

### 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\*\*

MF-RG Series - PTC Resettable Fuses

Agency recognition: c Sus

### Applications

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

### **Electrical Characteristics**

Model V max. Volts	V max	. I max. Amps	Ihold	I <sub>trip</sub>	Init Resis		1 Hour (R <sub>1</sub> ) Post-Trip Resistance	Max. Time To Trip		Tripped Power Dissipation
	Volts		Amperes at 23 °C		Ohms at 23 °C		Ohms at 23 °C	Amperes Seconds at 23 °C at 23 °C		Watts at 23 °C
			Hold	Trip	Min.	Max.	Max.			Тур.
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	-
Moisture Sensitivity Level (MSL)	Level 1	
ESD Classification - HBM	Class 6	
Humidity Aging Thermal Shock Solvent Resistance Vibration Moisture Sensitivity Level (MSL)	+85 °C, 85 % R.H. 1000 hours 40 °C to +85 °C, 10 times MIL-STD-202, Method 215 MIL-STD-883C, Method 2007.1, Condition A Level 1	. ±5 % typical resistance change . ±10 % typical resistance change . No change

#### 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	$Rmin \le R \le Rmax$
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.

Users should verify actual device performance in their specific applications.

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## **MF-RG Series - PTC Resettable Fuses**

## BOURN

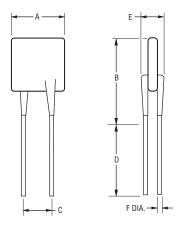
#### **Product Dimensions**

Model	A Max.	B Max.	с		D Min.	E Max.	F Nom.	Physical Characteristics	
	IVIAX.	iviax.	Nom.	Tol. ±		Iviax.	NOIII.	Style	Material
MF-RG300	<u>7.1</u> (0.280)	<u>11.0</u> (0.433)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	<u>7.6</u> (0.299)	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG400	<u>9.9</u> (0.350)	<u>12.8</u> (0.504)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	<u>7.6</u> (0.299)	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG500	<u>10.4</u> (0.409)	<u>14.3</u> (0.563)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	<u>7.6</u> (0.299)	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG600	<u>10.7</u> (0.421)	<u>17.1</u> (0.673)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	<u>7.6</u> (0.299)	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG650	<u>11.2</u> (0.441)	<u>19.7</u> (0.776)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	$\frac{7.6}{(0.299)}$	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG700	<u>11.2</u> (0.441)	<u>19.7</u> (0.776)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	<u>7.6</u> (0.299)	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG800	<u>12.7</u> (0.500)	<u>20.9</u> (0.823)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	$\frac{7.6}{(0.299)}$	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG900	<u>14.0</u> (0.551)	<u>21.7</u> (0.854)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	$\frac{7.6}{(0.299)}$	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG1000	<u>16.5</u> (0.650)	<u>21.7</u> (0.854)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	$\frac{7.6}{(0.299)}$	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu
MF-RG1100	<u>17.5</u> (0.689)	<u>26.0</u> (1.024)	<u>5.1</u> (0.201)	<u>0.7</u> (0.028)	7.6 (0.299)	<u>3.0</u> (0.118)	<u>0.81</u> (0.032)	1	Sn/Cu

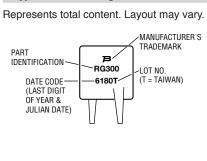
Packaging options:

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.



### **Typical Part Marking**



How to Order
MF - RG 300 - 0 - 14
Multifuse® Product Designator
Series RG = Smaller Radial Leaded Component
Hold Current, I <sub>hold</sub> 300-1100 (3.0 Amps - 11.0 Amps)
Packaging Options
Part Number Suffix Option

0.81 (20AWG)

1. 0

11....

MM

(INCHES)

DIMENSIONS:

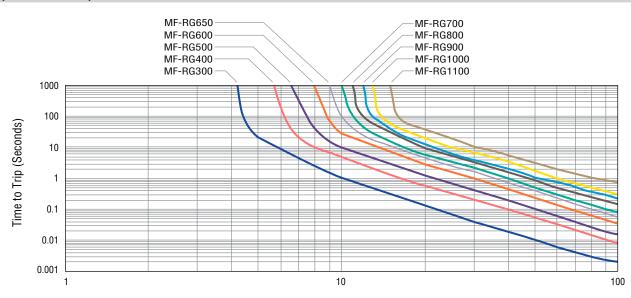
Also available with kinked leads (see How to Order).

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## **MF-RG Series - PTC Resettable Fuses**

### BOURNS

Typical Time to Trip at 23 °C



Fault Current (Amps)

## BOURNS®

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# **MF-RG Series Tape and Reel Specifications**

## BOURNS

Devices taped using EIA468-B/IEC60286-2 standards. See table below and Figures 1 and 2 for details.

arrier tape width       W       W $\begin{pmatrix} 10 \\ (709) \\ (709) \\ (709) \\ (0024,039) \\ (002$	Dimension Description	IEC Mark	EIA Mark	Dime Dimensions	ensions Tolerance
bid down tape width $W_4$ $\frac{11}{(433)}$ min.         bid down tape $W_0$ No protrusion         pp distance between tape edges $W_2$ $W_6$ $\frac{3}{(118)}$ max.         procket hole position $W_1$ $W_5$ $\frac{9}{(354)}$ $\frac{-0.540}{(-0.2240.03)}$ procket hole diameter $D_0$ $D_0$ $\frac{4}{(157)}$ $\frac{40.2}{(4.0078)}$ becissa to plane (straight lead) $H$ $H$ $11$ $\frac{40.2}{(126)}$ $\frac{4.11}{(4.02)}$ becissa to top (straight lead) $H_0$ $H_0$ $T_6$ $\frac{40.2}{(16.078)}$ $\frac{40.2}{(16.078)}$ becissa to top (straight lead) $H_1$ $H_1$ $H_1$ $\frac{9}{(16.0216)}$ $max.$ verall width wike protrusion (straight lead) $C_1$ $\frac{55.0}{(16.039)}$ $max.$ veral width wike lad protrusion (kinked lead) $C_1$ $\frac{11}{(17.1)}$ $max.$ veral width wike lad protrusion (kinked lead) $C_2$ $\frac{42.5}{(14.031)}$ $max.$ veral width wike lad protrusion (kinked lead) $C_1$ $\frac{11}{(17.03)}$ $max.$ rotrusion $I_1$ $I_1$ $I_1$ $I_1$	Carrier tape width			18	-0.5/+1.0
bill down tape $W_0$ No protuision         op distance between tape edges $W_2$ $W_6$ $\frac{3}{(118)}$ max.         procket hole position $W_1$ $W_5$ $\frac{9}{(254)}$ $\frac{-0.5470.75}{(40078)}$ procket hole diameter $D_0$ $D_0$ $\frac{4}{(157)}$ $\frac{4.02}{(40078)}$ bacissa to plane (straight lead) $H$ $H$ $H_1$ $H_1$ $H_1$ bscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $H_1$ $H_1$ bscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $H_1$ $H_1$ $H_2$ $H_2$ max.         bscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $H_1$ $H_1$ $H_2$ $H_2$ max.         verall width wile al protrusion (straight lead) $C_1$ $\frac{55.0}{(1673)}$ max.         verall width wo lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1673)}$ max.         verall width wo lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1673)}$ max.         rotrusion otoutot $L$ $L$ $L$ $\frac{11}{(1039)}$ max.         rotru	Hold down tape width		W4		
pp distance between tape edges $W_2$ $W_q$ $(118)$ max.         procket hole position $W_1$ $W_5$ $\frac{9}{(354)}$ $(0.024+0.02)$ procket hole diameter $D_0$ $D_0$ $(157)$ $(e.0078)$ becissa to plane (straight lead) $H_0$ $H_0$ $(16)$ $e.05$ becissa to plane (kinked lead) $H_0$ $H_0$ $(16)$ $e.05$ becissa to top (kinked lead) $H_1$ $H_1$ $38.0$ max.         becissa to top (kinked lead) $H_1$ $H_1$ $32.2$ max.         verall width wide aprotrusion (straight lead) $C_1$ $(2.166)$ max.         verall width wide ap rotrusion (straight lead) $C_2$ $(54.0)$ max.         verall width wide ap rotrusion (kinked lead) $C_2$ $(2.166)$ max.         verall width wide lead protrusion (kinked lead) $C_2$ $(1.073)$ max.         verall width wole ad protrusion (kinked lead) $C_2$ $(1.073)$ max.         verall width wole ad protrusion (kinked lead) $C_2$ $(2.54)$ $0.0$ verall width wole lead protrusion (kinked lead) $C_2$	Hold down tape	W <sub>0</sub>			
wr the position $W_1$ $W_5$ $\frac{9}{(354)}$ $\frac{-0.5/40.75}{(0.0740.03)}$ procket hole diameter $D_0$ $D_0$ $\frac{4}{(157)}$ $\frac{4.02}{(4.0078)}$ bacissa to plane (straight lead) $H$ $H$ $H$ $\frac{15.5}{(7.28)}$ $\frac{4.30}{(4.18)}$ bacissa to plane (kinked lead) $H_0$ $H_0$ $\frac{16}{(63)}$ $\frac{4.02}{(4.02)}$ bacissa to plane (kinked lead) $H_1$ bacissa to top (kinked lead) $H_1$ $H_1$ $H_1$ $H_1$ $H_1$ werall width w/lead protrusion (straight lead) $C_1$ $\frac{55.0}{(2.165)}$ max.werall width w/lead protrusion (straight lead) $C_2$ $\frac{64.2}{(2.126)}$ max.verall width w/lead protrusion (kinked lead) $I_1$ $I_1$ $I_{(03)}$ max.rotrusion of cutout $L$ $L$ $I_{(1673)}$ max.verall width w/lead protrusion (kinked lead) $I_2$ $I_2$ max.verall width w/lead protrusion (kinked lead) $I_2$ $I_2$ max.verall width w/lead protrusion (kinked lead) $I_1$ $I_1$ $I_{(03)}$ max.verall width w/lead protrusion (kinked lead) $I_1$ $I_1$ $I_1$ $I_2$ verall width w/lead protrusion (kinked lead) $I_1$ $I_1$ $I_1$ $I_2$ verall width w/lead protrusion (kinked lead) $I_1$ $I_1$ $I_2$ $I_2$ verall width w/lead protrusion $I_1$ $I_1$	Top distance between tape edges	W2	W <sub>6</sub>		max.
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Sprocket hole position	W1	W5	9	
becissa to plane (straight lead) H H H $\frac{18.5}{(278)}$ $\frac{43.0}{(2118)}$ becissa to plane (kinked lead) H <sub>0</sub> H <sub>0</sub> H <sub>0</sub> $\frac{16}{(63)}$ $\frac{40.5}{(4.02)}$ becissa to top (straight lead) H <sub>1</sub> H <sub>1</sub> H <sub>1</sub> $\frac{38.0}{(1.496)}$ max. becissa to top (kinked lead) H <sub>1</sub> H <sub>1</sub> H <sub>1</sub> $\frac{38.0}{(1.496)}$ max. becissa to top (kinked lead) H <sub>1</sub> H <sub>1</sub> H <sub>1</sub> $\frac{32.2}{(1.265)}$ max. verall width wilead protrusion (straight lead) C <sub>1</sub> $\frac{43.2}{(2.165)}$ max. verall width wilead protrusion (straight lead) C <sub>2</sub> $\frac{43.2}{(1.67)}$ max. verall width wilead protrusion (straight lead) C <sub>2</sub> $\frac{42.5}{(1.673)}$ max. verall width wilead protrusion (straight lead) C <sub>2</sub> $\frac{42.5}{(1.673)}$ max. rotrusion (straight lead) C <sub>2</sub> $\frac{42.5}{(1.673)}$ max. rotrusion foutout L L $\frac{1}{(.439)}$ max. rotrusion of outout L L $\frac{1}{(.439)}$ max. rotrusion of outout L L $\frac{1}{(.439)}$ max. rotrusion beyond hold-down tape $\frac{22}{(1.65)}$ kospecified $\frac{25.4}{(1.603)}$ $\frac{40.3}{(2.102)}$ the holerance $\frac{20 consecutive}{(\frac{4.03}{(2.102)})}$ max. ape thickness it t $\frac{0.99}{(0.55)}$ max. $\frac{40.3}{(1.000)}$ $\frac{4.02}{(2.102)}$ max. $\frac{40.2}{(1.57)}$ $\frac{40.2}{(2.039)}$ procket hole alignment $\frac{4.0}{(1.507)}$ $\frac{4.02}{(2.039)}$ ape thickness with splice $\frac{4.1}{(2.009)}$ $\frac{2.7}{(0.55)}$ max. $\frac{4.0}{(1.57)}$ $\frac{4.02}{(2.009)}$ ody tateral deviation $\Delta_P$ $\Delta_P$ $0$ $\frac{4.1.3}{(2.009)}$ $\frac{2.5}{(0.008)}$ $\frac{-2.7}{(0.051)}$ $\frac{4.02}{(2.021)}$ ead seating plane deviation $\Delta_P$ $\Delta_P$ $0$ $\frac{4.1.3}{(2.009)}$ $\frac{2.5}{(0.008)}$ $\frac{-2.7}{(0.051)}$ $\frac{2.5}{(0.008)}$ $\frac{2.5}{(0.008)}$ $\frac{2.7}{(0.008)}$ $\frac{2.5}{(0.008)}$ 2.	Sprocket hole diameter	D <sub>0</sub>	D <sub>0</sub>	4	±0.2
becissa to plane (kinked lead) Ho Ho Ho $\frac{16}{(83)}$ $\frac{40.5}{(4.02)}$ becissa to to (straight lead) Hr Hr Hr $\frac{38.0}{(1.496)}$ max. becissa to to (kinked lead) Hr Hr Hr $\frac{38.0}{(1.496)}$ max. becissa to to (kinked lead) Hr Hr $\frac{1}{(1.288)}$ max. Verall width whead protrusion (straight lead) Cr $\frac{43.2}{(1.7)}$ max. verall width whead protrusion (straight lead) Cr $\frac{43.2}{(1.7)}$ max. verall width whead protrusion (straight lead) Cr $\frac{43.2}{(1.7)}$ max. verall width whead protrusion (straight lead) Cr $\frac{1.0}{(2.185)}$ max. rotrusion (straight lead) Cr $\frac{1.0}{(2.185)}$ max. rotrusion of cutout L L $\frac{1.0}{(1.399)}$ max. rotrusion beyond hold-down tape Ir Q Ir $\frac{1.0}{(0.399)}$ max. rotrusion beyond hold-down tape Ir Q Consecutive $\frac{\pm 1}{(\pm 0.039)}$ revice pitch Procket hole pitch Proteck thole pitch Proteck thole alignment $\frac{25.4}{(1.603)}$ max. $\frac{4.0}{(\pm 0.039)}$ max. 4.	Abscissa to plane (straight lead)	Н	Н	18.5	±3.0
becises to top (straight lead) $H_1$ $H_1$ $(\frac{1380}{(1.496)}$ max. becises to top (kinked lead) $H_1$ $H_1$ $(\frac{32.2}{(1.269)}$ max. verall width w/lead protrusion (straight lead) $C_1$ $(\frac{43.2}{(1.17)}$ max. verall width w/lead protrusion (kinked lead) $C_1$ $(\frac{43.2}{(1.77)}$ max. verall width w/lead protrusion (kinked lead) $C_2$ $(\frac{2.10}{(1.673)}$ max. verall width w/lead protrusion (kinked lead) $C_2$ $(\frac{42.5}{(1.673)}$ max. verall width w/lead protrusion (kinked lead) $C_2$ $(\frac{42.5}{(1.673)}$ max. rotrusion of cutout $L$ $L$ $(\frac{11}{(.433)}$ max. rotrusion of cutout $L$ $L$ $(\frac{11}{(.433)}$ max. rotrusion beyond hold-down tape $I_2$ $I_2$ Not specified procket hole pitch $P_0$ $P_0$ $(\frac{12.7}{(0.5)}$ $(\frac{4.03}{(4.012)})$ ape thickness $t$ $t$ $t$ $\frac{0.9}{(0.055)}$ max. pilce sprocket hole alignment $(\frac{4.0}{(.177)}$ max. $\frac{4.0}{(.1679)}$ max. $\frac{4.0}{(.1679)}$ $\frac{4.0.3}{(4.012)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(4.051)}$ $\frac{4.0.7}{(4.208)}$ max. $\frac{4.0}{(.0008+0.31)}$ $\frac{-4.0.3}{(4.0051)}$ $\frac{1.1}{(4.457)}$ max. $\frac{1.1}{(.1000)}$ $\frac{1.1}{(.2001)}$ $\frac{-2.0.3}{(.2001)}$ $-2.0$	Abscissa to plane (kinked lead)	H <sub>0</sub>	H <sub>0</sub>	16	±0.5
becissa to top (kinked lead) $H_1$ $H_1$ $\frac{32.2}{(1.269)}$ max. verall width w/lead protrusion (straight lead) $C_1$ $\frac{55.0}{(2.165)}$ max. werall width w/lead protrusion (kinked lead) $C_1$ $\frac{43.2}{(1.7)}$ max. werall width w/lead protrusion (kinked lead) $C_2$ $\frac{54.0}{(1.673)}$ max. werall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max. werall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max. werall width w/lead protrusion (kinked lead) $L$ $L$ $\frac{11}{(1.433)}$ max. rotrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max. rotrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max. rotrusion beyond hold-down tape $I_2$ $I_2$ Not specified procket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{4.0.3}{(4.012)}$ the tolerance $20$ consecutive $\frac{41}{(4.039)}$ max. per hickness with splice $t$ $t$ $\frac{0.9}{(0.79)}$ max. pilce sprocket hole alignment $\frac{40.0}{(1.57)}$ $\frac{40.2}{(4.051)}$ ead seating plane deviation $\Delta_P$ $\Delta_P$ $0$ $\frac{4.1.3}{(0.015)}$ $\frac{40.7}{(0.050)}$ max. ead seating plane deviation $\Delta_P$ $P_1$ $\frac{3.811}{(0.015)}$ $\frac{40.7}{(0.020)}$ max. ead spacing $F$ $F$ $\frac{5.08}{(220)}$ max. ead spacing $F$ $F$ $\frac{5.08}{(220)}$ max. ead spacing $F$ $F$ $\frac{5.08}{(220)}$ max. ead spacing $A_P$	Abscissa to top (straight lead)	H <sub>1</sub>	H <sub>1</sub>	38.0	
verall width w/lead protrusion (straight lead) $C_1$ $\frac{55.0}{(2.165)}$ max.verall width w/lead protrusion (kinked lead) $C_1$ $\frac{43.2}{(1.7)}$ max.verall width w/lead protrusion (straight lead) $C_2$ $\frac{54.0}{(2.126)}$ max.verall width w/lead protrusion (straight lead) $C_2$ $\frac{42.5}{(1.673)}$ max.verall width w/lead protrusion (straight lead) $C_2$ $\frac{42.5}{(1.673)}$ max.verall width w/lead protrusion (straight lead) $l_1$ $L_1$ $\frac{10}{(.039)}$ max.ead protrusion of cutout $L$ $L$ $\frac{11}{(.433)}$ max.rotrusion of cutout $L$ $L$ $\frac{11}{(.433)}$ max.rotrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{±0.3}{(\pm 0.12)}$ evice pitch $\frac{25.4}{(1.679)}$ $\frac{±0.3}{(2.5)}$ max.ape thickness with splice $t$ $t$ $\frac{0.9}{(0.35)}$ max.plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{±0.2}{(\pm 0.08)}$ $\frac{4.1}{(\pm 0.039)}$ ody tape plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(0.05)}$ $\frac{4.0.7}{(\pm 0.05)}$ eed spacing $F$ $F$ $5.08$ $-0.2/40.8$ eed uidth $w$ $w$ $\frac{56.0}{(2.20)}$ max.eed idiameter $d$ $a$ $\frac{370.0}{(.006/+0.31)}$ max.oot pathwean flagond has during $4.75$ $\pm 3.25$	Abscissa to top (kinked lead)	H <sub>1</sub>	H <sub>1</sub>	32.2	max.
verall width w/lead protrusion (kinked lead) $C_1$ $\frac{43.2}{(1.7)}$ max.werall width w/o lead protrusion (straight lead) $C_2$ $\frac{54.0}{(2.126)}$ max.werall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.ead protrusion $I_1$ $L_1$ $\frac{1.0}{(0.09)}$ max.rotrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max.rotrusion beyond hold-down tape $I_2$ $I_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ evice pitch $\frac{25.4}{(1.000)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ max.ape thickness $t$ $t$ $0.9$ max.ape thickness $t$ $t$ $0.9$ max.plice sprocket hole alignment $\frac{4.0}{(1.079)}$ max. $\frac{4.0.3}{(\pm 0.03)}$ ody tape plane deviation $\Delta_P$ $\Delta_P$ $0$ $\frac{\pm 1.3}{(\pm 0.03)}$ ead seating plane deviation $\Delta_P_1$ $P_1$ $\frac{3.81}{(0.15)}$ $\frac{40.7}{(\pm 0.02)}$ eed spacing $F$ $F$ $5.08$ $-0.2/t0.8$ eed diameter $d$ $a$ $\frac{370.0}{(14.57)}$ max.eed between flagges lace during $d$ $a$ $\frac{370.0}{(14.57)}$ max.	Overall width w/lead protrusion (straight lead)		C1	55.0	max.
verall width w/o lead protrusion (straight lead) $C_2$ $\frac{54.0}{(2.126)}$ ( $2.126)$ max.verall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ ( $1.73$ )max.ead protrusion $l_1$ $L_1$ $\frac{1.0}{(0.39)}$ ( $1.433$ )max.rotrusion of cutout $L$ $L$ $\frac{1}{(1.433)}$ ( $1.433$ )max.rotrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ ( $\pm 0.12$ ) $\pm 0.3$ ( $\pm 0.12$ )itch tolerance $20$ consecutive $\frac{\pm 1}{(\pm 0.39)}$ ( $\pm 0.35$ ) $\pm 0.3$ ( $\pm 0.12$ )pevice pitch $t$ $t$ $t$ $0$ ( $(1.57)$ ) $\frac{\pm 0.3}{(\pm 0.12)}$ ape thickness $t$ $t$ $t$ $0$ ( $(1.57)$ ) $\frac{\pm 1}{(\pm 0.39)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1}{(\pm 0.39)}$ ody tape plane deviation $\Delta_P_1$ $P_1$ $\frac{3.81}{(0.15)}$ $\frac{\pm 0.7}{(\pm 0.08)}$ ody tape plane deviation $\Delta_P_1$ $P_1$ $\frac{3.81}{(0.15)}$ $\frac{\pm 0.7}{(\pm 0.28)}$ eed spacing $F$ $F$ $\frac{5.08}{(200)}$ $-0.2/\mu 0.8$ eed spacing $F$ $F$ $\frac{5.08}{(200)}$ $-0.2/\mu 0.8$ eed diameter $d$ $a$ $\frac{370.0}{(14.57)}$ max.	Overall width w/lead protrusion (kinked lead)		C <sub>1</sub>	43.2	max.
verall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.ead protrusion $l_1$ $L_1$ $\frac{1.0}{(0.39)}$ max.rotrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max.rotrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ itch tolerance $20$ consecutive $\frac{\pm 1}{(\pm 0.39)}$ evice pitch $25.4$ $\pm 0.3$ $(1.000)$ ape thickness $t$ $t$ $0.9$ ape thickness $t$ $t$ $0.9$ max. $\frac{4.0}{(1.000)}$ $\frac{\pm 0.2}{(\pm 0.01)}$ plice sprocket hole alignment $\Delta_h$ $\Delta_h$ $0$ $\frac{4.0}{(1.57)}$ $\frac{\pm 0.2}{(\pm 0.08)}$ $\frac{\pm 0.2}{(\pm 0.08)}$ ody tape plane deviation $\Delta_P$ $\Delta_P$ $0$ $\frac{\pm 1.3}{(\pm 0.51)}$ $\frac{\pm 0.7}{(\pm 0.08)}$ $\frac{\pm 0.7}{(\pm 0.08)}$ ead spacing $F$ $F$ $5.08$ ead spacing $F$ $F$ $\frac{5.08}{(200)}$ ead spacing $F$ $F$ $\frac{5.08}{(200)}$ ead spacing $F$ $F$ $\frac{5.08}{(200)}$ ead spacing $d$ $a$ $\frac{370.0}{(1.457)}$ max. $\frac{4.75}{(1.457)}$ $\frac{4.75}{(1.457)}$ max. $\frac{4.75}{(2.20)}$ $\frac{4.75}{(1.457)}$ max. $\frac{4.75}{(2.20)}$ $\frac{4.75}{(1.457)}$ max. $\frac{4.75}{(2.20)}$ $\frac{4.75}{(1.457)}$ max. $\frac{4.75}{(2.20)}$ $\frac{4.75}{(1.457)}$ max.<	Overall width w/o lead protrusion (straight lead)		<i>C</i> <sub>2</sub>	54.0	max.
ead protrusion $l_1$ $L_1$ $\frac{1.0}{(0.09)}$ max.rotrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max.rotrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ itch tolerance $20$ consecutive $\frac{\pm 1}{(\pm 0.39)}$ evice pitch $20$ consecutive $\frac{\pm 1}{(\pm 0.39)}$ ape thickness $t$ $t$ $0.9$ ape thickness with splice $t_1$ $\frac{2.0}{(0.09)}$ max. $\frac{4.0}{(1.57)}$ $\frac{\pm 0.2}{(\pm 0.09)}$ plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 1.3}{(.051)}$ ody tape plane deviation $\Delta_P$ $\Delta_P$ $0$ $\frac{\pm 1.3}{(.051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(.008)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $-0.2/40.8$ eed diameter $d$ $a$ $\frac{370.0}{(.008/+.031)}$ max.eed dameter $d$ $a$ $\frac{370.0}{(.008/+.031)}$ max.	Overall width w/o lead protrusion (kinked lead)		C2	42.5	max.
LL $\frac{11}{(433)}$ max.rotrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{40.3}{(±.012)}$ itch tolerance $20$ consecutive $\frac{\pm 1}{(\pm.039)}$ evice pitch $\frac{25.4}{(1.000)}$ $\pm 0.3}{(\pm.012)}$ ape thickness $t$ $t$ $\frac{0.9}{(0.35)}$ ape thickness $t$ $t$ $\frac{0.9}{(0.35)}$ ape thickness with splice $t_1$ $\frac{2.0}{(0.79)}$ plice sprocket hole alignment $\frac{4.0}{(1.57)}$ $\frac{\pm 0.2}{(\pm.008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1}{(\pm.039)}$ $\Delta_P$ $0$ $\frac{\pm 1.3}{(\pm.051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\pm 0.7$ ead spacing $F$ $F$ $5.08$ $0.2/40.8$ ead spacing $K$ $K$ $370.0$ $(14.57)$ ead lameter $d$ $a$ $370.0$ $(14.57)$ pace between places lase device $4.75$ $\pm 3.25$	Lead protrusion	I <sub>1</sub>	L <sub>1</sub>	1.0	max.
Instruction beyond hold-down tape $l_2$ $l_2$ $l_2$ Not specifiedprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ itch tolerance20 consecutive $\frac{\pm 1}{(\pm 0.39)}$ evice pitch $\frac{25.4}{(1.000)}$ $\pm 0.3}{(\pm 0.12)}$ ape thickness $t$ $t$ $\frac{0.95}{(0.09)}$ max. $\frac{25.4}{(1.000)}$ $\frac{10.7}{(\pm 0.12)}$ ape thickness with splice $t_1$ $\frac{2.0}{(0.79)}$ plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm 0.08)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1.3}{(\pm 0.51)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(.028)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008)+(.031)}$ teel width $w$ $w$ $w$ $\frac{370.0}{(.220)}$ max.ape thickness davice $4.75$ $\pm 3.25$	Protrusion of cutout	L	L	11	max.
procket hole plichP0P0 $\overline{(0.5)}$ $\overline{(\pm.012)}$ itch tolerance $20 \operatorname{consecutive}$ $\frac{\pm 1}{(\pm.039)}$ vevice pitch $\frac{25.4}{(1.000)}$ $\pm 0.3$ ape thickness $t$ $t$ $\frac{0.9}{(.035)}$ ape thickness with splice $t_1$ $\frac{2.0}{(.079)}$ plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm.008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1}{(\pm.039)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm.028)}$ ead spacing $F$ $F$ $5.08$ $-0.2/+0.8$ $(.008/+.031)$ $w$ $w$ $\frac{370.0}{(.200)}$ max.ieel diameter $d$ $a$ $\frac{370.0}{(.14.57)}$ max.	Protrusion beyond hold-down tape	I2	I2		
itch tolerance20 consecutive $\frac{\pm 1}{(\pm,039)}$ evice pitch $\frac{25.4}{(1.000)}$ $\frac{\pm 0.3}{(\pm.012)}$ ape thickness $t$ $t$ $\frac{0.9}{(.035)}$ ape thickness with splice $t_1$ $\frac{2.0}{(.079)}$ plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm.008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{4.0}{(.157)}$ $\frac{\pm 1.3}{(\pm.061)}$ ead seating plane deviation $\Delta_P$ $\Delta_P$ $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{6.00}{(.200)}$ $\frac{-0.2/+0.8}{(.008)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ ead util $w$ $w$ $\frac{370.0}{(.14.57)}$ max. $\frac{370.0}{(.14.57)}$ $max.$ teel diameter $d$ $a$ $\frac{370.0}{(.14.57)}$ max. $\frac{4.75}{(.14.57)}$ $\pm 3.25$	Sprocket hole pitch	P <sub>0</sub>	P <sub>0</sub>		
evice pitch $\frac{25.4}{(1.000)}$ $\frac{\pm 0.3}{(\pm .012)}$ ape thickness $t$ $t$ $\frac{0.9}{(.035)}$ max.ape thickness with splice $t_1$ $\frac{2.0}{(.079)}$ max.plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm .008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1}{(\pm .039)}$ ody tape plane deviation $\Delta_p$ $\Delta_p$ $0$ $\frac{\pm 1.3}{(\pm .051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm .028)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/40.8}{(.008/+.031)}$ leel width $w$ $w$ $\frac{370.0}{(.200)}$ max.eel diameter $d$ $a$ $\frac{370.0}{(.1457)}$ max.	Pitch tolerance				±1
ape thicknesstt $\frac{0.9}{(.035)}$ max.ape thickness with splice $t_1$ $\frac{2.0}{(.079)}$ max.plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm .008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ 0ody tape plane deviation $\Delta_p$ $\Delta_p$ 0ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm .028)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ teel widthww $\frac{56.0}{(2.20)}$ max.ead spacing $A_75$ $\frac{+3.25}{+3.25}$	Device pitch				±0.3
ape thickness with splice $t_1$ $\frac{2.0}{(.079)}$ max.plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm.008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1}{(\pm.039)}$ ody tape plane deviation $\Delta_p$ $\Delta_p$ 0 $\frac{\pm 1.3}{(\pm.051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm.028)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ leel width $w$ $w$ $\frac{56.0}{(2.20)}$ max.ead spacing $d$ $a$ $\frac{370.0}{(14.57)}$ max.	Tape thickness	t	t	0.9	x 7
plice sprocket hole alignment $\frac{4.0}{(.157)}$ $\frac{\pm 0.2}{(\pm.008)}$ ody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1}{(\pm.039)}$ ody tape plane deviation $\Delta_p$ $\Delta_p$ 0 $\frac{\pm 1.3}{(\pm.051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm.028)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ teel width $w$ $w$ $\frac{56.0}{(2.20)}$ max.eel diameter $d$ $a$ $\frac{370.0}{(14.57)}$ max.	Tape thickness with splice		t1	2.0	max.
ody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1}{(\pm.039)}$ ody tape plane deviation $\Delta_p$ $\Delta_p$ $\Delta_p$ 0 $\frac{\pm 1.3}{(\pm.051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(015)}$ $\frac{\pm 0.7}{(\pm.028)}$ ead spacing $F$ $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ eel width $w$ $w$ $\frac{56.0}{(2.20)}$ max.teel diameter $d$ $a$ $\frac{370.0}{(14.57)}$ max.pages between flanges less device $\frac{4.75}{(150)}$ $\pm 3.25$	Splice sprocket hole alignment			4.0	
ody tape plane deviation $\Delta_p$ $\Delta_p$ 0 $\frac{\pm 1.3}{(\pm.051)}$ ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm.028)}$ ead spacing $F$ $F$ $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ eel width $w$ $w$ $\frac{56.0}{(2.20)}$ max.teel diameter $d$ $a$ $\frac{370.0}{(14.57)}$ max.page between flanges less device $\frac{4.75}{(1.57)}$ $\pm 3.25$	Body lateral deviation	Δh	$\Delta_h$		±1
ead seating plane deviation $\Delta P_1$ $P_1$ $\frac{3.81}{(.015)}$ $\frac{\pm 0.7}{(\pm .028)}$ ead spacingFF $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ leel widthww $\frac{56.0}{(2.20)}$ max.leel diameterda $\frac{370.0}{(14.57)}$ max.page between flanges less device $\frac{4.75}{(1.57)}$ $\pm 3.25$	Body tape plane deviation	$\Delta_{p}$	$\Delta_{p}$	0	±1.3
ead spacingF $\frac{5.08}{(.200)}$ $\frac{-0.2/+0.8}{(.008/+.031)}$ leel widthww $\frac{56.0}{(2.20)}$ max.leel diameterda $\frac{370.0}{(14.57)}$ max.page between flanges less device $\frac{4.75}{2}$ $\pm 3.25$	Lead seating plane deviation	$\Delta P_1$	P <sub>1</sub>		±0.7
weel widthww $\frac{56.0}{(2.20)}$ max.leel diameterda $\frac{370.0}{(14.57)}$ max.page between flanges less device $\frac{4.75}{2}$ $\pm 3.25$	Lead spacing	F	F	5.08	-0.2/+0.8
da $\frac{370.0}{(14.57)}$ max.page between flanges less device $\frac{4.75}{2}$ $\pm 3.25$	Reel width	W	W	56.0	
page between flanges less device $\frac{4.75}{\pm 3.25}$	Reel diameter	d	а	370.0	max.
	Space between flanges less device				±3.25 (±.128)

MM DIMENSIONS: (INCHES)

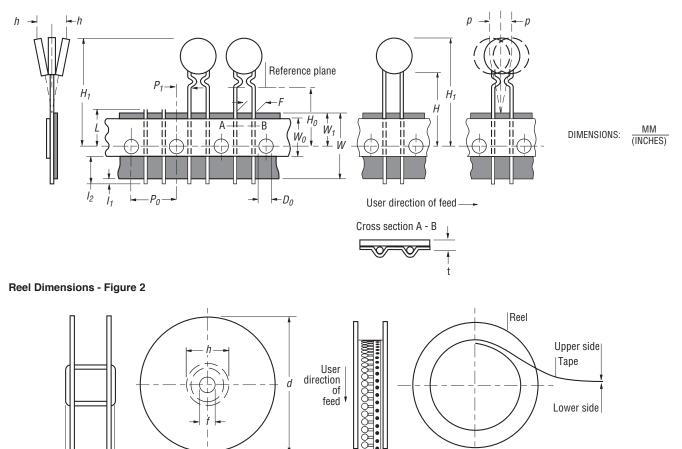
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# **MF-RG Series Tape and Reel Specifications**

### BOURNS

	IEC	EIA	Dimensions		
Dimension Description	Mark	Mark	Dimensions	Tolerance	
Arbor hole diameter	f	С	<u>26.0</u> (1.02)	<u>±12.0</u> (±.472)	
Core diameter	h	п	<u>80.0</u> (3.15)	max.	
Вох			$\frac{64}{(2.50)} \frac{372}{(14.6)} \frac{372}{(14.6)}$	nom.	
Consecutive missing places			3	max.	
Empty places per reel			Not specified		

### **Taped Component Dimensions - Figure 1**



Specifications are subject to change without notice.

W

Users should verify actual device performance in their specific applications.

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