



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 load to be protected with a voltage supply of up to 90 V, including:
- Broadband cable power passing taps
 - Set-top boxes

MF-R/90 Series - PTC Resettable Fuses

Electrical Characteristics

| Model | V max. Volts | I max. Amps | I _{hold} | I _{trip} | Initial Resistance Values | | One Hour Post-Trip Resistance Standard Trip | Max. Time to Trip | | Nominal 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-R055/90 | 90 | 10 | 0.55 | 1.1 | 0.45 | 0.9 | 2.0 | 1.6 | 60 | 2.0 |
| MF-R055/90U | 90 | 10 | 0.55 | 1.1 | 0.45 | 0.9 | 2.0 | 1.6 | 28 | 2.0 |
| MF-R075/90 | 90 | 10 | 0.75 | 1.5 | 0.37 | 0.75 | 1.65 | 2.0 | 60 | 2.5 |

*"U" suffix indicates product without insulation coating.

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..... | +125 °C to -55 °C, 10 times..... ±10 % typical resistance change |
| Solvent Resistance..... | MIL-STD-202, Method 215..... No change |
| Vibration..... | MIL-STD-883C, Method 2007.1, No change Condition A |

Test Procedures And Requirements For Model MF-R/90 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..... | 5 times I _{hold} , 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 |
| UL File Number..... | E 174545S | |
| CSA File Number..... | CA 110338 | |
| TUV 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-R055/90 | 0.85 / 1.7 | 0.75 / 1.5 | 0.65 / 1.3 | 0.55 / 1.1 | 0.45 / 0.9 | 0.4 / 0.8 | 0.35 / 0.7 | 0.3 / 0.6 | 0.22 / 0.44 |
| MF-R055/90U | 0.85 / 1.7 | 0.75 / 1.5 | 0.65 / 1.3 | 0.55 / 1.1 | 0.45 / 0.9 | 0.4 / 0.8 | 0.35 / 0.7 | 0.3 / 0.6 | 0.22 / 0.44 |
| MF-R075/90 | 1.15 / 2.3 | 1.0 / 2.0 | 0.9 / 1.8 | 0.75 / 1.5 | 0.61 / 1.22 | 0.55 / 1.1 | 0.48 / 0.96 | 0.41 / 0.82 | 0.30 / 0.6 |

*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/90 Series - PTC Resettable Fuses

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Product Dimensions

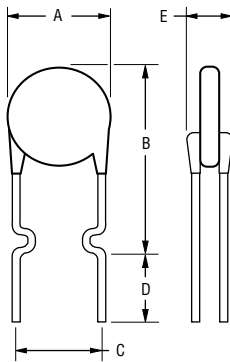
| Model | A Max. | B Max. | C (Pitch) Nom. | D Min. | E Max. | Physical Characteristics | | |
|-------------|-----------------------|-----------------------|---|-----------------------|-----------------------|--------------------------|------------------------|----------|
| | | | | | | Style | Lead Dia. | Material |
| MF-R055/90 | $\frac{10.9}{(0.43)}$ | $\frac{16.7}{(0.65)}$ | $\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$ | $\frac{6.3}{(0.248)}$ | $\frac{3.6}{(0.142)}$ | 1 | $\frac{0.81}{(0.032)}$ | Sn/Cu |
| MF-R055/90U | $\frac{10.3}{(0.4)}$ | $\frac{16.7}{(0.65)}$ | $\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$ | $\frac{6.3}{(0.248)}$ | $\frac{3.0}{(0.118)}$ | 1 | $\frac{0.81}{(0.032)}$ | Sn/Cu |
| MF-R075/90 | $\frac{11.9}{(0.47)}$ | $\frac{15.5}{(0.61)}$ | $\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$ | $\frac{6.3}{(0.248)}$ | $\frac{3.6}{(0.142)}$ | 1 | $\frac{0.81}{(0.032)}$ | Sn/Cu |

Packaging options:

BULK: 500 pcs. per bag. TAPE & REEL: 1500 pcs. per reel. AMMO-PACK: 1000 pcs. per pack

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

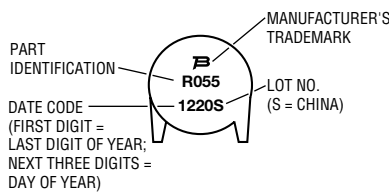
Style 1



Also available with straight leads.

Typical Part Marking

Represents total content. Layout may vary.

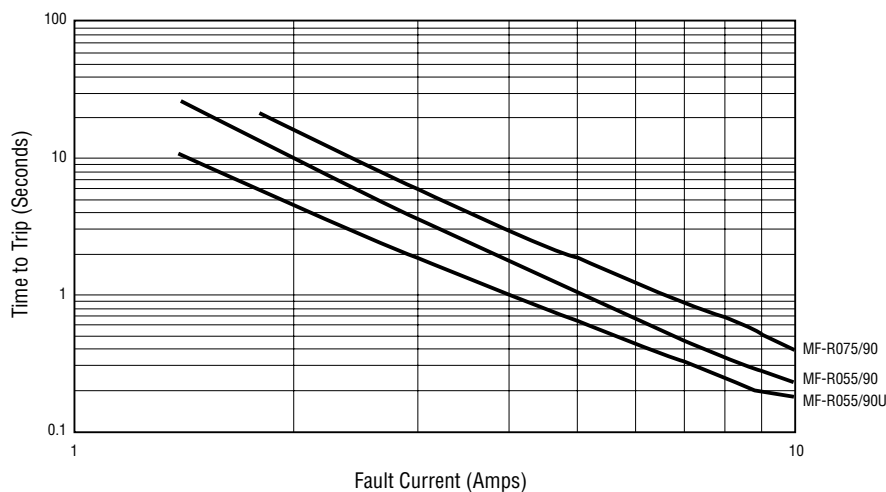


How to Order

MF - R 055/90 U - 0

Multifuse®
 Product Designator
 Series R = Radial Leaded Component
 Hold Current, I_{hold} 055, 075 (0.55 Amps - 0.75 Amps)
 Max. Voltage, V
 Coating
 _ = Coated
 U = Uncoated
 Packaging Options
 - 0 = Bulk Packaging
 - 2 = Tape and Reel*
 - AP = Ammo-Pak*
 *Packaged per EIA486-B

Typical Time to Trip at 23 °C



MF-R/90, REV. F 05/11

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 | $\frac{18}{(.709)}$ | $\frac{-0.5/+1.0}{(-0.02/+0.039)}$ |
| Hold down tape width | W_0 | W_4 | $\frac{11}{(.433)}$ | min. |
| Hold down tape | | | No protrusion | |
| Top distance between tape edges | W_2 | W_6 | $\frac{3}{(.118)}$ | max. |
| Sprocket hole position | W_1 | W_5 | $\frac{9}{(.354)}$ | $\frac{-0.5/+0.75}{(-0.02/+0.03)}$ |
| Sprocket hole diameter | D_0 | D_0 | $\frac{4}{(.157)}$ | $\frac{\pm 0.2}{(\pm .0078)}$ |
| Abscissa to plane (straight lead) | H | H | $\frac{18.5}{(.728)}$ | $\frac{\pm 3.0}{(\pm .118)}$ |
| Abscissa to plane (kinked lead) | H_0 | H_0 | $\frac{16}{(.63)}$ | $\frac{\pm 0.5}{(\pm .02)}$ |
| Abscissa to top (straight lead) | H_1 | H_1 | $\frac{38.0}{(1.496)}$ | max. |
| Abscissa to top (kinked lead) | H_1 | H_1 | $\frac{32.2}{(1.268)}$ | max. |
| Overall width w/lead protrusion (straight lead) | | C_1 | $\frac{55.0}{(2.165)}$ | max. |
| Overall width w/lead protrusion (kinked lead) | | C_1 | $\frac{43.2}{(1.7)}$ | max. |
| Overall width w/o lead protrusion (straight lead) | | C_2 | $\frac{54.0}{(2.126)}$ | max. |
| Overall width w/o lead protrusion (kinked lead) | | C_2 | $\frac{42.5}{(1.673)}$ | max. |
| Lead protrusion | l_1 | L_1 | $\frac{1.0}{(.039)}$ | max. |
| Protrusion of cutout | L | L | $\frac{11}{(.433)}$ | max. |
| Protrusion beyond hold-down tape | l_2 | l_2 | Not specified | |
| Sprocket hole pitch | P_0 | P_0 | $\frac{12.7}{(0.5)}$ | $\frac{\pm 0.3}{(\pm .012)}$ |
| Pitch tolerance | | | 20 consecutive | $\frac{\pm 1}{(\pm .039)}$ |
| Device pitch: MF-R005–MF-R160, MF-R/90, MF-RX110/72–MF-RX185/72 | | | $\frac{12.7}{(0.5)}$ | $\frac{\pm 0.3}{(\pm .012)}$ |
| Device pitch: MF-R185–MF-R400, MF-RX110–MF-RX375 MF-R/600, MF-RX250/72–MF-RX375/72 | | | $\frac{25.4}{(1.0)}$ | $\frac{\pm 0.6}{(\pm .024)}$ |
| Tape thickness | t | t | $\frac{0.9}{(.035)}$ | max. |
| Tape thickness with splice: MF-R010–MF-R160, MF-RX110/72–MF-RX185/72 | | t_1 | $\frac{1.5}{(.059)}$ | max. |
| Tape thickness with splice: MF-R250–MF-R1100, MF-RX110–MF-RX375, MF-R/90, MF-RX250/72–MF-RX375/72 | | t_1 | $\frac{2.3}{(.091)}$ | max. |
| Splice sprocket hole alignment | | | 0 | $\frac{\pm 0.3}{(\pm .012)}$ |
| Body lateral deviation | Δ_h | Δ_h | 0 | $\frac{\pm 1.0}{(\pm .039)}$ |
| Body tape plane deviation | Δ_p | Δ_p | 0 | $\frac{\pm 1.3}{(\pm .051)}$ |

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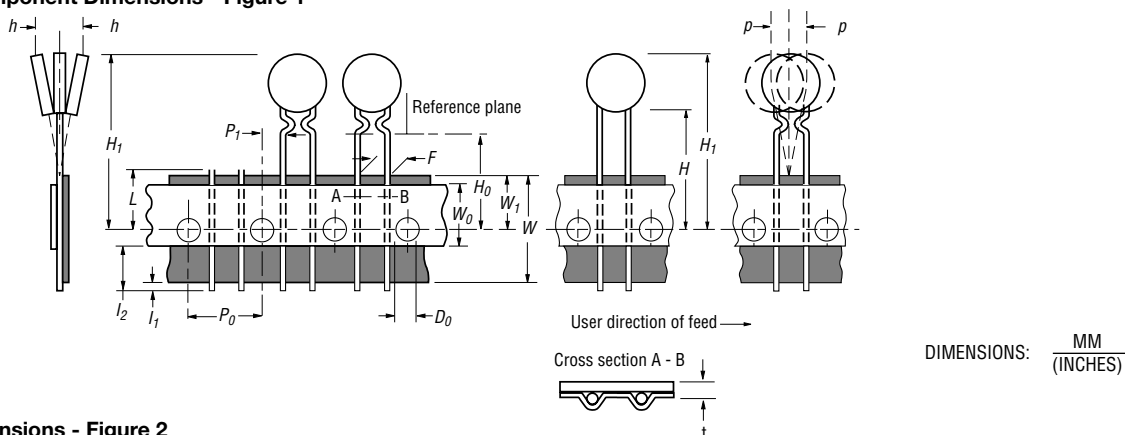
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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

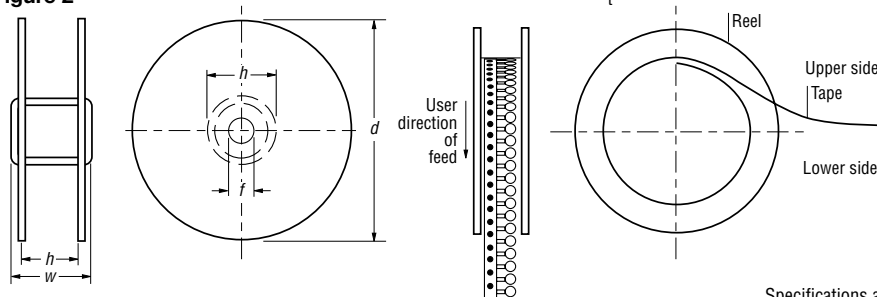
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| Dimension Description | IEC Mark | EIA Mark | Dimensions | | | |
|--|-----------------------|-----------------------|------------------|-----------------------------|----------------|---------------|
| | | | Dimensions | Tolerance | | |
| Lead spacing: MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 | <i>F</i> | <i>F</i> | 5.08 (0.2) | ±0.2 (±0.008) | | |
| Lead spacing: MF-RX/250 | <i>F</i> | <i>F</i> | 5.08 (0.2) | -0.5/+0.6 (-.020/+0.024) | | |
| Reel width | <i>w</i> | <i>W</i> ₂ | 56.0 (2.205) | max. | | |
| Reel diameter | <i>d</i> | <i>a</i> | 370.0 (14.57) | max. | | |
| Space between flanges less device | <i>W</i> ₁ | <i>h</i> | 4.75 (.187) | ±3.25 (±.128) | | |
| Arbor hole diameter | <i>f</i> | <i>c</i> | 26.0 (1.024) | ±12.0 (±.472) | | |
| Core diameter: MF-R, MF-RX, MF-R/90 | <i>h</i> | <i>n</i> | 80 (3.15) | max. | | |
| Core diameter: MF-RX/250, MF-R/600 | <i>h</i> | <i>n</i> | 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



Reel Dimensions - Figure 2



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JONHON

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