



## Features

- Compliant with AEC-Q200 Rev-D- Stress Test Qualification for Passive Components in Automotive Applications
- Radial leaded devices
- Smaller size vs. comparable  $I_{hold}$  ratings
- Faster tripping
- RoHS compliant\* and halogen free\*\*
- Agency recognition: cULus

## Applications

- Automotive applications
- Where space is limited and fast tripping is required

## MF-RG Series - PTC Resettable Fuses

### Environmental Characteristics

Item	Condition	Criteria
Operating Temperature	-40 °C to +85 °C	
Recommended Storage	+40 °C max. / 70 % R.H. max.	
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 (marking still legible)
Vibration	MIL-STD-883C, Method 2007.1 Condition A	No change ( $R_{min} < R < R_{1max}$ )
Moisture Sensitivity Level (MSL)	<a href="#">See Note</a>	
ESD Classification	Class 6 (per AEC-Q200-2, HBM)	

### Additional Information

Click these links for more information:



### Electrical Characteristics

Model	$V_{max}$	$I_{max}$	$I_{hold}$	$I_{trip}$	Initial Resistance		1 Hour ( $R_1$ ) Post-Trip Resistance	Max. Time to Trip		Tripped Power Dissipation	Agency Recognition	AEC-Q200 Compliant
					at 23 °C		at 23 °C	at 23 °C		at 23 °C	cUL	
					Min.	Max.	Max.	Amps	Seconds	Typ.	<a href="#">E174545</a>	
MF-RG300	16	100	3.0	5.1	0.0380	0.0650	0.0975	15	1.0	2.3	✓	✓
MF-RG400	16	100	4.0	6.8	0.0210	0.0385	0.0600	20	1.7	2.4	✓	✓
MF-RG500	16	100	5.0	8.5	0.0150	0.0230	0.0340	25	2.0	2.6	✓	✓
MF-RG600	16	100	6.0	10.2	0.0100	0.0185	0.0280	30	3.3	2.8	✓	✓
MF-RG650	16	100	6.5	11.1	0.0088	0.0158	0.0240	33	3.5	3.0	✓	✓
MF-RG700	16	100	7.0	11.9	0.0077	0.0130	0.0200	35	3.5	3.0	✓	✓
MF-RG800	16	100	8.0	13.6	0.0056	0.0110	0.0175	40	5.0	3.0	✓	✓
MF-RG900	16	100	9.0	15.3	0.0047	0.0092	0.0135	45	5.5	3.3	✓	✓
MF-RG1000	16	100	10.0	17.0	0.0040	0.0071	0.0102	50	6.0	3.6	✓	✓
MF-RG1100	16	100	11.0	18.7	0.0037	0.0062	0.0089	55	7.0	3.7	✓	✓

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# MF-RG Series - PTC Resettable Fuses

# BOURNS®

## Test Procedures and Requirements

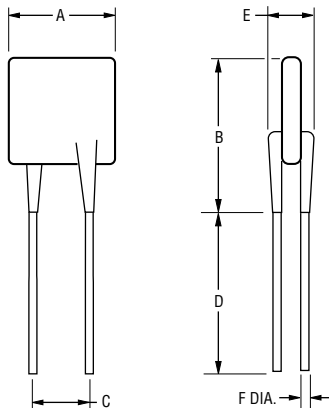
Item	Test Condition	Accept/Reject Criteria
Visual/Mechanical	Verify dimensions and materials	Per MF physical description
Resistance	In still air @ 23 °C	$R_{min} \leq R \leq R_{max}$
Time to Trip	5 times $I_{hold}$ , $V_{max}$ , 23 °C	$T \leq$ max. time to trip (seconds)
Hold Current	30 min. at $I_{hold}$	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
Solderability	245 °C $\pm$ 5 °C, 5 seconds	95 % min. coverage

## Product Dimensions

Model	A Max.	B Max.	C		D Min.	E Max.	F Nom.	Physical Characteristics	
			Nom.	Tol. $\pm$				Style	Wire Material
MF-RG300	$\frac{7.1}{(0.280)}$	$\frac{11.0}{(0.433)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG400	$\frac{9.9}{(0.390)}$	$\frac{12.8}{(0.504)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG500	$\frac{10.4}{(0.409)}$	$\frac{14.3}{(0.563)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG600	$\frac{10.7}{(0.421)}$	$\frac{17.1}{(0.673)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG650	$\frac{11.2}{(0.441)}$	$\frac{19.7}{(0.776)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG700	$\frac{11.2}{(0.441)}$	$\frac{19.7}{(0.776)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG800	$\frac{12.7}{(0.500)}$	$\frac{20.9}{(0.823)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.0}{(0.118)}$	$\frac{0.81}{(0.032)}$	1	Sn/Cu
MF-RG900	$\frac{14.0}{(0.551)}$	$\frac{21.7}{(0.854)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$ </tr				

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

### Style 1



Also available with kinked leads (see How to Order).

### How to Order

**MF - RG 300 - 0 - 14**

Multifuse® Product Designator

Series  
RG = Smaller Radial Leaded Component

Hold Current,  $I_{hold}$   
300-1100 (3.0 Amps - 11.0 Amps)

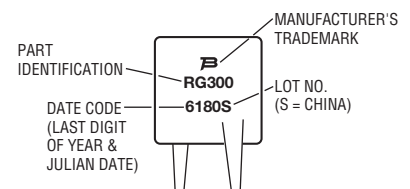
Packaging Options  
- 0 = Bulk Packaging  
- 2 = Tape and Reel\*  
- AP = Ammo-Pak\*

Part Number Suffix Option  
- \_ = Standard Straight Leads without part number suffix option  
- 14 = Kinked Leads where straight leads are standard

\*Packaged per EIA-468

### Typical Part Marking

Represents total content. Layout may vary.



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# MF-RG Series - PTC Resettable Fuses

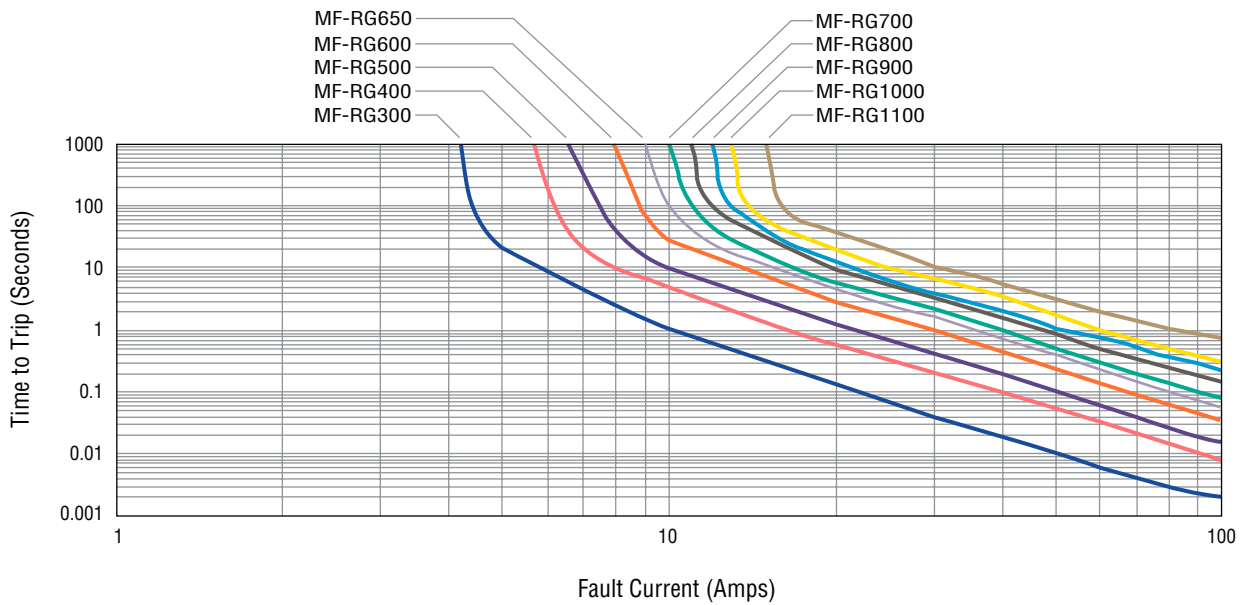


Thermal Derating Table - I<sub>hold</sub> (Amps)

Model	Ambient Operating Temperature								
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
MF-RG300	4.4	4.0	3.6	3.0	2.6	2.4	2.1	1.9	1.4
MF-RG400	5.9	5.3	4.8	4.0	3.5	3.2	2.8	2.5	1.9
MF-RG500	7.3	6.6	6.0	5.0	4.4	4.0	3.6	3.1	2.4
MF-RG600	8.8	8.0	7.2	6.0	5.2	4.8	4.2	3.8	2.8
MF-RG650	9.5	8.6	7.8	6.5	5.7	5.2	4.6	4.1	3.0
MF-RG700	10.3	9.3	8.4	7.0	6.2	5.6	5.0	4.4	3.3
MF-RG800	11.7	10.7	9.6	8.0	6.9	6.4	5.6	5.1	3.7
MF-RG900	13.2	11.9	10.7	9.0	7.9	7.2	6.4	5.6	4.2
MF-RG1000	14.7	13.3	12.0	10.0	8.7	8.0	7.0	6.3	4.7
MF-RG1100	16.1	14.6	13.1	11.0	9.7	8.8	7.8	6.9	5.2

I<sub>trip</sub> is approximately two times I<sub>hold</sub>.

Typical Time to Trip at 23 °C



Packaging Quantity

Packaging options	Models	Unit Quantity (Pcs.)	Unit
Bulk	All models	500	Bag
Tape & Reel	MF-RG300 ~ MF-RG500	3000	Reel
	MF-RG600 ~ MF-RG1100	1000	
Ammo-Pack	MF-RG300 ~ MF-RG500	2000	Pack
	MF-RG600 ~ MF-RG1100	1000	

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# MF-RG Series Tape and Reel Specifications

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Devices taped using EIA-468/IEC 60286-2 standards. See table below and figures for details.

Dimension Description	IEC Mark	EIA Mark	Dimensions	Tolerance
Carrier tape width	$W$	$W$	$\frac{18}{(.709)}$	$\frac{+1.0/-0.5}{(+.039/- .020)}$
Hold down tape width	$W_0$	$W_0$	$\frac{5}{(.197)}$	min.
Hold down tape	No protrusion			
Adhesive tape position	$W_2$	$W_2$	$\frac{3}{(.118)}$	max.
Sprocket hole position	$W_1$	$W_1$	$\frac{9}{(.354)}$	$\frac{+0.75-0.5}{(+.030/- .020)}$
Sprocket hole diameter	$D_0$	$D_0$	$\frac{4}{(.157)}$	$\frac{\pm 0.2}{(\pm .0078)}$
Height to seating plane (straight lead)	$H$	$H$	$\frac{18 \sim 20}{(.709 \sim .787)}$	
Height to seating plane (formed lead)	$H_0$	$H_0$	$\frac{16}{(.630)}$	$\frac{\pm 0.5}{(\pm .020)}$
Overall height above abscissa: MF-RG300 ~ MF-RG800	$H_1$	$H_1$	$\frac{38.5}{(1.516)}$	max.
Overall height above abscissa: MF-RG900 ~ MF-RG1100	$H_1$	$H_1$	$\frac{43.5}{(1.713)}$	max.
Cutout length		$L$	$\frac{11}{(.433)}$	max.
Sprocket hole pitch	$P_0$	$P_0$	$\frac{12.7}{(.500)}$	$\frac{\pm 0.3}{(\pm .012)}$
Device pitch: MF-RG300 ~ MF-RG500	$P$	$P$	$\frac{12.7}{(.500)}$	$\frac{\pm 0.3}{(\pm .012)}$
Device pitch: MF-RG600 ~ MF-RG1100	$P$	$P$	$\frac{25.4}{(1.00)}$	$\frac{\pm 0.6}{(\pm .024)}$
Pitch tolerance			20 consecutive	$\frac{\pm 1}{(\pm .039)}$
Composite tape thickness	$t$	$t$	$\frac{0.9}{(.035)}$	max.
Overall tape and lead thickness	$t_1$	$t_1$	$\frac{2.3}{(.091)}$	max.
Splice sprocket hole alignment			0	$\frac{\pm 0.3}{(\pm .012)}$
Front-to-back deviation	$\Delta_h$	$\Delta_h$	0	$\frac{\pm 1.0}{(\pm .039)}$
Side-to-side deviation	$\Delta_p$	$\Delta_p$	0	$\frac{\pm 1.3}{(\pm .051)}$
Ordinate to adjacent component lead	$P_1$	$P_1$	$\frac{3.81}{(.150)}$	$\frac{\pm 0.7}{(\pm .028)}$
Lead spacing	$F$	$F$	$\frac{5.08}{(.200)}$	$\frac{+0.6/-0.2}{(+.024/- .008)}$

— Continued on next page —

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

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# MF-RG Series Tape and Reel Specifications

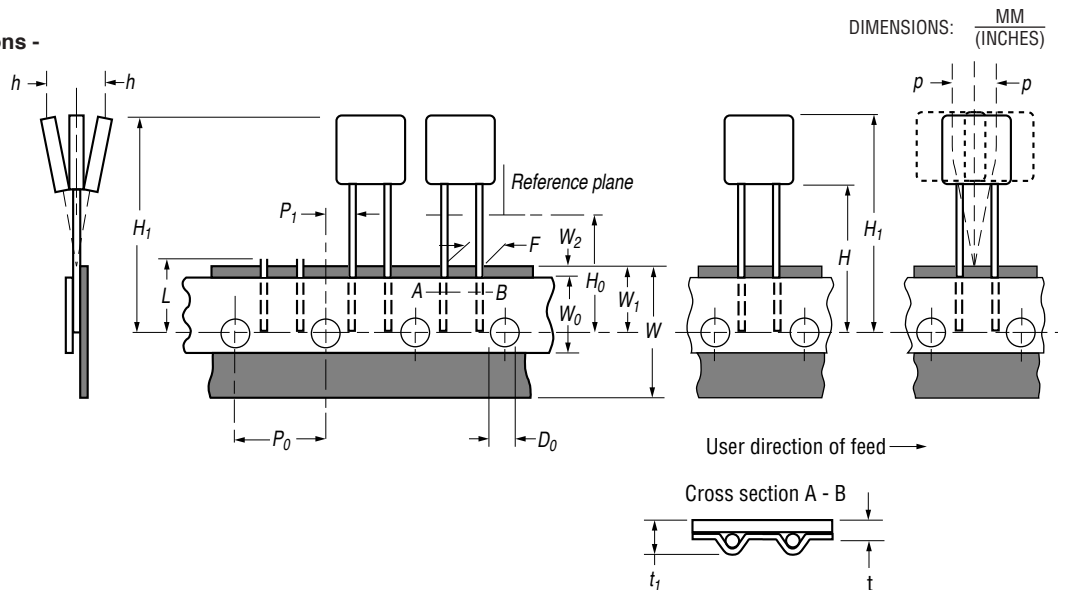
**BOURNS**<sup>®</sup>

Dimension Description	IEC Mark	EIA Mark	Dimensions	Tolerance
Reel width including flanges and hub	$W_4$	$w_2$	$\frac{62.0}{(2.44)}$	max
Dimension between flanges (measured at hub)	$W_3$	$w_1$	allow proper reeling and unreeling	
Reel diameter	A	a	$\frac{370.0}{(14.57)}$	max.
Space between flanges (at hub, excluding device)			$\frac{4.75}{(.187)}$	$\pm 3.25$ ( $\pm .128$ )
Arbor hole diameter	C	c	$\frac{26.0}{(1.024)}$	$\pm 12.0$ ( $\pm .472$ )
Core diameter	N	n	$\frac{80}{(3.15)}$	min.
Box dimensions			$\frac{62 \times 372 \times 372}{(2.44 \times 14.6 \times 14.6)}$	max.
Consecutive missing places			3	max.
Empty places per reel			Less than 0.1 %	

## Taped Component Dimensions - per EIA Mark - Figure 1

Applies to Models:

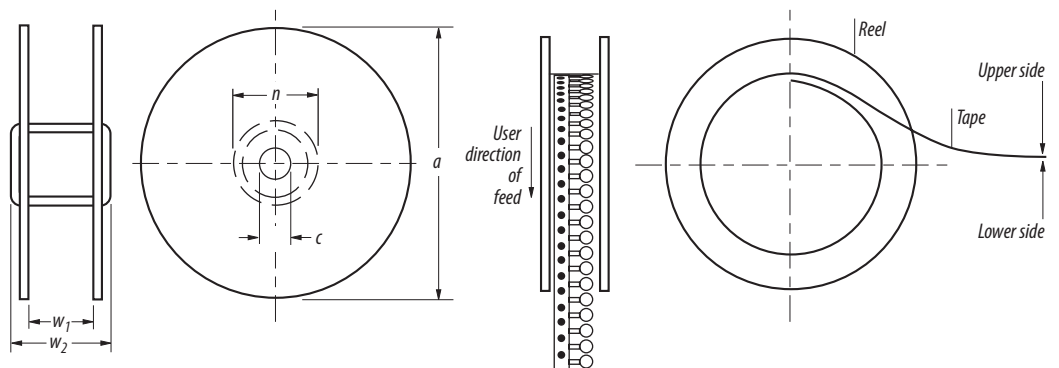
MF-RG300 ~ MF-RG1100



## Reel Dimensions - per EIA Mark - Figure 2

Applies to Models:

MF-RG300 ~ MF-RG1100



MF-RG SERIES, REV. Q, 03/22

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