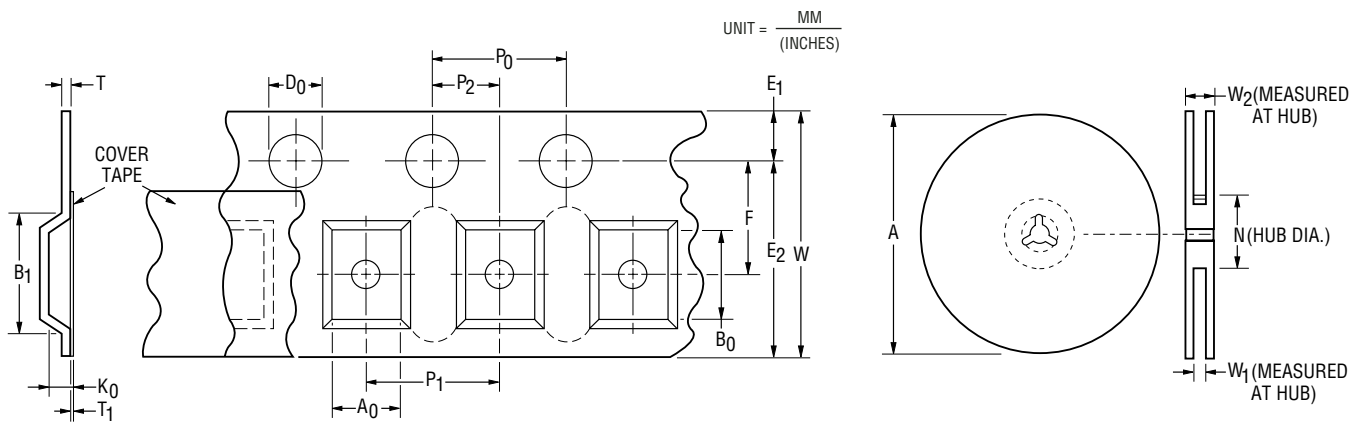
How to Order

MF - SM 013/250V - 2



*Packaged per EIA486-B

| Tape Dimensions | MF-SM013/250V per EIA 481-1 |
|---------------------|--|
| W | $\frac{16.0 \pm 0.3}{(0.630 \pm 0.012)}$ |
| P ₀ | $\frac{4.0 \pm 0.1}{(0.157 \pm 0.004)}$ |
| P ₁ | $\frac{8.0 \pm 0.1}{(0.315 \pm 0.004)}$ |
| P ₂ | $\frac{2.0 \pm 0.1}{(0.079 \pm 0.004)}$ |
| A ₀ | $\frac{3.3 \pm 0.1}{(0.130 \pm 0.004)}$ |
| B ₀ | $\frac{6.66 \pm 0.1}{(0.262 \pm 0.004)}$ |
| B ₁ max. | $\frac{7.2}{(0.283)}$ |
| D ₀ | $\frac{1.5 \pm 0.1}{(0.059 \pm 0.004)}$ |
| F | $\frac{7.5 \pm 0.1}{(0.295 \pm 0.004)}$ |
| E ₁ | $\frac{1.75 \pm 0.1}{(0.069 \pm 0.004)}$ |
| E ₂ min. | $\frac{14.25}{(0.561)}$ |
| T max. | $\frac{0.45}{(0.018)}$ |
| T ₁ max. | $\frac{0.1}{(0.004)}$ |
| K ₀ | $\frac{7.0}{(0.276)}$ |
| Leader min. | $\frac{390}{(15.35)}$ |
| Trailer min. | $\frac{160}{(6.30)}$ |
| Reel Dimensions | |
| A max. | $\frac{340}{(13.39)}$ |
| N min. | $\frac{50}{(1.97)}$ |
| W ₁ | $\frac{16.4}{(0.646)}$ |
| W ₂ max. | $\frac{22.4}{(0.882)}$ |



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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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