



Features

- Radial Leaded Devices
- Cured, flame retardant epoxy polymer insulating material meets UL 94V-0 requirements
- Lead free option available
- 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	Ihold	Itrip	Initial Resistance Values		One Hour Post-Trip Resistance Standard Trip	Maximum Time To Trip		Nominal Tripped Power Dissipation
			Amps at 23 °C	Amps at 23 °C	Ohms at 23 °C		Ohms at 23 °C	Amps 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 State125 °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 ResistanceMIL-STD-202, Method 215No change
VibrationMIL-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	$R_{min} \leq R \leq R_{max}$
Time to Trip	At specified current, Vmax, 23 °C	$T \leq \text{max. time to trip (seconds)}$
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 NumberE 174545S
CSA File NumberCA 110338
TÜV File NumberR2057213

Thermal Derating Chart - Ihold / Itrip (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

Additional Features

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

MF-R/90 Series - PTC Resettable Fuses

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Product Dimensions

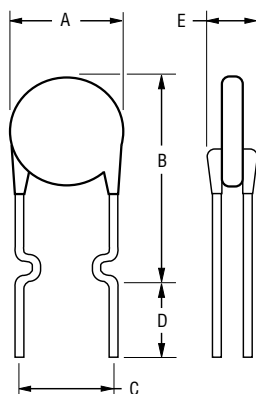
Model	A Max.	B Max.	C (Pitch) Nom.	D Min.	E Max.	Physical Characteristics		
						Style	Lead Dia.	Material
MF-R055/90	$\frac{10.9}{(0.43)}$	$\frac{14.0}{(0.55)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{6.3}{(0.248)}$	$\frac{3.6}{(0.142)}$	1	$\frac{0.81}{(0.032)}$	Sn/Cu
MF-R055/90U	$\frac{10.3}{(0.4)}$	$\frac{10.3}{(0.4)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{6.3}{(0.248)}$	$\frac{3.0}{(0.118)}$	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 = $\frac{\text{MM}}{(\text{INCHES})}$

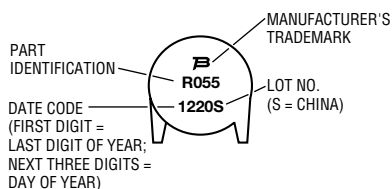
Style 1



Also available with straight leads.

Typical Part Marking

Represents total content. Layout may vary.



How to Order

MF - R 055/90 U - 0 - 99

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*

Lead Free Option
— = Standard Product
- 99 = Lead Free

*Packaged per EIA486-B

Typical Time to Trip at 23 °C



MF-R/90, REV. C, 02/04

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

MF-R, MF-RX, MF-R/90, MF-R/250, MF-RX/250 & MF-R/600 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	<i>W</i>	<i>W</i>	$\frac{18}{(.709)}$	$\frac{-0.5/+1.0}{(-0.02/+0.039)}$
Hold down tape width: MF-R/600		<i>W4</i>	$\frac{5}{(.197)}$	min.
Hold down tape width: all others		<i>W4</i>	$\frac{11}{(.433)}$	ref.
Hold down tape	<i>W0</i>		No protrusion	
Top distance between tape edges	<i>W2</i>	<i>W6</i>	$\frac{3}{(.118)}$	max.
Sprocket hole position	<i>W1</i>	<i>W5</i>	$\frac{9}{(.354)}$	$\frac{-0.5/+0.75}{(-0.02/+0.03)}$
Sprocket hole diameter	<i>D0</i>	<i>D0</i>	$\frac{4}{(.157)}$	± 0.2 ($\pm .0078$)
Abscissa to plane (straight lead)	<i>H</i>	<i>H</i>	$\frac{18.5}{(.728)}$	± 3.0 ($\pm .118$)
Abscissa to plane (kinked lead)	<i>H0</i>	<i>H0</i>	$\frac{16}{(.63)}$	± 0.5 ($\pm .02$)
Abscissa to top	<i>H1</i>	<i>H1</i>	$\frac{32.2}{(1.268)}$	max.
Overall width w/lead protrusion		<i>C1</i>	$\frac{43.2}{(1.7)}$	max.
Overall width w/o lead protrusion		<i>C2</i>	$\frac{42.5}{(1.673)}$	max.
Lead protrusion	<i>I1</i>	<i>L1</i>	$\frac{1.0}{(.039)}$	max.
Protrusion of cutout	<i>L</i>	<i>L</i>	$\frac{11}{(.433)}$	max.
Protrusion beyond hold tape	<i>I2</i>	<i>I2</i>	Not specified	
Sprocket hole pitch	<i>P0</i>	<i>P0</i>	$\frac{12.7}{(0.5)}$	$\frac{\pm 0.3}{(\pm .012)}$
Pitch tolerance			20 consecutive	± 1
Device pitch: MF-R005 – MF-R160 & MF-R/90			$\frac{12.7}{(0.5)}$	
Device pitch: MF-R185 – MF-R400 & MF-R/600			$\frac{25.4}{(1.0)}$	
Device pitch: MF-RX110 – MF-RX160			$\frac{12.7}{(0.5)}$	
Device pitch: MF-RX185 – MF-RX375			$\frac{12.7}{(0.5)}$	
Device pitch: MF-R/250 & MF-RX/250			$\frac{12.7}{(0.5)}$	
Tape thickness	<i>t</i>	<i>t</i>	$\frac{0.9}{(.035)}$	max.
Tape thickness with splice		<i>t1</i>	$\frac{2.0}{(.079)}$	max.
Splice sprocket hole alignment			0	$\frac{\pm 0.3}{(\pm .012)}$
Body lateral deviation	Δh	Δh	0	$\frac{\pm 1.0}{(\pm .039)}$
Body tape plane deviation	Δp	Δp	0	$\frac{\pm 1.3}{(\pm .051)}$
Lead seating plane deviation: MF-R/600*	$\Delta P1$	<i>P1</i>	$\frac{3.81}{(.015)}$	$\frac{\pm 0.7}{(\pm .028)}$
Lead seating plane deviation	$\Delta P1$	<i>P1</i>	0	$\frac{\pm 0.7}{(\pm .028)}$
Lead spacing	<i>F</i>	<i>F</i>	$\frac{5.08}{(0.2)}$	$\frac{\pm 0.8}{(\pm .035)}$
Reel width	<i>w</i>	<i>w</i>	$\frac{56}{(2.205)}$	max.
Reel diameter	<i>d</i>	<i>a</i>	$\frac{370}{(14.57)}$	max.
Space between flanges less device			$\frac{4.75}{(.187)}$	$\frac{\pm 3.25}{(\pm .128)}$

*Differs from EIA specification.

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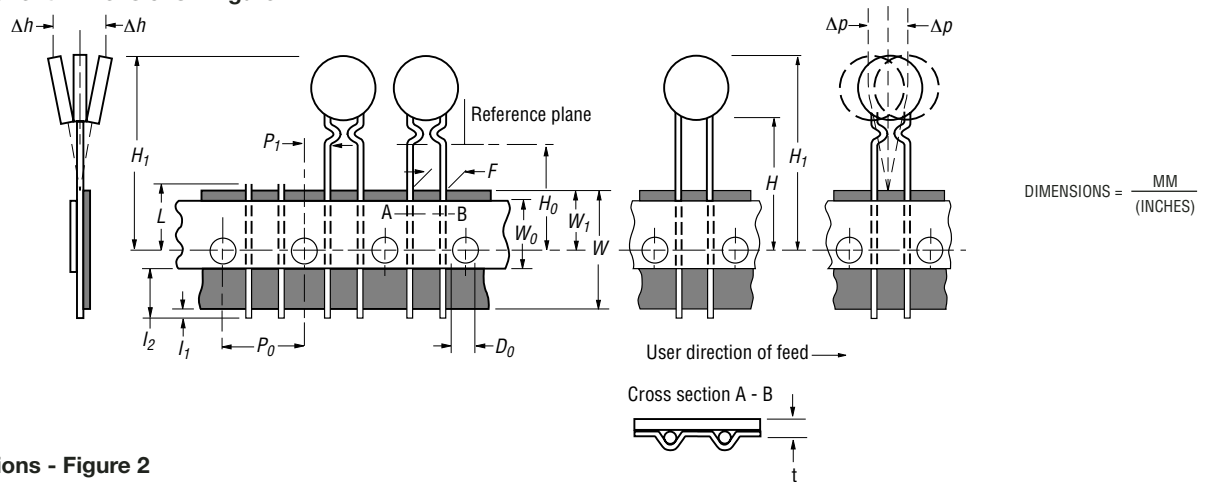
DIMENSIONS = $\frac{\text{MM}}{(\text{INCHES})}$

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

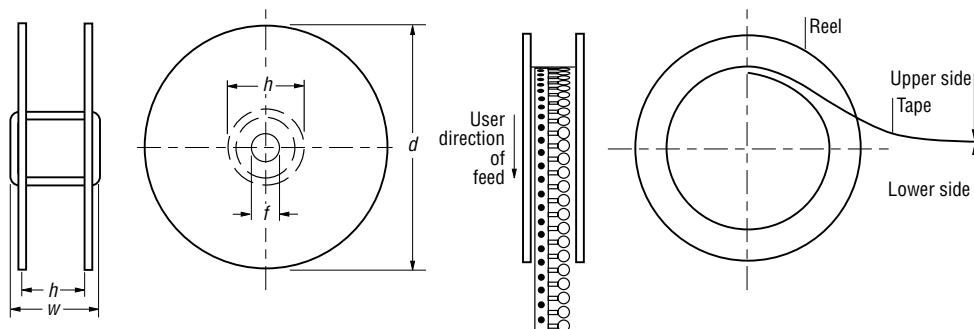
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Dimension Description	IEC Mark	EIA Mark	Dimensions	
			Dimensions	Tolerance
Space between flanges less device			$\frac{4.75}{(.187)}$	$\frac{\pm 3.25}{(\pm .128)}$
Arbor hole diameter	<i>f</i>	<i>c</i>	$\frac{26}{(1.024)}$	$\frac{\pm 12.0}{(\pm .472)}$
Core diameter: MF-R, MF-RX, MF-R/90 & MF-R/250	<i>h</i>	<i>n</i>	$\frac{80}{(3.15)}$	max.
Core diameter: MF-RX/250 & MF-R/600	<i>h</i>	<i>n</i>	$\frac{91}{(3.58)}$	max.
Box: MF-R, MF-RX, MF-R/90 & MF-R/250			$\frac{56}{(2.2)} \quad \frac{372}{(14.6)} \quad \frac{372}{(14.6)}$	max.
Box: MF-RX/250			$\frac{67}{(2.64)} \quad \frac{372}{(14.6)} \quad \frac{362}{(14.25)}$	max.
Box: MF-R/600			$\frac{64}{(2.52)} \quad \frac{372}{(14.6)} \quad \frac{362}{(14.25)}$	max.
Consecutive missing places:				
MF-R, MF-RX, MF-R/90 & MF-R/250			3	max.
Consecutive missing places: MF-RX/250 & MF-R/600			None	
Empty places per reel:				
MF-R, MF-RX, MF-R/90 & MF-R/250				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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