**EN:** This Datasheet/Document is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.




BOURNS®

## Features

- Radial Leaded Devices
- Cured, flame retardant epoxy polymer insulating material meets UL 94V-0 requirements
- RoHS compliant*
- Agency recognition:

## Applications

Almost anywhere there is a low voltage power supply and a load to be protected, including:

- Computers & peripherals
- General electronics
- Automotive applications

# MF-R Series - PTC Resettable Fuses

### Electrical Characteristics

| Model | V max. Volts | I max. Amps | Ihold | Itrip | Initial Resistance | | 1 Hour ($R_1$) Post-Trip Resistance | Max. Time to Trip | | Tripped Power Dissipation |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Amperes at 23 °C | | Ohms at 23 °C | | Ohms at 23 °C | Amperes at 23 °C | Seconds at 23 °C | Watts at 23 °C |
| | | | Hold | Trip | Min. | Max. | Max. | | | Typ. |
| MF-R005** | 60 | 40 | 0.05 | 0.10 | 7.3 | 11.1 | 22.0 | 0.5 | 5.0 | 0.22 |
| MF-R010 | 60 | 40 | 0.10 | 0.20 | 2.50 | 4.50 | 7.50 | 0.5 | 4.0 | 0.38 |
| MF-R017 | 60 | 40 | 0.17 | 0.34 | 2.00 | 3.20 | 8.00 | 0.85 | 3.0 | 0.48 |
| MF-R020 | 60 | 40 | 0.20 | 0.40 | 1.50 | 2.84 | 4.40 | 1.0 | 2.2 | 0.40 |
| MF-R025 | 60 | 40 | 0.25 | 0.50 | 1.00 | 1.95 | 3.00 | 1.25 | 2.5 | 0.45 |
| MF-R030 | 60 | 40 | 0.30 | 0.60 | 0.76 | 1.36 | 2.10 | 1.5 | 3.0 | 0.50 |
| MF-R040 | 60 | 40 | 0.40 | 0.80 | 0.52 | 0.86 | 1.29 | 2.0 | 3.8 | 0.55 |
| MF-R050 | 60 | 40 | 0.50 | 1.00 | 0.41 | 0.77 | 1.17 | 2.5 | 4.0 | 0.75 |
| MF-R065 | 60 | 40 | 0.65 | 1.30 | 0.27 | 0.48 | 0.72 | 3.25 | 5.3 | 0.90 |
| MF-R075 | 60 | 40 | 0.75 | 1.50 | 0.18 | 0.40 | 0.60 | 3.75 | 6.3 | 0.90 |
| MF-R090 | 60 | 40 | 0.90 | 1.80 | 0.14 | 0.31 | 0.47 | 4.5 | 7.2 | 1.00 |
| MF-R090-0-9 | 30 | 40 | 0.90 | 1.80 | 0.07 | 0.12 | 0.22 | 4.5 | 5.9 | 0.60 |
| MF-R110 | 30 | 40 | 1.10 | 2.20 | 0.10 | 0.18 | 0.27 | 5.5 | 6.6 | 0.70 |
| MF-R135 | 30 | 40 | 1.35 | 2.70 | 0.065 | 0.115 | 0.17 | 6.75 | 7.3 | 0.80 |
| MF-R160 | 30 | 40 | 1.60 | 3.20 | 0.055 | 0.105 | 0.15 | 8.0 | 8.0 | 0.90 |
| MF-R185 | 30 | 40 | 1.85 | 3.70 | 0.040 | 0.07 | 0.11 | 9.25 | 8.7 | 1.00 |
| MF-R250 | 30 | 40 | 2.50 | 5.00 | 0.025 | 0.048 | 0.07 | 12.5 | 10.3 | 1.20 |
| MF-R250-0-10 | 30 | 40 | 2.50 | 5.00 | 0.025 | 0.048 | 0.07 | 12.5 | 10.3 | 1.20 |
| MF-R300 | 30 | 40 | 3.00 | 6.00 | 0.020 | 0.05 | 0.08 | 15.0 | 10.8 | 2.00 |
| MF-R400 | 30 | 40 | 4.00 | 8.00 | 0.010 | 0.03 | 0.05 | 20.0 | 12.7 | 2.50 |
| MF-R500 | 30 | 40 | 5.00 | 10.00 | 0.010 | 0.03 | 0.05 | 25.0 | 14.5 | 3.00 |
| MF-R600 | 30 | 40 | 6.00 | 12.00 | 0.005 | 0.02 | 0.04 | 30.0 | 16.0 | 3.50 |
| MF-R700 | 30 | 40 | 7.00 | 14.00 | 0.005 | 0.02 | 0.03 | 35.0 | 17.5 | 3.80 |
| MF-R800 | 30 | 40 | 8.00 | 16.00 | 0.005 | 0.02 | 0.03 | 40.0 | 18.8 | 4.00 |
| MF-R900 | 30 | 40 | 9.00 | 18.00 | 0.005 | 0.01 | 0.02 | 45.0 | ***20.0 | 4.20 |
| MF-R1100 | 16 | 100 | 11.00 | 22.00 | 0.003 | 0.01 | 0.014 | 40.0 | 20.0 | 4.50 |

**CSA approval pending.

***Tested at 40 amps

### Environmental Characteristics

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 ..... -40 °C to +85 °C, 10 times ..... ±10 % typical 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 For Model MF-R Series

| Test | Test Conditions | Accept/Reject Criteria |
|---|---|---|
| Visual/Mech. | Verify dimensions and materials | Per MF physical description |
| Resistance | In still air @ 23 °C | Rmin ≤ R ≤ Rmax |
| Time to Trip | 5 times Ihold, Vmax, 23 °C | T ≤ max. time to trip (seconds) |
| Hold Current | 30 min. at Ihold | No trip |
| Trip Cycle Life | Vmax, Imax, 100 cycles | No arcing or burning |
| Trip Endurance | Vmax, 48 hours | No arcing or burning |

UL File Number ..... E 174545
CSA File Number ..... CA 110338
TÜV File Number ..... R2057213

*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.

## Additional Features

■ Bulk packaging, tape and reel and Ammo-Pak available on most models

# MF-R Series - PTC Resettable Fuses

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**Product Dimensions (see next page for outline drawing)**

| Model | A | B | C | | D | E | Physical Characteristics | | |
|---|---|---|---|---|---|---|---|---|---|
| | Max. | Max. | Nom. | Tol. ± | Min. | Max. | Style | Lead Dia. | Material |
| MF-R005 | 8.0 (0.315) | 8.3 (0.327) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 4 | 0.405 (0.016) | Sn/NiCu |
| MF-R010 | 7.4 (0.291) | 12.7 (0.5) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/NiCu |
| MF-R017 | 7.4 (0.291) | 12.7 (0.5) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/CuFe |
| MF-R020 | 7.4 (0.291) | 12.7 (0.5) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/CuFe |
| MF-R025 | 7.4 (0.291) | 12.7 (0.5) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/CuFe |
| MF-R030 | 7.4 (0.291) | 13.4 (0.528) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/CuFe |
| MF-R040 | 7.4 (0.291) | 13.7 (0.539) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/CuFe |
| MF-R050 | 7.9 (0.311) | 13.7 (0.539) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R065 | 9.7 (0.382) | 15.2 (0.598) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R075 | 10.4 (0.409) | 16.0 (0.630) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R090 | 11.7 (0.461) | 16.7 (0.657) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R090-0-9 | 7.4 (0.291) | 12.2 (0.480) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 3 | 0.51 (0.020) | Sn/CuFe |
| MF-R110 | 8.9 (0.350) | 14.0 (0.551) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R135 | 8.9 (0.350) | 18.9 (0.744) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R160 | 10.2 (0.402) | 16.8 (0.661) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R185 | 12.0 (0.472) | 18.4 (0.724) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 1 | 0.51 (0.020) | Sn/Cu |
| MF-R250 | 12.0 (0.472) | 18.3 (0.720) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R250-0-10 | 12.0 (0.472) | 18.3 (0.720) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 3 | 0.51 (0.020) | Sn/CuFe |
| MF-R300 | 12.0 (0.472) | 18.3 (0.720) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R400 | 14.4 (0.567) | 24.8 (0.976) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R500 | 17.4 (0.685) | 24.9 (0.980) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R600 | 19.3 (0.760) | 31.9 (1.256) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R700 | 22.1 (0.870) | 29.8 (1.173) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R800 | 24.2 (0.953) | 32.9 (1.295) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R900 | 24.2 (0.953) | 32.9 (1.295) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |
| MF-R1100 | 24.2 (0.953) | 32.9 (1.295) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 2 | 0.81 (0.032) | Sn/Cu |

Packaging options: BULK: All models = 500 pcs. per bag.
TAPE & REEL: MF-R005-MF-R160 - 12.7 mm device pitch = 3000 pcs. per reel;
MF-R185-MF-R400 - 25.4mm device pitch = 1500 pcs. per reel; MF-R250-0-10 = 1500 pcs. per reel.
AMMO-PACK: MF-R005-MF-R160 - 12.7 mm device pitch = 2000 pcs. per reel;
MF-R185-MF-R400 - 25.4 mm device pitch = 1000 pcs. per reel; MF-R090-0-9 & MF-R250-0-10 = 2000 pcs. per reel.

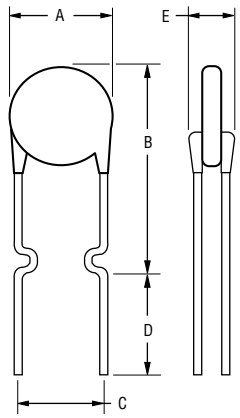
0.405 (26AWG)
0.51 (24AWG)
0.81 (20AWG)

DIMENSIONS: MM / (INCHES)

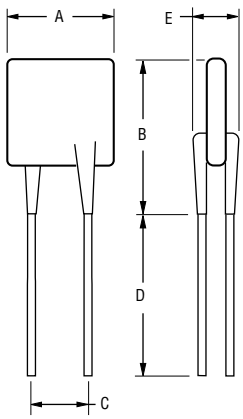
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

## Product Dimensions (see previous page for dimensions)

**Style 1**

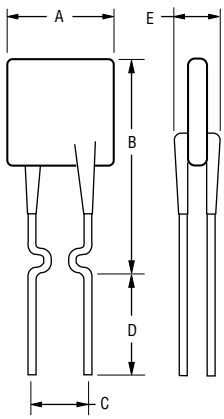



**Style 2**



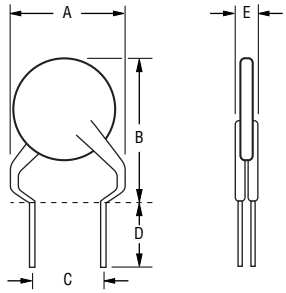

NOTE: Kinked lead option is available for board standoff. Contact factory for details.

**Style 3**




NOTE: Also available with straight leads. Contact factory for details.

**Style 4**

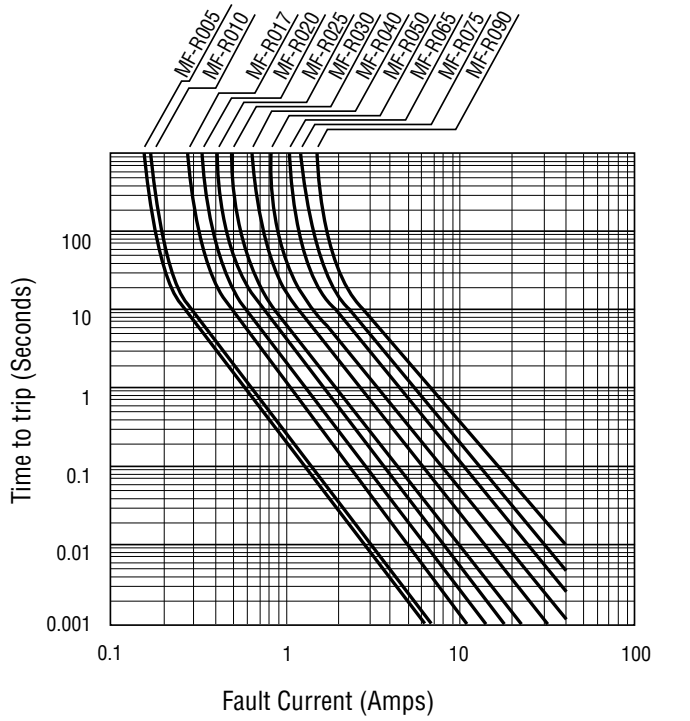


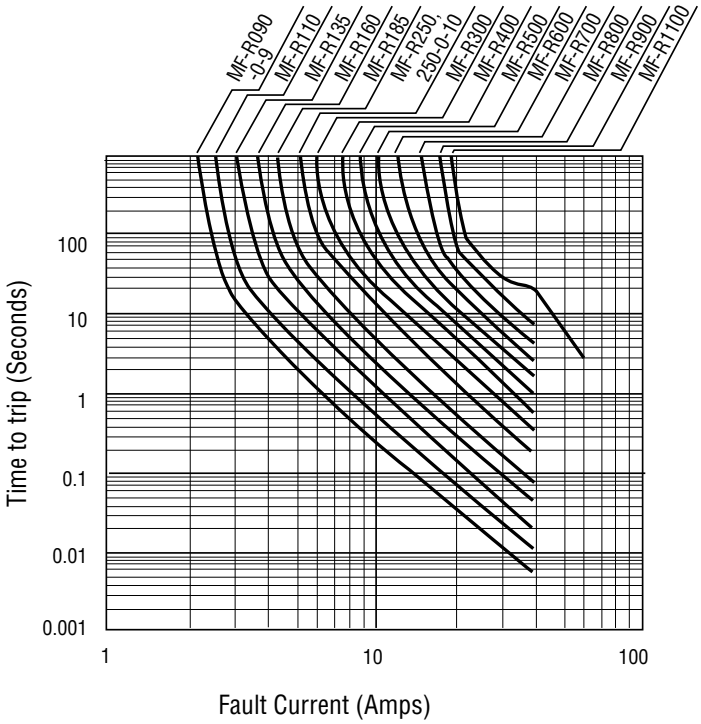

## Thermal Derating Chart - $I_{hold}$ / $I_{trip}$ (Amps)

| Model | Ambient Operating Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | -40 ºC | -20 ºC | 0 ºC | 23 ºC | 40 ºC | 50 ºC | 60 ºC | 70 ºC | 85 ºC |
| MF-R005 | 0.08 / 0.16 | 0.07 / 0.14 | 0.06 / 0.12 | 0.05 / 0.10 | 0.04 / 0.08 | 0.04 / 0.08 | 0.03 / 0.07 | 0.03 / 0.07 | 0.02 / 0.05 |
| MF-R010 | 0.16 / 0.32 | 0.14 / 0.28 | 0.12 / 0.24 | 0.10 / 0.20 | 0.08 / 0.16 | 0.07 / 0.14 | 0.06 / 0.12 | 0.05 / 0.10 | 0.04 / 0.08 |
| MF-R017 | 0.26 / 0.52 | 0.23 / 0.46 | 0.20 / 0.40 | 0.17 / 0.34 | 0.14 / 0.28 | 0.12 / 0.24 | 0.11 / 0.22 | 0.09 / 0.18 | 0.07 / 0.14 |
| MF-R020 | 0.31 / 0.62 | 0.27 / 0.54 | 0.24 / 0.48 | 0.20 / 0.40 | 0.16 / 0.32 | 0.14 / 0.28 | 0.13 / 0.26 | 0.11 / 0.22 | 0.08 / 0.16 |
| MF-R025 | 0.39 / 0.78 | 0.34 / 0.68 | 0.30 / 0.60 | 0.25 / 0.50 | 0.20 / 0.40 | 0.18 / 0.36 | 0.16 / 0.32 | 0.14 / 0.28 | 0.10 / 0.20 |
| MF-R030 | 0.47 / 0.94 | 0.41 / 0.82 | 0.36 / 0.72 | 0.30 / 0.60 | 0.24 / 0.48 | 0.22 / 0.44 | 0.19 / 0.38 | 0.16 / 0.32 | 0.12 / 0.24 |
| MF-R040 | 0.62 / 1.24 | 0.54 / 1.08 | 0.48 / 0.96 | 0.40 / 0.80 | 0.32 / 0.64 | 0.29 / 0.58 | 0.25 / 0.50 | 0.22 / 0.44 | 0.16 / 0.32 |
| MF-R050 | 0.78 / 1.56 | 0.68 / 1.36 | 0.60 / 1.20 | 0.50 / 1.00 | 0.41 / 0.82 | 0.36 / 0.72 | 0.32 / 0.64 | 0.27 / 0.54 | 0.20 / 0.40 |
| MF-R065 | 1.01 / 2.02 | 0.88 / 1.76 | 0.77 / 1.54 | 0.65 / 1.30 | 0.53 / 1.06 | 0.47 / 0.94 | 0.41 / 0.82 | 0.35 / 0.70 | 0.26 / 0.52 |
| MF-R075 | 1.16 / 2.32 | 1.02 / 2.04 | 0.89 / 1.78 | 0.75 / 1.50 | 0.61 / 1.22 | 0.54 / 1.08 | 0.47 / 0.94 | 0.41 / 0.82 | 0.30 / 0.60 |
| MF-R090 | 1.40 / 2.80 | 1.22 / 2.44 | 1.07 / 2.14 | 0.90 / 1.80 | 0.73 / 1.46 | 0.65 / 1.30 | 0.57 / 1.14 | 0.49 / 0.98 | 0.36 / 0.72 |
| MF-R090-0-9 | 1.40 / 2.80 | 1.22 / 2.44 | 1.07 / 2.14 | 0.90 / 1.80 | 0.73 / 1.46 | 0.65 / 1.30 | 0.57 / 1.14 | 0.49 / 0.98 | 0.36 / 0.72 |
| MF-R110 | 1.60 / 3.20 | 1.43 / 2.86 | 1.27 / 2.54 | 1.10 / 2.20 | 0.91 / 1.82 | 0.85 / 1.70 | 0.75 / 1.50 | 0.67 / 1.34 | 0.57 / 1.14 |
| MF-R135 | 1.96 / 3.92 | 1.76 / 3.52 | 1.55 / 3.10 | 1.35 / 2.70 | 1.12 / 2.24 | 1.04 / 2.08 | 0.92 / 1.84 | 0.82 / 1.64 | 0.70 / 1.40 |
| MF-R160 | 2.32 / 4.64 | 2.08 / 4.16 | 1.84 / 3.68 | 1.60 / 3.20 | 1.33 / 2.66 | 1.23 / 2.46 | 1.09 / 2.18 | 0.98 / 1.96 | 0.83 / 1.66 |
| MF-R185 | 2.68 / 5.36 | 2.41 / 4.82 | 2.13 / 4.26 | 1.85 / 3.70 | 1.54 / 3.08 | 1.42 / 2.84 | 1.26 / 2.52 | 1.13 / 2.26 | 0.96 / 1.92 |
| MF-R250 | 3.63 / 7.26 | 3.25 / 6.50 | 2.88 / 5.76 | 2.50 / 5.00 | 2.08 / 4.16 | 1.93 / 3.86 | 1.70 / 3.40 | 1.53 / 3.06 | 1.30 / 2.60 |
| MF-R250-0-10 | 3.63 / 7.26 | 3.25 / 6.50 | 2.88 / 5.76 | 2.50 / 5.00 | 2.08 / 4.16 | 1.93 / 3.86 | 1.70 / 3.40 | 1.53 / 3.06 | 1.30 / 2.60 |
| MF-R300 | 4.35 / 8.70 | 3.90 / 7.80 | 3.45 / 6.90 | 3.00 / 6.00 | 2.49 / 4.98 | 2.31 / 4.62 | 2.04 / 4.08 | 1.83 / 3.66 | 1.56 / 3.12 |
| MF-R400 | 5.80 / 11.6 | 5.20 / 10.4 | 4.60 / 9.20 | 4.00 / 8.00 | 3.32 / 6.64 | 3.08 / 6.16 | 2.72 / 5.44 | 2.44 / 4.88 | 2.08 / 4.16 |
| MF-R500 | 7.25 / 14.5 | 6.50 / 13.0 | 5.75 / 11.5 | 5.00 / 10.0 | 4.15 / 8.30 | 3.85 / 7.70 | 3.40 / 6.80 | 3.05 / 6.10 | 2.60 / 5.20 |
| MF-R600 | 8.70 / 17.4 | 7.80 / 15.6 | 6.90 / 13.8 | 6.00 / 12.0 | 4.98 / 9.96 | 4.62 / 9.24 | 4.08 / 8.16 | 3.66 / 7.32 | 3.12 / 6.24 |
| MF-R700 | 10.1 / 20.3 | 9.10 / 18.2 | 8.05 / 16.1 | 7.00 / 14.0 | 5.81 / 11.6 | 5.39 / 10.7 | 4.76 / 9.52 | 4.27 / 9.44 | 3.64 / 7.28 |
| MF-R800 | 11.6 / 23.2 | 10.4 / 20.8 | 9.20 / 18.4 | 8.00 / 16.0 | 6.64 / 13.2 | 6.16 / 12.3 | 5.44 / 10.8 | 4.88 / 9.76 | 4.16 / 8.32 |
| MF-R900 | 13.0 / 26.1 | 11.7 / 23.4 | 10.3 / 20.7 | 9.00 / 18.0 | 7.47 / 14.9 | 6.93 / 12.7 | 6.12 / 12.2 | 5.49 / 10.9 | 4.68 / 9.36 |
| MF-R1100 | 16.1 / 32.0 | 14.6 / 29.2 | 13.1 / 26.2 | 11.0 / 22.1 | 9.40 / 18.4 | 8.80 / 17.6 | 7.80 / 15.6 | 6.90 / 13.8 | 5.20 / 10.4 |

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

## Typical Time to Trip at 23 °C




## How to Order

**MF - R 110 - 0 - 99**

Multifuse® Product Designator

Series
R = Radial Leaded Component

Hold Current, $I_{hold}$
005-1100 (0.05 Amps - 11.0 Amps)

Packaging Options
- __ = Bulk Packaging without part number suffix option
- 0-99 = Bulk Packaging with part number suffix option
- 2 = Tape and Reel without part number suffix option*
- 2-99 = Tape and Reel with part number suffix option
- AP = Ammo-Pak*
- 0-14 = Kinked leads where straight leads are standard
- 0-17 = Straight leads where kinked leads are standard

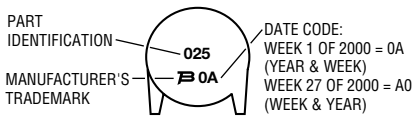
Part Number Suffix Option
- 99 = As of date code April 1, 2005 all MF-R models are RoHS compliant. The suffix "-99" can be used if a new part number is required to reference the RoHS compliance.

Examples:
MF-R110 ..... Bulk packaging
MF-R110-0-99..... Bulk packaging with part number suffix option
MF-R110-2 ..... Tape and reel packaging
MF-R110-2-99..... Tape and reel packaging with part number suffix option
MF-R090-0-9-99 ..... Bulk packaging with part number suffix option
MF-R250-0-10-99 ... Bulk packaging with part number suffix option

*Packaged per EIA486-B

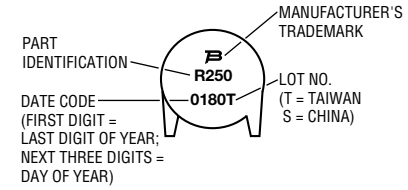
## Typical Part Marking: MF-R005 - R025

Represents total content. Layout may vary.




## Typical Part Marking: MF-R030 - R1100

Represents total content. Layout may vary.






Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

## MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 & MF-RX/250 Series
## Tape and Reel Specifications

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Devices taped using EIA468–B/IEC286-2 standards. See table below and Figures 1 and 2 for details.

| Dimension Description | IEC Mark | EIA Mark | Dimensions | |
|---|---|---|---|---|
| | | | Dimensions | Tolerance |
| Carrier tape width | $W$ | $W$ | 18 (.709) | -0.5/+1.0 (-0.02/+.039) |
| Hold down tape width | $W_0$ | $W_4$ | 11 (.433) | min. |
| Hold down tape | | | No protrusion | |
| Top distance between tape edges | $W_2$ | $W_6$ | 3 (.118) | max. |
| Sprocket hole position | $W_1$ | $W_5$ | 9 (.354) | -0.5/+0.75 (-0.02/+0.03) |
| Sprocket hole diameter | $D_0$ | $D_0$ | 4 (.157) | ±0.2 (±.0078) |
| Abscissa to plane (straight lead) | $H$ | $H$ | 18.5 (.728) | ±3.0 (±.118) |
| Abscissa to plane (kinked lead) | $H_0$ | $H_0$ | 16 (.63) | ±0.5 (±.02) |
| Abscissa to top (straight lead) | $H_1$ | $H_1$ | 38.0 (1.496) | max. |
| Abscissa to top (kinked lead) | $H_1$ | $H_1$ | 32.2 (1.268) | max. |
| Overall width w/lead protrusion (straight lead) | | $C_1$ | 55.0 (2.165) | max. |
| Overall width w/lead protrusion (kinked lead) | | $C_1$ | 43.2 (1.7) | max. |
| Overall width w/o lead protrusion (straight lead) | | $C_2$ | 54.0 (2.126) | max. |
| Overall width w/o lead protrusion (kinked lead) | | $C_2$ | 42.5 (1.673) | max. |
| Lead protrusion | $l_1$ | $L_1$ | 1.0 (.039) | max. |
| Protrusion of cutout | $L$ | $L$ | 11 (.433) | max. |
| Protrusion beyond hold-down tape | $l_2$ | $l_2$ | Not specified | |
| Sprocket hole pitch | $P_0$ | $P_0$ | 12.7 (0.5) | ±0.3 (±.012) |
| Pitch tolerance | | | 20 consecutive | ±1 (±.039) |
| Device pitch: MF-R005–MF-R160, MF-R/90, MF-RX110/72–MF-RX185/72 | | | 12.7 (0.5) | ±0.3 (±.012) |
| Device pitch: MF-R185–MF-R400, MF-RX110–MF-RX375 MF-R/600, MF-RX250/72–MF-RX375/72 | | | 25.4 (1.0) | ±0.6 (±.024) |
| Tape thickness | $t$ | $t$ | 0.9 (.035) | max. |
| Tape thickness with splice: MF-R010–MF-R160, MF-RX110/72–MF-RX185/72 | | $t_1$ | 1.5 (.059) | max. |
| Tape thickness with splice: MF-R250–MF-R1100, MF-RX110–MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 | | $t_1$ | 2.3 (.091) | max. |
| Splice sprocket hole alignment | | | 0 | ±0.3 (±.012) |
| Body lateral deviation | $\Delta h$ | $\Delta h$ | 0 | ±1.0 (±.039) |
| Body tape plane deviation | $\Delta p$ | $\Delta p$ | 0 | ±1.3 (±.051) |

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

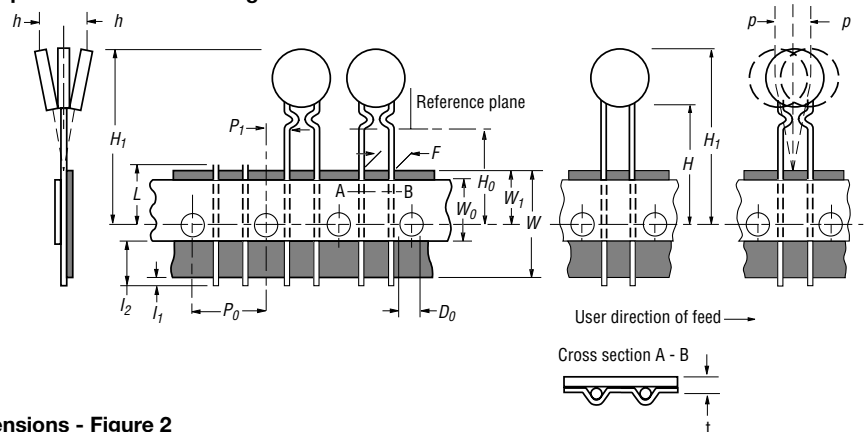
DIMENSIONS: MM (INCHES)

## MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 & MF-RX/250 Series
## Tape and Reel Specifications

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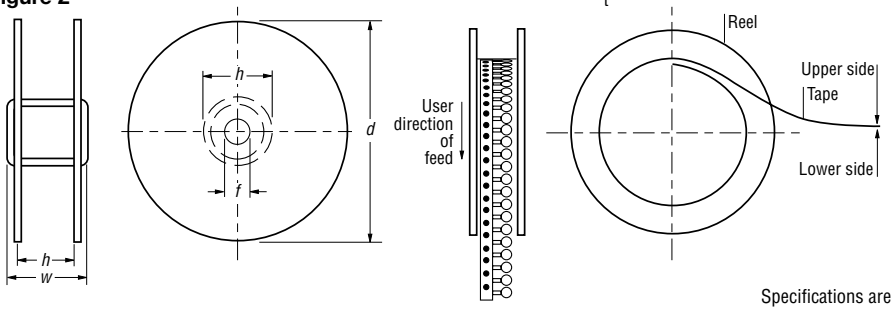
| Dimension Description | IEC Mark | EIA Mark | Dimensions | Tolerance |
|---|---|---|---|---|
| Lead spacing: MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 | *F* | *F* | 5.08 (0.2) | ±0.2 (±0.008) |
| Lead spacing: MF-RX/250 | *F* | *F* | 5.08 (0.2) | -0.5/+0.6 (-.020/+.024) |
| Reel width | *w* | $W_2$ | 56.0 (2.205) | max. |
| Reel diameter | *d* | *a* | 370.0 (14.57) | max. |
| Space between flanges less device | $W_1$ | *h* | 4.75 (.187) | ±3.25 (±.128) |
| Arbor hole diameter | *f* | *c* | 26.0 (1.024) | ±12.0 (±.472) |
| Core diameter: MF-R, MF-RX, MF-R/90 | *h* | *n* | 80 (3.15) | max. |
| Core diameter: MF-RX/250, MF-R/600 | *h* | *n* | 91 (3.58) | max. |
| Box: MF-R, MF-RX, MF-R/90 | | | 56 (2.2) 372 (14.6) 372 (14.6) | max. |
| Box: MF-RX/250 | | | 67 (2.64) 372 (14.6) 362 (14.25) | max. |
| Box: MF-R/600 | | | 64 (2.52) 372 (14.6) 362 (14.25) | max. |
| Consecutive missing places: MF-R, MF-RX, MF-R/90 | | | 3 | max. |
| Consecutive missing places: MF-RX/250, MF-R/600 | | | none | |
| Empty places per reel: MF-R, MF-RX, MF-R/90 | | | Not specified | |
| Empty places per reel: MF-RX/250, MF-R/600 | | | 0.1 % | |

**Taped Component Dimensions - Figure 1**




DIMENSIONS: MM / (INCHES)

**Reel Dimensions - Figure 2**




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