



Features

- Radial leaded devices
- Smaller size for similar Ihold rating
- Faster tripping
- RoHS compliant*

Applications

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

MF-RG Series - PTC Resettable Fuses

Electrical Characteristics

| Model | V max. Volts | I max. Amps | I _{hold} | I _{trip} | 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-RG500 | 16 | 100 | 5.00 | 8.50 | 0.015 | 0.023 | 0.0340 | 25 | 2.0 | 2.60 |

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 | -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..... | R _{min} ≤ R ≤ R _{max} |
| Time to Trip..... | 5 times I _{hold} , V _{max} , 23 °C..... | T ≤ 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 |

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-RG300 | 4.4 | 4.0 | 3.6 | 3.0 | 2.6 | 2.4 | 2.1 | 1.9 | 1.4 |
| MF-RG500 | 7.3 | 6.6 | 6.0 | 5.0 | 4.4 | 4.0 | 3.6 | 3.1 | 2.4 |

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

MF-RG Series - PTC Resettable Fuses

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Product Dimensions

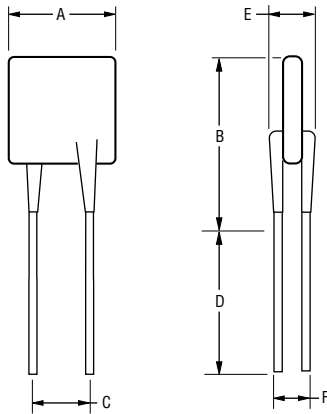
| Model | A Max. | B Max. | C | | D Min. | E Max. | F Nom. | Physical Characteristics | | |
|----------|-----------------|-----------------|----------------|----------------|----------------|----------------|-----------------|--------------------------|-----------------|----------|
| | | | Nom. | Tol. ± | | | | Style | Lead Dia. | Material |
| MF-RG300 | 7.1 (0.280) | 11.0 (0.433) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 0.81 (0.032) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RG500 | 10.4 (0.409) | 14.3 (0.563) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.0 (0.118) | 0.81 (0.032) | 1 | 0.81 (0.032) | Sn/Cu |

Packaging options:

BULK: 500 pcs. per bag. TAPE & REEL: 3000 pcs. per reel. AMMO-PACK: 2000 pcs. per reel.

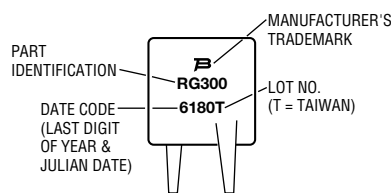
0.81 (20AWG)

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

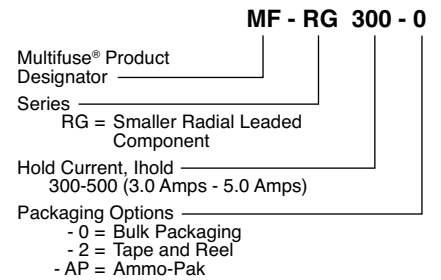


Typical Part Marking

Represents total content. Layout may vary.

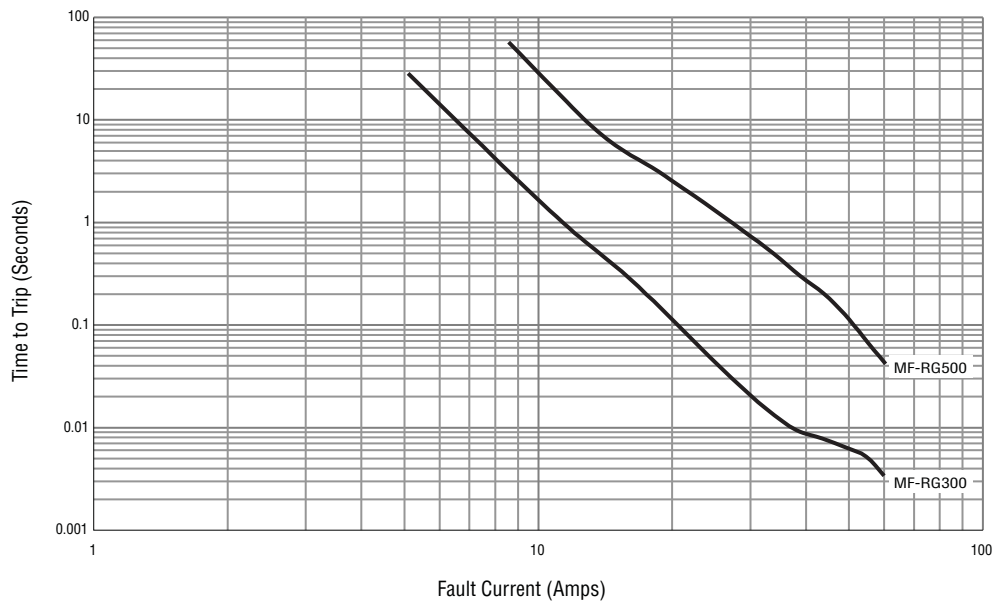


How to Order



NOTE: Kinked leads are available for board standoff options. Contact factory for details.

Typical Time to Trip at 23 °C



MF-RG SERIES, REV. F, 05/12

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

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 | <i>W</i> | <i>W</i> | $\frac{18}{(.709)}$ | $\frac{-0.5/+1.0}{(-0.02/+0.039)}$ |
| Hold down tape width: all others | | <i>W4</i> | $\frac{11}{(.433)}$ | min. |
| 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> | $\frac{4}{(.157)}$ | $\frac{\pm 0.2}{(\pm .0078)}$ |
| Abscissa to plane (straight lead) | <i>H</i> | <i>H</i> | $\frac{18.5}{(.728)}$ | $\frac{\pm 3.0}{(\pm .118)}$ |
| Abscissa to plane (kinked lead) | <i>H0</i> | <i>H0</i> | $\frac{16}{(.63)}$ | $\frac{\pm 0.5}{(\pm .02)}$ |
| Abscissa to top (straight lead) | <i>H1</i> | <i>H1</i> | $\frac{38.0}{(1.496)}$ | max. |
| Abscissa to top (kinked lead) | <i>H1</i> | <i>H1</i> | $\frac{32.2}{(1.268)}$ | max. |
| Overall width w/lead protrusion (straight lead) | | <i>C1</i> | $\frac{55.0}{(2.165)}$ | max. |
| Overall width w/lead protrusion (kinked lead) | | <i>C1</i> | $\frac{43.2}{(1.7)}$ | max. |
| Overall width w/o lead protrusion (straight lead) | | <i>C2</i> | $\frac{54.0}{(2.126)}$ | max. |
| Overall width w/o lead protrusion (kinked lead) | | <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-down 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 | $\frac{\pm 1}{(\pm .039)}$ |
| Device pitch: | | | $\frac{12.7}{(0.5)}$ | |
| 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 | | | $\frac{4.0}{(.157)}$ | $\frac{\pm 0.2}{(\pm .008)}$ |
| Body lateral deviation | Δh | Δh | 0 | $\frac{\pm 1}{(\pm .039)}$ |
| Body tape plane deviation | Δp | Δp | 0 | $\frac{\pm 0.3}{(\pm .051)}$ |
| Lead seating plane deviation | $\Delta P1$ | <i>P1</i> | $\frac{3.81}{(.015)}$ | $\frac{\pm 0.7}{(\pm .028)}$ |
| Lead spacing: | <i>F</i> | <i>F</i> | $\frac{8.0}{(.1315)}$ | |
| Reel width | <i>w</i> | <i>w</i> | $\frac{56.0}{(2.20)}$ | max. |
| Reel diameter | <i>d</i> | <i>a</i> | $\frac{370.0}{(14.57)}$ | max. |
| Space between flanges less device | | | $\frac{4.75}{(.187)}$ | $\frac{\pm 3.25}{(\pm .128)}$ |

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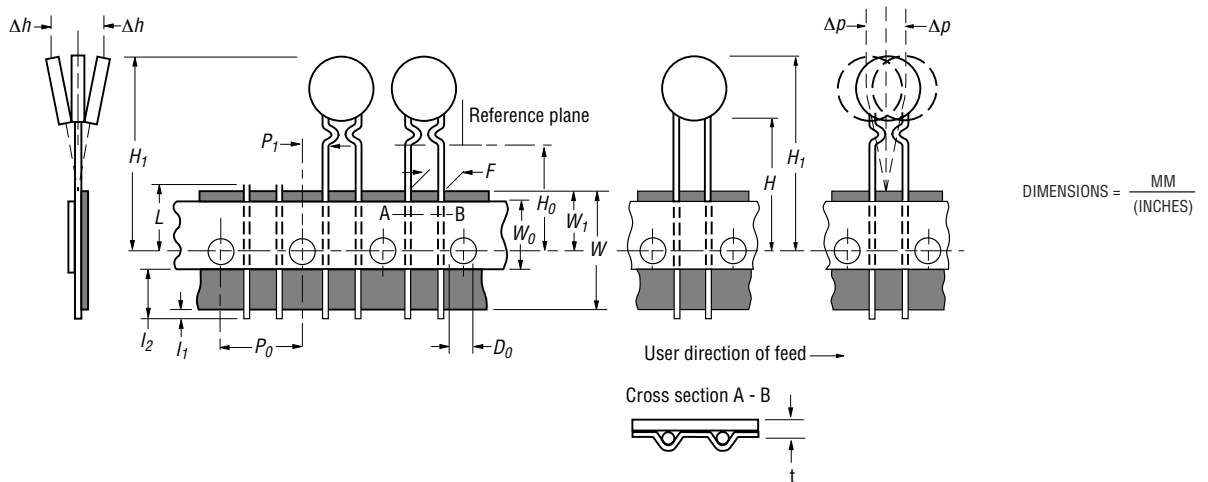
DIMENSIONS = $\frac{\text{MM}}{\text{(INCHES)}}$

MF-RG Series Tape and Reel Specifications

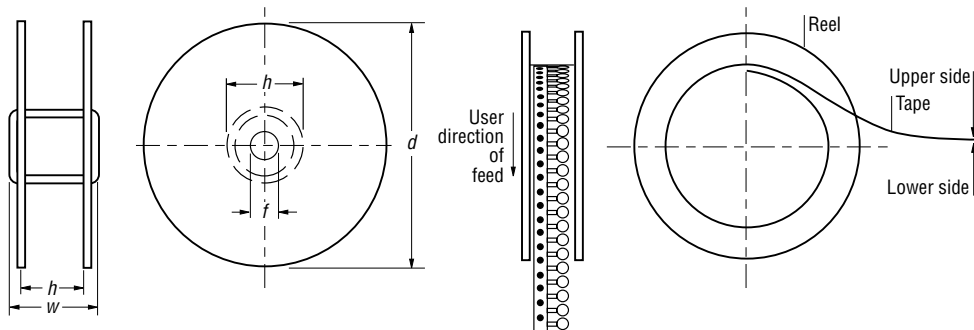
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| Dimension Description | IEC Mark | EIA Mark | Dimensions | |
|----------------------------|----------|----------|--|-------------------------------|
| | | | Dimensions | Tolerance |
| Arbor hole diameter | <i>f</i> | <i>c</i> | $\frac{26.0}{(1.02)}$ | $\frac{\pm 12.0}{(\pm .472)}$ |
| Core diameter | <i>h</i> | <i>n</i> | $\frac{80.0}{(3.15)}$ | max. |
| Box | | | $\frac{64}{(2.52)}$ $\frac{372}{(14.6)}$ $\frac{362}{(14.25)}$ | max. |
| Consecutive missing places | | | 3 | max. |
| Empty places per reel | | | Not specified | |

Taped Component Dimensions - Figure 1



Reel Dimensions - Figure 2





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