



## 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 <sub>hold</sub>	I <sub>trip</sub>	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 <sub>min</sub> ≤ R ≤ R <sub>max</sub>
Time to Trip.....	5 times I <sub>hold</sub> , V <sub>max</sub> , 23 °C.....	T ≤ max. time to trip (seconds)
Hold Current.....	30 min. at I <sub>hold</sub> .....	No trip
Trip Cycle Life.....	V <sub>max</sub> , I <sub>max</sub> , 100 cycles.....	No arcing or burning
Trip Endurance.....	V <sub>max</sub> , 48 hours.....	No arcing or burning
UL File Number.....	E 174545S	
CSA File Number.....	CA 110338	
TUV File Number.....	R2057213	

### Thermal Derating Chart - I<sub>hold</sub> / I<sub>trip</sub> (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

# BOURNS®

### Product Dimensions

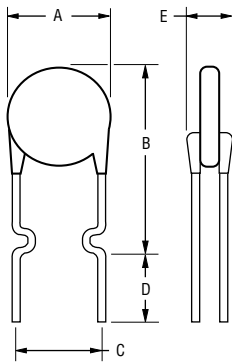
Model	A Max.	B Max.	C (Pitch) Nom.	D Min.	E Max.	Physical Characteristics		
						Style	Lead Dia.	Material
MF-R055/90	$\frac{10.9}{(0.43)}$	$\frac{16.7}{(0.65)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{6.3}{(0.248)}$	$\frac{3.6}{(0.142)}$	1	$\frac{0.81}{(0.032)}$	Sn/Cu
MF-R055/90U	$\frac{10.3}{(0.4)}$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

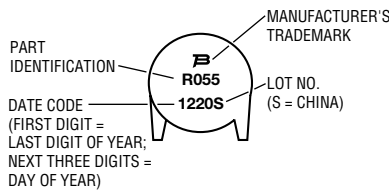
### Style 1



Also available with straight leads.

### Typical Part Marking

Represents total content. Layout may vary.

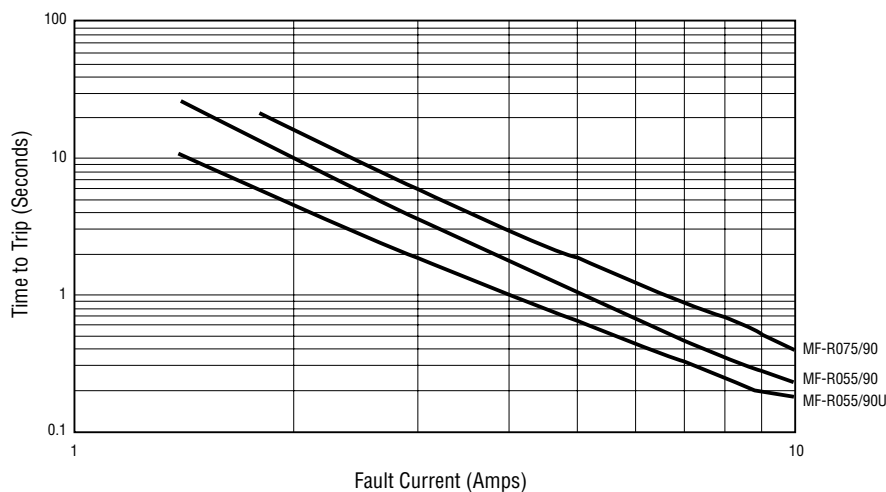


### How to Order

**MF - R 055/90 U - 0**

Multifuse®  
 Product Designator  
 Series R = Radial Leaded Component  
 Hold Current, I<sub>hold</sub> 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

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# 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	$\Delta_h$	$\Delta_h$	0	$\frac{\pm 1.0}{(\pm .039)}$
Body tape plane deviation	$\Delta_p$	$\Delta_p$	0	$\frac{\pm 1.3}{(\pm .051)}$

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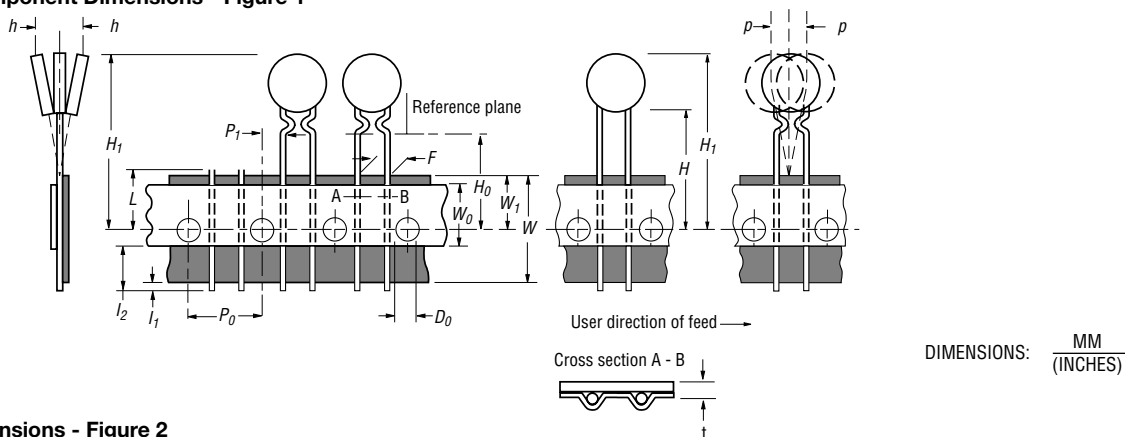
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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

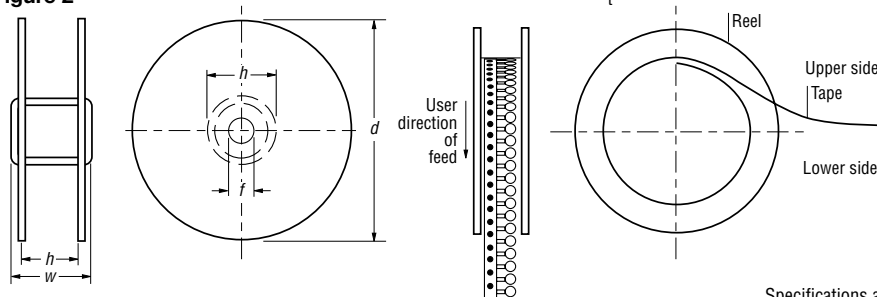
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Dimension Description	IEC Mark	EIA Mark	Dimensions			
			Dimensions	Tolerance		
Lead spacing: MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72	F	F	5.08 (0.2)	±0.2 (±0.008)		
Lead spacing: MF-RX/250	F	F	5.08 (0.2)	-0.5/+0.6 (-.020/+0.024)		
Reel width	w	W <sub>2</sub>	56.0 (2.205)	max.		
Reel diameter	d	a	370.0 (14.57)	max.		
Space between flanges less device	W <sub>1</sub>	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**



**Reel Dimensions - Figure 2**



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## Стандарт Электрон Связь

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