



## Features

- Radial leaded devices
- Fast tripping resettable PTCs
- Binned and sorted narrow resistance ranges available
- RoHS compliant\*
- Agency recognition:  

## Applications

- Customer Premise Equipment (CPE)
- Central Office / Telecom Centers (CO)
- Access equipment

# MF-RX/250 Series - Telecom PTC Resettable Fuses

## Electrical Characteristics

Model	Max. Operating Voltage (Vdc)	Max. Interrupt Ratings		Hold Current	Initial Resistance		One Hour Post-Trip Resistance
		Volts (Vrms)	Amps (A)		Amps at 23 °C	Ohms at 23 °C	
		Max.	Max.	I <sub>H</sub>	Min.	Max.	Max.
MF-RX012/250	60	250	3.0	0.12	4.0	8.0	16.0
MF-RX012/250-A	60	250	3.0	0.12	7.0	9.0	16.0
MF-RX012/250-C	60	250	3.0	0.12	5.5	7.5	14.0
MF-RX012/250-F	60	250	3.0	0.12	6.0	10.5	16.0
MF-RX012/250-1	60	250	3.0	0.12	6.0	9.0	16.0
MF-RX012/250-2	60	250	3.0	0.12	8.0	10.5	16.0
MF-RX012/250-T	60	250	3.0	0.12	7.0	12.0	16.0
MF-RX012/250U	60	250	3.0	0.12	6.0	10.0	16.0
MF-RX014/250	60	250	3.0	0.145	3.0	6.0	14.0
MF-RX014/250-A	60	250	3.0	0.145	3.0	5.5	12.0
MF-RX014/250-B	60	250	3.0	0.145	4.5	6.0	14.0
MF-RX014/250-T	60	250	3.0	0.145	5.4	7.5	14.0
MF-RX014/250U	60	250	3.0	0.145	3.5	6.5	12.0
MF-RX018/250	60	250	10.0	0.18	0.8	2.0	4.0
MF-RX018/250U	60	250	10.0	0.18	0.8	2.0	4.0

"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..... ±15 % typical resistance change
Humidity Aging .....	+85 °C, 85 % R.H. 1000 hours ..... ±15 % typical resistance change
Thermal Shock .....	+125 °C to -55 °C, 10 times..... ±15 % typical resistance change
Solvent Resistance.....	MIL-STD-202, Method 215B..... No change
Lead Solderability .....	ANSI/J-STD-002..... >95 % coverage
Flammability .....	IEC 695-2-2 ..... No Flame for 60 secs.
Vibration .....	MIL-STD-883C, Method 2007.1, Condition A ..... ±5 % typical resistance change

## Test Procedures And Requirements For Model MF-RX/250 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.....	TTT current, 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.....	250 Vrms, 3A, 10 cycles .....	No arcing or burning
UL File Number .....	E 174545	
TÜV File Number.....	50260658	

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

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## Additional Features

- Ability to withstand AC power cross conditions
- Assists equipment with meeting ITU-T K.20/K.21/K.45
- Assists equipment with meeting Telcordia GR-1089-C Intrabuilding

## MF-RX/250 Series - Telecom PTC Resettable Fuses

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

Model	Ambient Operating Temperature								
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
MF-RX012/250	0.186	0.165	0.143	0.120	0.099	0.088	0.077	0.066	0.050
MF-RX014/250	0.225	0.199	0.172	0.145	0.119	0.106	0.093	0.080	0.060
MF-RX018/250	0.269	0.240	0.211	0.180	0.153	0.138	0.123	0.109	0.087

$I_{trip}$  is approximately two times  $I_{hold}$ .

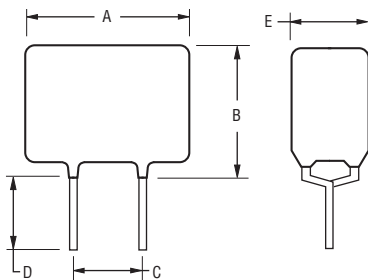
### Product Dimensions

Model	A Max.	B Max.	C Nom.	D Min.	E Max.	Physical Characteristics		
						Lead Dia.	Style	Material
MF-RX012/250	$\frac{6.5}{(0.256)}$	$\frac{11.0}{(0.433)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{4.7}{(0.185)}$	$\frac{4.6}{(0.181)}$	$\frac{0.65}{(0.026)}$	1	Sn/Cu
MF-RX012/250U	$\frac{6.0}{(0.236)}$	$\frac{10.0}{(0.394)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{4.7}{(0.185)}$	$\frac{3.8}{(0.150)}$	$\frac{0.65}{(0.026)}$	2	Sn/Cu
MF-RX014/250	$\frac{6.5}{(0.256)}$	$\frac{11.0}{(0.433)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{4.7}{(0.185)}$	$\frac{4.6}{(0.181)}$	$\frac{0.65}{(0.026)}$	1	Sn/Cu
MF-RX014/250U	$\frac{6.0}{(0.236)}$	$\frac{10.0}{(0.394)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{4.7}{(0.185)}$	$\frac{3.8}{(0.150)}$	$\frac{0.65}{(0.026)}$	2	Sn/Cu
MF-RX018/250	$\frac{11.0}{(0.433)}$	$\frac{13.6}{(0.535)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{4.7}{(0.185)}$	$\frac{4.6}{(0.181)}$	$\frac{0.65}{(0.026)}$	1	Sn/Cu
MF-RX018/250U	$\frac{10.4}{(0.409)}$	$\frac{12.6}{(0.496)}$	$\frac{5.1 \pm 0.7}{(0.201 \pm 0.028)}$	$\frac{4.7}{(0.185)}$	$\frac{3.8}{(0.150)}$	$\frac{0.65}{(0.026)}$	2	Sn/Cu

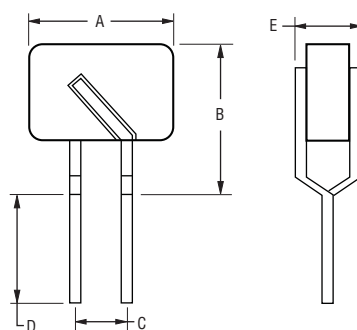
Packaging options: BULK: 500 pcs. per bag. TAPE & REEL: 1500 pcs. per reel (available binned).

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

Style 1

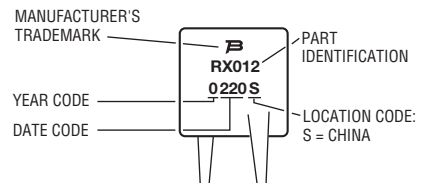


Style 2



### Typical Part Marking

Represents total content. Layout may vary.



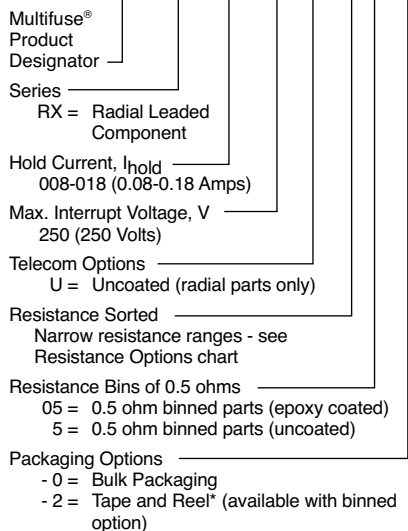
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# MF-RX/250 Series - Telecom PTC Resettable Fuses



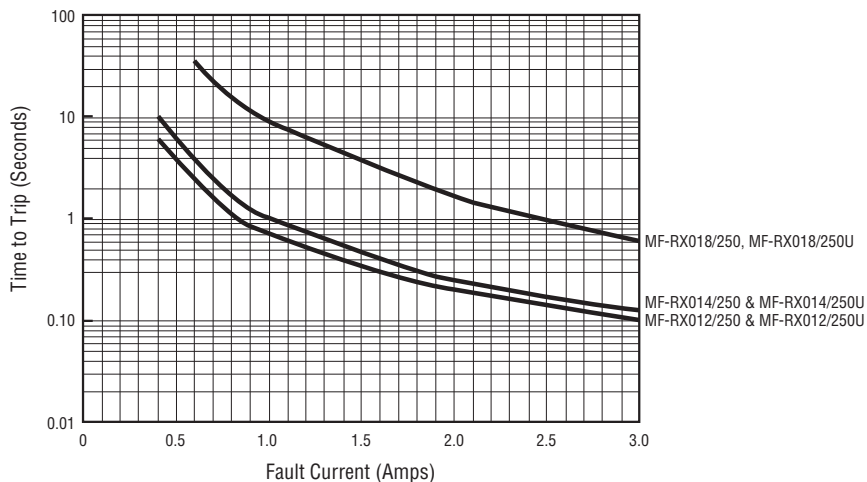
## How to Order

**MF - RX 012/250 U - A 5 - 2**



\*Packaged per EIA486-B

## Typical Time to Trip at 23 °C



## Resistance Options

Model	Initial Resistance Values		R1max	Bin
	Ohms @ 23 °C		Ohms @ 23 °C	
	Min.	Max.	Max.	
MF-RX012/250	4.0	8.0	16.0	N/A
MF-RX012/250-A05	7.0	9.0	16.0	0.5
MF-RX012/250-C05	5.5	7.5	14.0	0.5
MF-RX012/250-F05	6.0	10.5	16.0	0.5
MF-RX012/250-105	6.0	9.0	16.0	0.5
MF-RX012/250-205	8.0	10.5	16.0	0.5
MF-RX012/250-T05	7.0	12.0	16.0	0.5
MF-RX012/250U	6.0	10.0	16.0	N/A
MF-RX014/250	3.0	6.0	14.0	N/A
MF-RX014/250-A05	3.0	5.5	12.0	0.5
MF-RX014/250-B05	4.5	6.0	14.0	0.5
MF-RX014/250U	3.5	6.5	12.0	N/A

MF-RX/250, REV. L, 02/15

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# 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 through 4 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	$D_0$	$D_0$	$\frac{4}{(.157)}$	$\frac{\pm 0.2}{(\pm 0.078)}$
Abscissa to plane (straight lead)	$H$	$H$	$\frac{18.5}{(.728)}$	$\frac{\pm 3.0}{(\pm 1.18)}$
Abscissa to plane (kinked lead)	$H_0$	$H_0$	$\frac{16}{(.63)}$	$\frac{\pm 0.5}{(\pm 0.2)}$
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.
Protrusion of cutout	$L$	$L$	$\frac{11}{(.433)}$	max.
Sprocket hole pitch	$P_0$	$P_0$	$\frac{12.7}{(0.5)}$	$\frac{\pm 0.3}{(\pm 0.12)}$
Pitch tolerance			20 consecutive	$\frac{\pm 1}{(\pm 0.039)}$
Device pitch			$\frac{12.7}{(0.5)}$	$\frac{\pm 0.3}{(\pm 0.12)}$
Tape thickness	$t$	$t$	$\frac{0.9}{(.035)}$	max.
Tape thickness with splice		$t_1$	$\frac{1.5}{(.059)}$	max.
Splice sprocket hole alignment			0	$\frac{\pm 0.3}{(\pm 0.12)}$
Body lateral deviation	$\Delta_h$	$\Delta_h$	0	$\frac{\pm 1.0}{(\pm 0.039)}$
Body tape plane deviation	$\Delta_p$	$\Delta_p$	0	$\frac{\pm 1.3}{(\pm 0.051)}$
Lead spacing	$F$	$F$	$\frac{5.08}{(0.2)}$	$\frac{-0.5/+0.6}{(-.020/+0.024)}$
Reel width	$w$	$W_2$	$\frac{56.0}{(2.205)}$	max.
Reel diameter	$d$	$a$	$\frac{370.0}{(14.57)}$	max.
Space between flanges less device	$W_1$	$h$	$\frac{4.75}{(.187)}$	$\frac{\pm 3.25}{(\pm 1.28)}$
Arbor hole diameter	$f$	$c$	$\frac{26.0}{(1.024)}$	$\frac{\pm 12.0}{(\pm 4.72)}$
Core diameter	$h$	$n$	$\frac{91}{(3.58)}$	max.
Box			$\frac{67}{(2.64)}$ $\frac{372}{(14.6)}$ $\frac{362}{(14.25)}$	max.
Consecutive missing places			none	
Empty places per reel			0.1 %	

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

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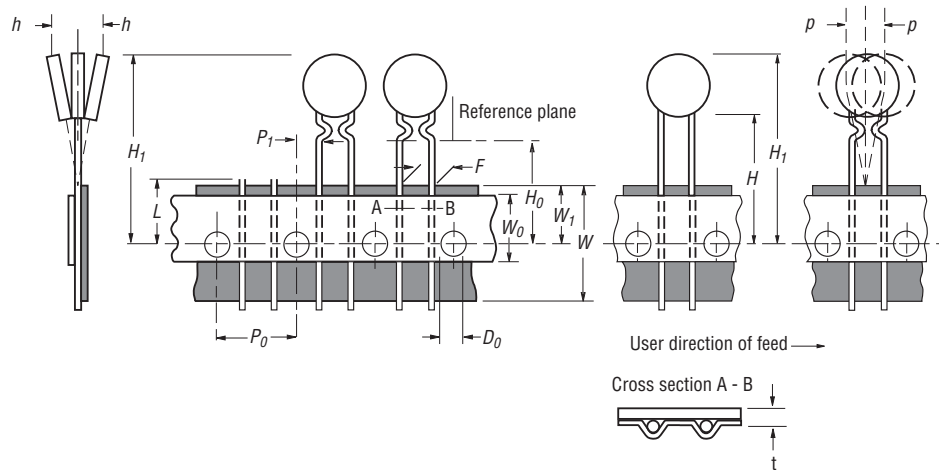
# MF-RX/250 Series Tape and Reel Specifications

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**Taped Component Dimensions - Figure 1**

**Applies to Models:**

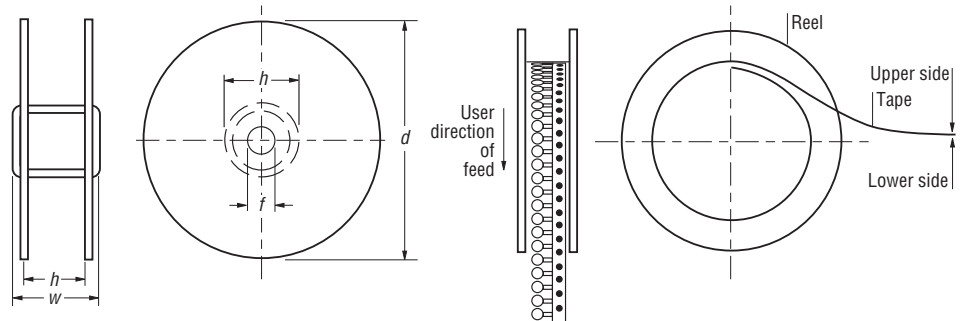
MF-RX012/250U
MF-RX014/250U
MF-RX018/250
MF-RX018/250U



**Reel Dimensions - Figure 2**

**Applies to Models:**

MF-RX012/250U
MF-RX014/250U
MF-RX018/250
MF-RX018/250U



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

# MF-RX/250 Series Tape and Reel Specifications

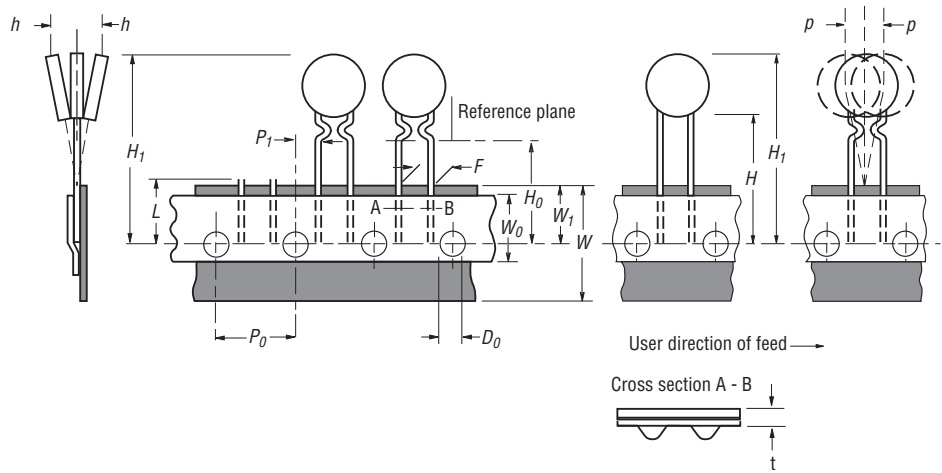
**BOURNS®**

**Taped Component Dimensions - Figure 3**

**Applies to Models:**

MF-RX012/250  
 MF-RX012/250-A  
 MF-RX012/250-C  
 MF-RX012/250-F  
 MF-RX012/250-1  
 MF-RX012/250-2  
 MF-RX012/250-T

MF-RX014/250  
 MF-RX014/250-A  
 MF-RX014/250-B  
 MF-RX014-250-T

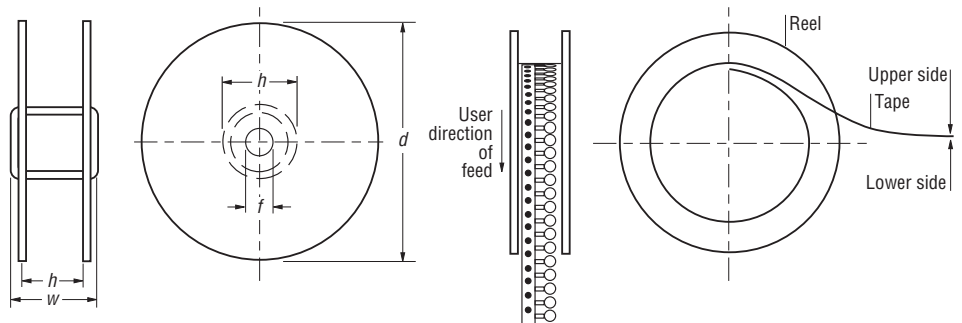


**Reel Dimensions - Figure 4**

**Applies to Models:**

MF-RX012/250  
 MF-RX012/250-A  
 MF-RX012/250-C  
 MF-RX012/250-F  
 MF-RX012/250-1  
 MF-RX012/250-2  
 MF-RX012/250-T

MF-RX014/250  
 MF-RX014/250-A  
 MF-RX014/250-B  
 MF-RX014-250-T



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

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