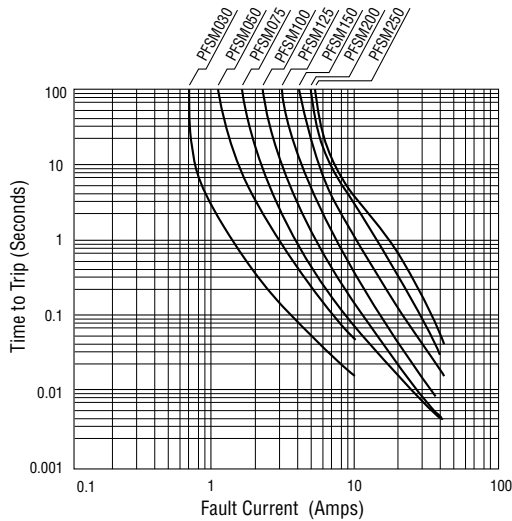


# PFSM Polymeric PTC Resettable Fuse – Surface Mount



Typical Time to Trip at 23°C



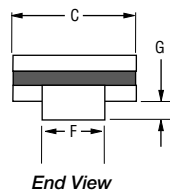
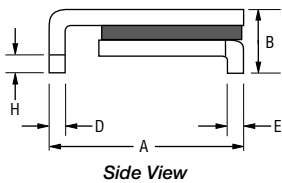
**NEW**



- Fully compatible with current industry standards
- Packaged per EIA 481-2 standard
- Applications: Almost anywhere there is a low voltage power supply and a load to be protected, including: computers & peripherals, general electronics, automotive applications

## Approvals:

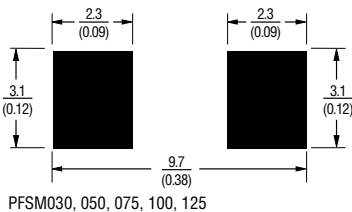
|     |               |                |
|-----|---------------|----------------|
| UL  | recognition   | File #E172175  |
| CSA | acceptance    | File #CA702083 |
| TÜV | certification | File #R9872200 |



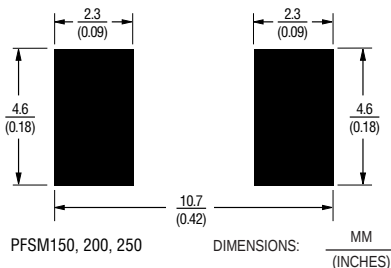
Typical Part Marking  
Represents total content. Layout may vary.



## Recommended Pad Layout



## Recommended Pad Layout



## Technical Data

|                                                     |                                                        |                                |
|-----------------------------------------------------|--------------------------------------------------------|--------------------------------|
| Operating/Storage 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  |
| Humidity Aging                                      | +85°C, 85% R.H. 1000 hours                             | ±5% typical resistance change  |
| Thermal Shock                                       | +125°C/-40°C 10 times                                  | ±10% typical resistance change |
| Mechanical Shock                                    | MIL-STD-202, Method 213, Condition 1 (100g, 6 seconds) | No resistance change           |
| Solvent Resistance                                  | MIL-STD-202, Method 215                                | No change                      |
| Vibration                                           | MIL-STD-883C, Method 2007.1, Condition A               | No change                      |

## Test Procedures And Requirements

| Test            | Test Conditions                        | Accept/Reject Criteria                      |
|-----------------|----------------------------------------|---------------------------------------------|
| Visual/Mech.    | Verify dimensions and materials        | Per PF physical description                 |
| Resistance      | In still air @ 23°C                    | $R_{min} \leq R \leq R_{max}$               |
| Time to Trip    | At specified current, $V_{max}$ , 23°C | $T \leq \text{max. time to trip (seconds)}$ |
| 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                        |

# PFSM Technial Data, continued



## Electrical Characteristics

| Model     | I max.<br>Amps | V max.<br>Volts | I <sub>hold</sub>  | I <sub>trip</sub> | Initial<br>Resistance |      | 1 Hour (R1)<br>Post-Reflow<br>Resistance | Max. Time<br>To Trip at 23°C |         | Tripped<br>Power<br>Dissipation |
|-----------|----------------|-----------------|--------------------|-------------------|-----------------------|------|------------------------------------------|------------------------------|---------|---------------------------------|
|           |                |                 | Amperes<br>at 23°C |                   | Ohms<br>at 23°C       |      | Ohms<br>at 23°C                          | Amps                         | Seconds | Watts<br>at 23°C                |
|           |                |                 | Hold               | Trip              | Min.                  | Max. | Max.                                     |                              | Max.    | Nom.                            |
| PFSM030.2 | 10             | 60              | 0.30               | 0.60              | 0.90                  | -    | 4.80                                     | 1.5                          | 3.0     | 1.7                             |
| PFSM050.2 | 10             | 30              | 0.50               | 1.00              | 0.35                  | -    | 1.40                                     | 2.5                          | 4.0     | 1.7                             |
| PFSM075.2 | 40             | 30              | 0.75               | 1.50              | 0.27                  | -    | 1.00                                     | 8.0                          | 0.30    | 1.7                             |
| PFSM100.2 | 40             | 15              | 1.10               | 2.20              | 0.12                  | -    | 0.48                                     | 8.0                          | 0.50    | 1.7                             |
| PFSM125.2 | 40             | 15              | 1.25               | 2.50              | 0.07                  | -    | 0.25                                     | 8.0                          | 2.0     | 1.7                             |
| PFSM150.2 | 40             | 15              | 1.50               | 3.00              | 0.06                  | -    | 0.25                                     | 8.0                          | 5.0     | 1.9                             |
| PFSM200.2 | 40             | 15              | 2.00               | 4.00              | 0.05                  | -    | 0.125                                    | 8.0                          | 12.0    | 1.9                             |
| PFSM250.2 | 40             | 15              | 2.50               | 5.00              | 0.035                 | -    | 0.085                                    | 8.0                          | 25.0    | 1.9                             |

## Packaging options:

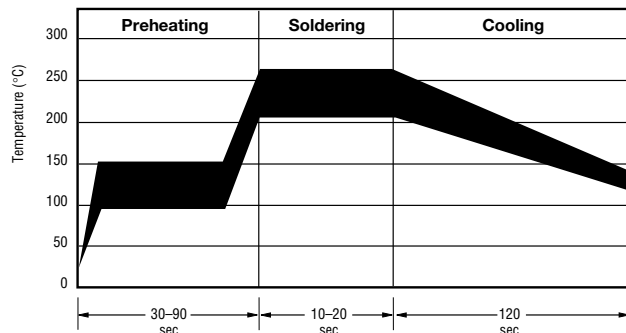
TAPE & REEL: PFSM.030 to PFSM.125 = 2000 pcs. per reel; PFSM.150 to PFSM.250 = 1500 pcs. per reel.

## Product Dimensions

| Model     | A    |      | B    |      | C    |      | D    |      | E    |      | F    |      | G    |      | H    |      |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|           | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| PFSM030.2 | 6.73 | 7.98 |      | 3.18 |      | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 |      |
| PFSM050.2 | 6.73 | 7.98 |      | 3.18 |      | 5.44 | 0.56 | 0.71 | 0.20 | 0.30 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 |      |
| PFSM075.2 | 6.73 | 7.98 |      | 3.18 |      | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 |      |
| PFSM100.2 | 6.73 | 7.98 |      | 3.00 |      | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 |      |
| PFSM125.2 | 6.73 | 7.98 |      | 3.00 |      | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 |      |
| PFSM150.2 | 8.00 | 9.50 |      | 3.00 |      | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 |      |
| PFSM200.2 | 8.00 | 9.50 |      | 3.00 |      | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 |      |
| PFSM250.2 | 8.00 | 9.50 |      | 3.00 |      | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 |      |

DIMENSIONS = MM

## Solder Reflow And Rework 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.

## Thermal Derating Chart - I<sub>hold</sub> (Amps)\*

| Model     | Ambient Operating Temperature |       |      |      |      |      |      |      |      |
|-----------|-------------------------------|-------|------|------|------|------|------|------|------|
|           | -40°C                         | -20°C | 0°C  | 23°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| PFSM030.2 | 0.45                          | 0.40  | 0.35 | 0.30 | 0.25 | 0.23 | 0.20 | 0.17 | 0.14 |
| PFSM050.2 | 0.76                          | 0.67  | 0.59 | 0.50 | 0.42 | 0.38 | 0.33 | 0.29 | 0.23 |
| PFSM075.2 | 1.13                          | 1.01  | 0.88 | 0.75 | 0.62 | 0.56 | 0.50 | 0.44 | 0.34 |
| PFSM100.2 | 1.66                          | 1.47  | 1.29 | 1.10 | 0.91 | 0.83 | 0.73 | 0.64 | 0.50 |
| PFSM125.2 | 1.89                          | 1.68  | 1.46 | 1.25 | 1.04 | 0.94 | 0.83 | 0.73 | 0.56 |
| PFSM150.2 | 2.27                          | 2.01  | 1.76 | 1.50 | 1.25 | 1.13 | 0.99 | 0.87 | 0.68 |
| PFSM200.2 | 3.02                          | 2.68  | 2.34 | 2.00 | 1.66 | 1.50 | 1.32 | 1.16 | 0.90 |
| PFSM250.2 | 3.78                          | 3.35  | 2.93 | 2.50 | 2.08 | 1.88 | 1.65 | 1.45 | 1.13 |

\*I<sub>trip</sub> = 2 • I<sub>hold</sub>

## How To Order

Product Designator **PF SM . 030 . 2**

Style \_\_\_\_\_

SM = Surface Mount Component

Hold Current, I<sub>hold</sub> \_\_\_\_\_  
030-250 (0.30 Amps - 2.50 Amps)

Packaging Options \_\_\_\_\_  
Packaged per EIA 481-2  
.2 = Tape and Reel

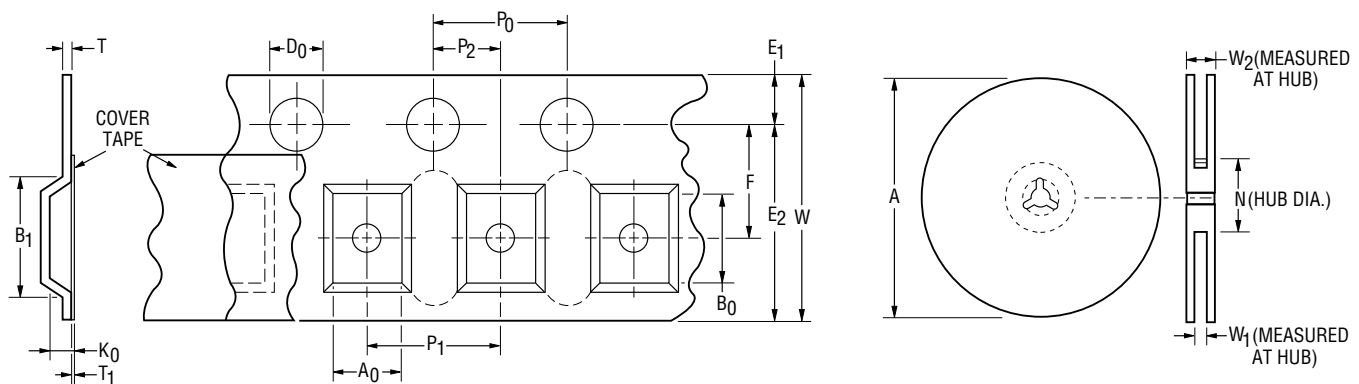
Schurter's resettable fuses cross to many like products already on the market. See our online cross list at [www.schurterinc.com/cross.htm](http://www.schurterinc.com/cross.htm)

# PFSM Tape and Reel Specifications



| Tape Dimension Identifiers        | PFSM 030, 050, 075, 100, 125<br>per EIA-481-2 | PFSM 150, 200, 250<br>per EIA 481-2 |
|-----------------------------------|-----------------------------------------------|-------------------------------------|
| W                                 | 16 ± 0.3                                      | 16 ± 0.3                            |
| P <sub>0</sub>                    | 4.0 ± 0.10                                    | 4.0 ± 0.10                          |
| P <sub>1</sub>                    | 8.0 ± 0.10                                    | 12.0 ± 0.10                         |
| P <sub>2</sub>                    | 2.0 ± 0.10                                    | 2.0 ± 0.10                          |
| A <sub>0</sub>                    | 5.7 ± 0.10                                    | 6.9 ± 0.10                          |
| B <sub>0</sub>                    | 8.1 ± 0.15                                    | 10.0 ± 0.10                         |
| B <sub>1</sub> max.               | 9.1                                           | 11.0                                |
| D <sub>0</sub>                    | 1.5 + 0.1/ - 0                                | 1.5 + 0.1/ - 0                      |
| F                                 | 7.5 ± 0.10                                    | 7.5 ± 0.10                          |
| E <sub>1</sub>                    | 1.75 ± 0.10                                   | 1.75 ± 0.10                         |
| E <sub>2</sub> min.               | 14.25                                         | 14.25                               |
| T max.                            | 0.4                                           | 0.4                                 |
| T <sub>1</sub> max.               | 0.1                                           | 0.1                                 |
| K <sub>0</sub>                    | 3.4 ± 0.15                                    | 3.5 ± 0.10                          |
| Leader min.                       | 390                                           | 390                                 |
| Trailer min.                      | 160                                           | 160                                 |
| <b>Reel Dimension Identifiers</b> |                                               |                                     |
| A max.                            | 360                                           | 360                                 |
| N min.                            | 50                                            | 50                                  |
| W <sub>1</sub>                    | 16.4 + 2.0/ - 0                               | 16.4 + 2.0/ - 0                     |
| W <sub>2</sub> max.               | 22.4                                          | 22.4                                |

DIMENSIONS:



Specifications are subject to change without notice.