



Features

- Compliant with AEC-Q200 Rev-C- Stress Test Qualification for Passive Components in Automotive Applications
- Radial leaded devices
- Smaller size for similar Ihold rating
- Faster tripping
- RoHS compliant* and halogen free**
- Agency recognition: US

Applications

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

MF-RG Series - PTC Resettable Fuses

Electrical Characteristics

| Model | V max. Volts | I max. Amps | Ihold | Itrip | Initial Resistance | | 1 Hour (R ₁) Post-Trip Resistance | Max. Time To Trip | | 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-RG300 | 16 | 100 | 3.00 | 5.10 | 0.038 | 0.065 | 0.0975 | 15 | 1.0 | 2.30 |
| MF-RG400 | 16 | 100 | 4.00 | 6.80 | 0.021 | 0.0385 | 0.0600 | 20 | 1.7 | 2.40 |
| MF-RG500 | 16 | 100 | 5.00 | 8.50 | 0.015 | 0.023 | 0.0340 | 25 | 2.0 | 2.60 |
| MF-RG600 | 16 | 100 | 6.00 | 10.20 | 0.010 | 0.0185 | 0.0280 | 30 | 3.3 | 2.8 |
| MF-RG650 | 16 | 100 | 6.50 | 11.10 | 0.0088 | 0.0158 | 0.0240 | 33 | 3.5 | 3.0 |
| MF-RG700 | 16 | 100 | 7.00 | 11.90 | 0.0077 | 0.0130 | 0.0200 | 35 | 3.5 | 3.0 |
| MF-RG800 | 16 | 100 | 8.00 | 13.60 | 0.0056 | 0.0110 | 0.0175 | 40 | 5.0 | 3.0 |
| MF-RG900 | 16 | 100 | 9.00 | 15.30 | 0.0047 | 0.0092 | 0.0135 | 45 | 5.5 | 3.3 |
| MF-RG1000 | 16 | 100 | 10.00 | 17.00 | 0.0040 | 0.0071 | 0.0102 | 50 | 6.0 | 3.6 |
| MF-RG1100 | 16 | 100 | 11.00 | 18.70 | 0.0037 | 0.0062 | 0.0089 | 55 | 7.0 | 3.7 |

Environmental Characteristics

| | | |
|------------------------------------|-----------------------------------|---------------------------------|
| Operating/Storage Temperature..... | -40 °C to +85 °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..... | -40 °C to +85 °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-RG Series

| Test | Test Conditions | Accept/Reject Criteria |
|----------------------|--------------------------------------|---------------------------------|
| Visual/Mech..... | Verify dimensions and materials..... | Per MF physical description |
| Resistance..... | In still air @ 23 °C..... | Rmin ≤ R ≤ Rmax |
| Time to Trip..... | 5 times Ihold, Vmax, 23 °C..... | T ≤ 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 |

Thermal Derating Chart - Ihold (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 | 10.3 | 9.3 | 8.4 | 7.0 | 6.2 | 5.6 | 5.0 | 4.4 | 3.3 |
| 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 |

Itrip is approximately two times Ihold.

* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

** 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. Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

MF-RG Series - PTC Resettable Fuses

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Product Dimensions

| Model | A Max. | B Max. | C | | D Min. | E Max. | F Nom. | Physical Characteristics | | |
|-----------|------------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|--------------------------|------------------------|----------|
| | | | Nom. | Tol. ± | | | | Style | Lead Dia. | 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 | $\frac{0.81}{(0.032)}$ | Sn/Cu |
| MF-RG400 | $\frac{9.9}{(0.350)}$ | $\frac{12.8}{(0.504)}$ | $\frac{5.1}{(0.201)}$ | $\frac{0.7}{(0.028)}$ | $\frac{7.6}{(0.299)}$ | $\frac{3.0}{(0.118)}$ | $\frac{0.81}{(0.032)}$ | 1 | $\frac{0.81}{(0.032)}$ | 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 | $\frac{0.81}{(0.032)}$ | 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 | $\frac{0.81}{(0.032)}$ | 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 | $\frac{0.81}{(0.032)}$ | 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 | $\frac{0.81}{(0.032)}$ | 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 | $\frac{0.81}{(0.032)}$ | Sn/Cu |
| MF-RG900 | $\frac{14.0}{(0.551)}$ | $\frac{21.7}{(0.854)}$ | $\frac{5.1}{(0.201)}$ | $\frac{0.7}{(0.028)}$ | $\frac{7.6}{(0.299)}$ | $\frac{3.0}{(0.118)}$ | $\frac{0.81}{(0.032)}$ | 1 | $\frac{0.81}{(0.032)}$ | Sn/Cu |
| MF-RG1000 | $\frac{16.5}{(0.650)}$ | $\frac{21.7}{(0.854)}$ | $\frac{5.1}{(0.201)}$ | $\frac{0.7}{(0.028)}$ | $\frac{7.6}{(0.299)}$ | $\frac{3.0}{(0.118)}$ | $\frac{0.81}{(0.032)}$ | 1 | $\frac{0.81}{(0.032)}$ | Sn/Cu |
| MF-RG1100 | $\frac{17.5}{(0.689)}$ | $\frac{26.0}{(1.024)}$ | $\frac{5.1}{(0.201)}$ | $\frac{0.7}{(0.028)}$ | $\frac{7.6}{(0.299)}$ | $\frac{3.0}{(0.118)}$ | $\frac{0.81}{(0.032)}$ | 1 | $\frac{0.81}{(0.032)}$ | Sn/Cu |

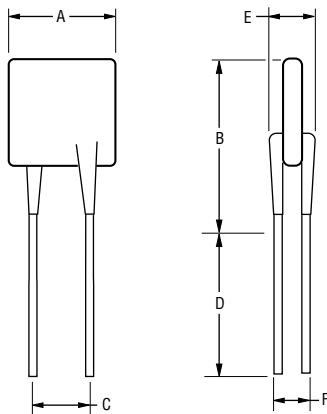
Packaging options:

BULK: MF-RG300~MF-RG1100 = 500 pcs. per bag.

TAPE & REEL: MF-RG300~MF-RG500 = 3000 pcs. per reel; MF-RG600~MF-RG1100 = 1000 pcs. per reel.

AMMO-PACK: MF-RG300~MF-RG500 = 2000 pcs. per reel; MF-RG600~MF-RG1100 = 1000 pcs. per reel.

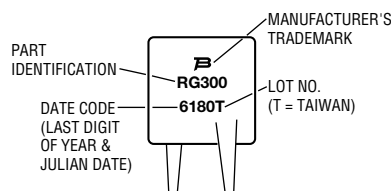
0.81 (20AWG) DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$



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

Typical Part Marking

Represents total content. Layout may vary.



How to Order

MF - RG 300 - 0 - 14

Multifuse® Product Designator _____
 Series _____
 RG = Smaller Radial Ledged 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 in Place of Standard Straight Leads

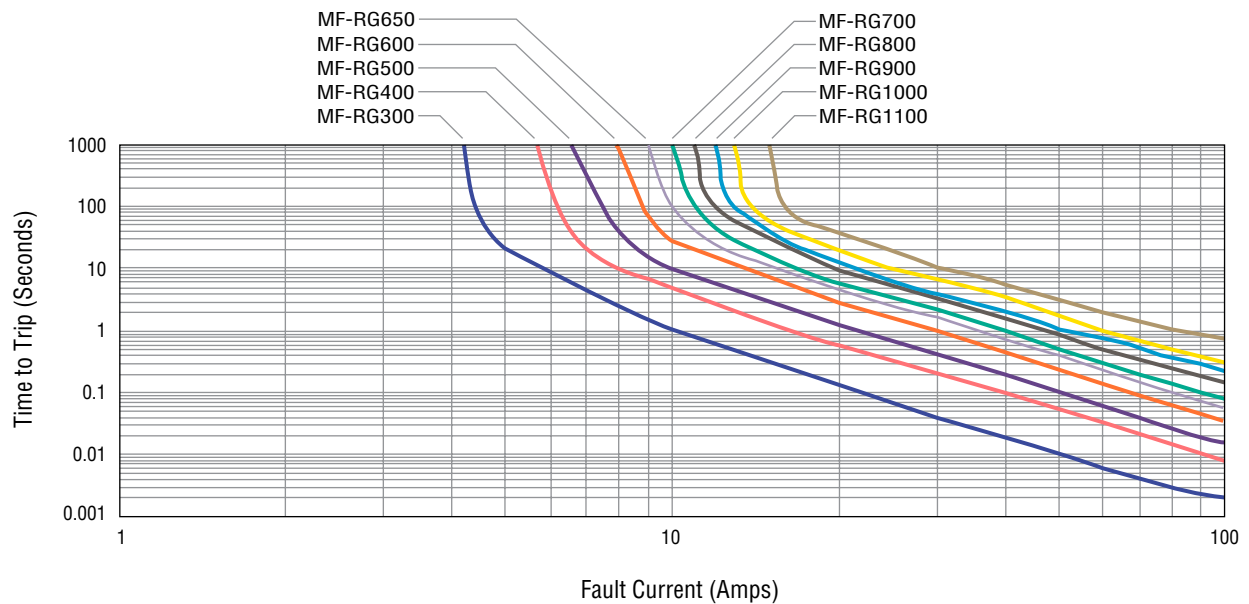
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MF-RG Series - PTC Resettable Fuses

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Typical Time to Trip at 23 °C



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MF-RG Series Tape and Reel Specifications

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Devices taped using EIA468–B/IEC60286-2 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_4 | $\frac{11}{(.433)}$ | min. |
| Hold down tape | W_0 | | 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 | I_1 | L_1 | $\frac{1.0}{(.039)}$ | max. |
| Protrusion of cutout | L | L | $\frac{11}{(.433)}$ | max. |
| Protrusion beyond hold-down tape | I_2 | I_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 | | | $\frac{25.4}{(1.000)}$ | $\frac{\pm 0.3}{(\pm .012)}$ |
| Tape thickness | t | t | $\frac{0.9}{(.035)}$ | max. |
| Tape thickness with splice | | t_1 | $\frac{2.0}{(.079)}$ | max. |
| Splice sprocket hole alignment | | | $\frac{4.0}{(.157)}$ | $\frac{\pm 0.2}{(\pm .008)}$ |
| Body lateral deviation | Δ_h | Δ_h | 0 | $\frac{\pm 1}{(\pm .039)}$ |
| Body tape plane deviation | Δ_p | Δ_p | 0 | $\frac{\pm 1.3}{(\pm .051)}$ |
| Lead seating plane deviation | ΔP_1 | P_1 | $\frac{3.81}{(.015)}$ | $\frac{\pm 0.7}{(\pm .028)}$ |
| Lead spacing | F | F | $\frac{5.08}{(.200)}$ | $\frac{-0.2/+0.8}{(.008/+0.031)}$ |
| Reel width | w | w | $\frac{56.0}{(2.20)}$ | max. |
| Reel diameter | d | a | $\frac{370.0}{(14.57)}$ | max. |
| Space between flanges less device | | | $\frac{4.75}{(.187)}$ | $\frac{\pm 3.25}{(\pm .128)}$ |

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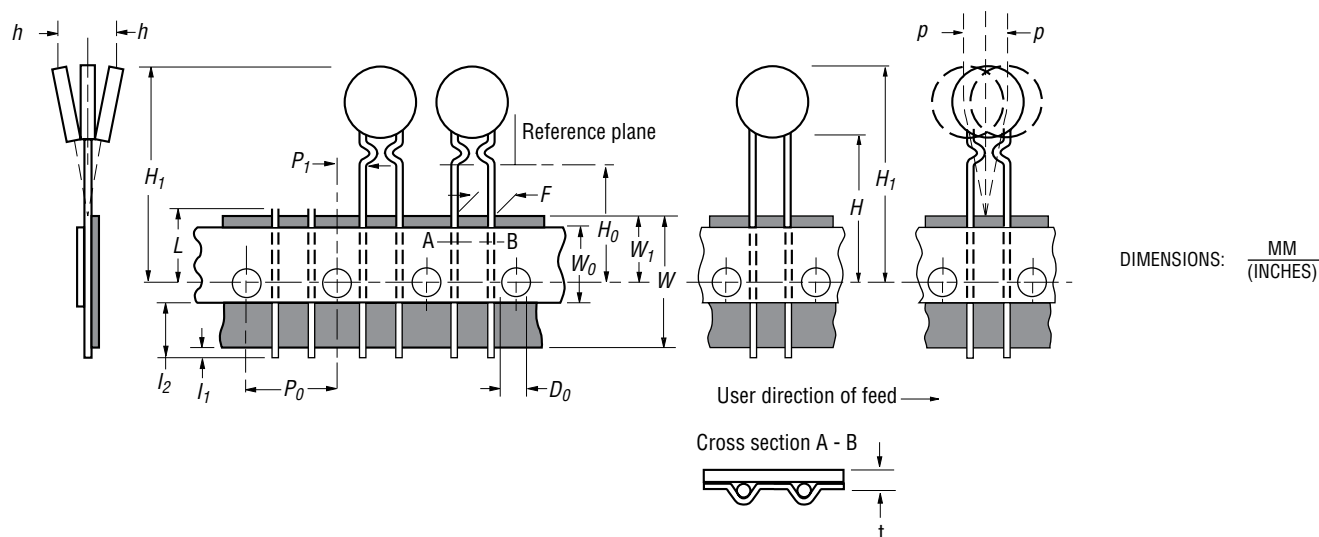
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

MF-RG Series Tape and Reel Specifications

BOURNS®

| Dimension Description | IEC Mark | EIA Mark | Dimensions | |
|----------------------------|----------|----------|---|-------------------------------|
| | | | Dimensions | Tolerance |
| Arbor hole diameter | <i>f</i> | <i>c</i> | $\frac{26.0}{(1.02)}$ | $\frac{\pm 12.0}{(\pm .472)}$ |
| Core diameter | <i>h</i> | <i>n</i> | $\frac{80.0}{(3.15)}$ | max. |
| Box | | | $\frac{64}{(2.50)}$ $\frac{372}{(14.6)}$ $\frac{372}{(14.6)}$ | nom. |
| Consecutive missing places | | | 3 | max. |
| Empty places per reel | | | Not specified | |

Taped Component Dimensions - Figure 1



Reel Dimensions - Figure 2

