

## Features

- Radial Leaded Devices
- Maximum 600 VAC interrupt fault rating
- Available in matched resistance "bins"
- Ability to withstand lightning surges
- RoHS compliant\*
- Ability to withstand AC power cross conditions

MF-R/600 Series - Telecom PTC Resettable Fuses



Agency recognition: c 🔊 us 📤

## Electrical Characteristics

	Max. Operating	Ma Inter Rati	rupt	Hold Current	Trip Current	Initial Re	I Resistance One Hour Resistance Post-Trip Resistance		Max. Time To Trip @ 1 A	Tripped Power Dissipation
Model	Voltage (V <sub>DC</sub> )	Volts	Amps	Amps at 23 °C	Amps at 23 °C	Ohms at 23 °C	Ohms at 23 °C	Ohms at 23 °C	Seconds at 23 °C	Watts at 23 °C
	(100)	Max.	Max.			Min.	Max.	Max.		
MF-R015/600	250	600	3	0.15	0.30	6.0	12.0	22.0	5.0	1.0
MF-R015/600-A	250	600	3	0.15	0.30	7.0	10.0	20.0	5.0	1.0
MF-R015/600-B	250	600	3	0.15	0.30	9.0	12.0	22.0	5.0	1.0
MF-R015/600-F	250	600	3	0.15	0.30	7.0	12.0	22.0	5.0	1.0
MF-R016/600	250	600	3	0.16	0.32	4.0	10.0	18.0	7.0	1.0
MF-R016/600-A	250	600	3	0.16	0.32	4.0	7.0	16.0	7.0	1.0
MF-R016/600-1	250	600	3	0.16	0.32	4.0	8.0	17.0	7.0	1.0

#### **Environmental Characteristics**

Operating/Storage Temperature	40 °C to +85 °C	
Maximum Device Surface Temperature		
in Tripped State	125 °C	
Passive Aging	+60 °C, 1000 hours	±15 % typical resistance change
Humidity Aging	+60 °C, 90 % R.H. 1000 hours	±15 % typical resistance change
Solvent Resistance	MIL-STD-202, Method 215B	No change
Lead Solderability	ANSI/J-STD-002	-
Flammability	IEC 695-2-2	No flame for 60 secs.
Vibration	MIL-STD-883C, Method 2007.1, Condition A	No change
		-

### Test Procedures And Requirements For Model MF-R/600 Series

Resistance Time to Trip Hold Current Trip Cycle Life	Test Conditions         Verify dimensions and materials         In still air @ 23 °C         1 A, Vmax, 23 °C         30 min. at Ihold         Vmax, Itrip, 100 cycles         Vmax, 24 hours	Per MF physical description Rmin ≤ R ≤ Rmax T ≤ max. time to trip (seconds) No trip No arcing or burning
UL File Number		
TÜV File Number	R 50256529	

### Thermal Derating Chart - Ihold (Amps)

Madal	Ambient Operating Temperature								
Model	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
MF-R015/600	0.233	0.206	0.178	0.150	0.124	0.110	0.096	0.083	0.062
MF-R016/600	0.249	0.219	0.190	0.160	0.132	0.117	0.103	0.088	0.066

Itrip is approximately two times Ihold.



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

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

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# **Applications**

Customer Premise Equipment (CPE):

- Modems
- Cable modems
- Fax machines
- POS equipment
- Security equipment
- Set top boxes

# MF-R/600 Series - Telecom PTC Resettable Fuses

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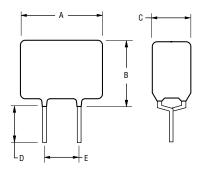
DIMENSIONS:

(INCHES)

### **Product Dimensions**

Model	A	В	ВС		E	Physical Characteristics		
woder	Max.	Max.	Max.	Min.	Nom.	Style	Lead Dia.	Material
MF-R015/600	$\frac{13.5}{(0.531)}$	<u>12.6</u> (0.496)	<u>6.0</u> (0.236)	<u>4.7</u> (0.185)	<u>5.0</u> (0.197)	1	0.65 (0.026)	Sn/Cu
MF-R016/600	<u>16.0</u> (0.629)	<u>12.6</u> (0.496)	<u>6.0</u> (0.236)	<u>4.7</u> (0.185)	<u>5.0</u> (0.197)	1	<u>0.65</u> (0.026)	Sn/Cu

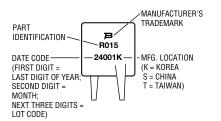
Packaging options: BULK: 300 pcs. per bag. Longer lead lengths available upon request.



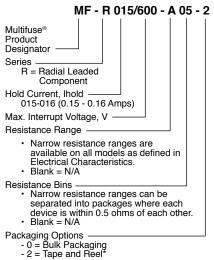
# TAPE & REEL: 600 pcs. per reel.

# **Typical Part Marking**

Represents total content. Layout may vary.

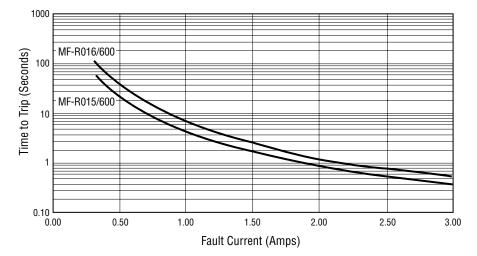


## How to Order



\*Packaged per EIA486-B

## Typical Time to Trip at 23 °C



#### **Resistance Options**

Model	Rmin.	Rmax.	R1Max.	Bin
MF-R015/600	6.0	12.0	22.0	N/A
MF-R015/600-A	7.0	10.0	20.0	0.5
MF-R015/600-B	9.0	12.0	22.0	0.5
MF-R015/600-F	7.0	12.0	22.0	0.5
MF-R016/600	4.0	10.0	18.0	N/A
MF-R016/600-A	4.0	7.0	16.0	0.5
MF-R016/600-1	4.0	8.0	17.0	0.5

MF-R/600, REV. O, 03/19

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# MF-R, MF-R/90, MF-R/600, & MF-RX, & MF-RX/72 Series Tape and Reel Specifications

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Devices taped using EIA468-B/IEC286-2 standards. See table below and Figures 1 and 2 for details.

Description       W       W $\frac{18}{(709)}$ $\frac{0.5/t}{(0.02/t.039)}$ cloid down tape width       W <sub>Q</sub> W <sub>4</sub> $\frac{11}{(433)}$ min.         cloid down tape       No protrusion       No protrusion       No protrusion         Op distance between tape edges       W <sub>2</sub> W <sub>6</sub> $\frac{3}{(116)}$ max.         Sprocket hole position       W <sub>1</sub> W <sub>5</sub> $\frac{9}{(3541)}$ $-0.5/t0.75$ Sprocket hole diameter       D <sub>0</sub> D <sub>0</sub> $\frac{4}{(157)}$ $\pm 0.2$ bkscissa to plane (straight lead)       H       H $1105$ $\pm 3.0$ bkscissa to plane (kinked lead)       H <sub>1</sub> H <sub>1</sub> $110$ $\pm 0.2$ bkscissa to top (straight lead)       H <sub>1</sub> H <sub>1</sub> $110$ $\pm 0.2$ bkscissa to top (straight lead)       H <sub>1</sub> H <sub>1</sub> $112$ $e0.2$ bkscissa to top (straight lead)       H <sub>1</sub> H <sub>1</sub> $112$ $e0.2$ max.         bkscissa to top (straight lead)       C <sub>1</sub> $\frac{25.0}{(2.160)}$ max. $\frac{25.0}{(2.163)}$ max.         bcverall width wlead protrusion (kinked lead)       C <sub>1</sub> $\frac{12.7}{(1.673)}$ $\frac{40.3}{(2.163)}$ $\frac{a0.3}{(2.126$	Dimension Description	IEC Mark	EIA Mark	Dime Dimensions	nsions Tolerance
kold down tape width $W_0$ $W_4$ $\frac{11}{(433)}$ min.         hold down tape       No protrusion         Op distance between tape edges $W_2$ $W_6$ $\frac{3}{(116)}$ max.         Sprocket hole position $W_1$ $W_5$ $\frac{9}{(354)}$ $\frac{-0.540}{(-0.0240.03)}$ Sprocket hole diameter $D_0$ $\frac{4}{(157)}$ $\frac{4.02}{(-0.0240.03)}$ $\frac{-0.22}{(-0.078)}$ backcissa to plane (straight lead) $H$ $H$ $H$ $116.5$ $\frac{+3.02}{(-0.0240.03)}$ backcissa to plane (straight lead) $H_0$ $H_0$ $H_0$ $\frac{10.22}{(-163)}$ $\frac{10.22}{(-163)}$ backcissa to top (straight lead) $H_1$ $H_1$ $H_1$ $\frac{12.22}{(-165)}$ max.         Doverall width w/lead protrusion (straight lead) $C_1$ $\frac{42.2}{(-165)}$ max.         Doverall width w/lead protrusion (straight lead) $C_2$ $\frac{42.6}{(-1673)}$ max.         Voreall width w/lead protrusion (straight lead) $C_2$ $\frac{42.6}{(-1673)}$ max.         vorall width w/lead protrusion (straight lead) $C_2$ $\frac{42.6}{(-1673)}$ max.         rotrusion beyond hold-down tape $I_2$ $I_2$ Not spe	Carrier tape width			18	-0.5/+1.0
bild down tape       No protrusion         Op distance between tape edges $W_2$ $W_6$ $\frac{3}{(.118)}$ max.         Sprocket hole position $W_1$ $W_5$ $\frac{9}{(.354)}$ $(.002740.03)$ Sprocket hole diameter $D_0$ $D_1$ $\frac{4}{(.157)}$ $\frac{e.0278}{(.e078)}$ Sprocket hole diameter $D_0$ $D_0$ $\frac{4}{(.157)}$ $\frac{e.0278}{(.e078)}$ Sbacissa to plane (straight lead) $H$ $H$ $(.1288)$ max.         bbscissa to plane (kinked lead) $H_1$ $H_1$ $H_1$ $(.1.496)$ max.         bbscissa to top (kinked lead) $H_1$ $H_1$ $H_1$ $(.1.496)$ max.         bbscissa to top (kinked lead) $H_1$ $H_1$ $(.1.496)$ max.         bbscissa to top (kinked lead) $C_1$ $(.1.673)$ max.         bbscissa to top (kinked lead) $C_1$ $(.1.673)$ max.         bbscissa to top (kinked lead) $C_2$ $(.2.126)$ max.         bbscissa to top (kinked lead) $C_2$ $(.2.126)$ max.         bbscissa to top (kinked lead) $C_2$ $(.2.126)$ max.	Hold down tape width	WO	W4	<u></u>	\$ <b>F</b>
op distance between tape edges $W_2$ $W_6$ $(116)$ max.         Sprocket hole position $W_1$ $W_5$ $\frac{9}{(354)}$ $(-0.54/0.75)$ Sprocket hole diameter $D_0$ $D_0$ $(\frac{4}{(157)})$ $\frac{40.2}{(2.0078)}$ Sprocket hole diameter $D_0$ $D_0$ $(\frac{115}{(150)})$ $\frac{40.2}{(161)}$ Sprocket hole diameter $D_0$ $D_0$ $(\frac{116}{(150)})$ $\frac{40.2}{(2.0078)}$ Abscissa to plane (straight lead) $H$ $H$ $H$ $H$ $(\frac{116}{(1.496)})$ $\pi ax.$ Abscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $H_1$ $(\frac{11.6}{(1.268)})$ $\pi ax.$ Overall width whead protrusion (straight lead) $C_1$ $(\frac{55.0}{(2.165)})$ $\pi ax.$ Overall width whead protrusion (straight lead) $C_2$ $(\frac{42.5}{(2.1657)})$ $\pi ax.$ Overall width who lead protrusion (straight lead) $C_2$ $(\frac{42.5}{(1.673)})$ $\pi ax.$ Overall width who lead protrusion (kinked lead) $C_2$ $(\frac{42.5}{(1.673)})$ $\pi ax.$ Overall width who lead protrusion (kinked lead) $C_2$ $(\frac{42.5}{(1.673)})$ $\pi ax.$ <tr< td=""><td>Hold down tape</td><td></td><td></td><td></td><td></td></tr<>	Hold down tape				
Sprocket hole position $W_1$ $W_5$ $\frac{9}{(.354)}$ $-0.5/0.75$ (.0024-003)Sprocket hole diameter $D_0$ $D_0$ $\frac{4}{(.157)}$ $\frac{4}{(.2007)}$ Sprocket hole diameter $D_0$ $D_0$ $\frac{4}{(.157)}$ $\frac{4}{(.2007)}$ Staccissa to plane (straight lead) $H$ $H$ $H$ $(.157)$ $\frac{4}{(.2017)}$ Staccissa to plane (kinked lead) $H_0$ $H_0$ $16$ $\frac{40.5}{(.631)}$ $\frac{40.5}{(.632)}$ Staccissa to top (straight lead) $H_1$ $H_1$ $H_1$ $11.496$ $\frac{38.0}{(.632)}$ max.Staccissa to top (kinked lead) $H_1$ $H_1$ $H_1$ $\frac{38.0}{(.265)}$ max.Overall width w/ead protrusion (straight lead) $C_1$ $\frac{45.2}{(.126)}$ max.Overall width w/ead protrusion (straight lead) $C_2$ $\frac{42.5}{(.167)}$ max.Overall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(.167)}$ max.Overall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(.167)}$ max.Overall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(.167)}$ max.Overall width w/o lead protrusion (kinked lead) $L$ $L$ $\frac{11.2}{(.130)}$ max.Overall width w/o lead protrusion (kinked lead) $L$ $L$ $\frac{11.2}{(.1639)}$ max.Overall width w/o lead protrusion (kinked lead) $L$ $L$ $\frac{11.2}{(.1639)}$ $\frac{12.7}{(.639)}$ $\frac{40.3}{(.6012)}$ Overall width w/o lead protrusion (kinked lead) $L$ $L$ $\frac{11.2}{(.1639)}$ $\frac$	Top distance between tape edges	W2	W <sub>6</sub>		max.
Sprocket hole diameter $D_0$ $D_0$ $\frac{4}{(157)}$ $\frac{102}{(157)}$ Abscissa to plane (straight lead) $H$ $H$ $H$ $18.5$ $\pm 3.0$ Abscissa to plane (kinked lead) $H_0$ $H_0$ $16$ $\pm 0.5$ Abscissa to plane (kinked lead) $H_0$ $H_0$ $16$ $\pm 0.5$ Abscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $13.90$ max.Abscissa to top (kinked lead) $H_1$ $H_1$ $H_1$ $13.90$ max.Abscissa to top (kinked lead) $H_1$ $H_1$ $11.286$ max.Overall width w/lead protrusion (straight lead) $C_1$ $12.66$ max.Overall width w/lead protrusion (straight lead) $C_2$ $12.7$ max.Overall width w/lead protrusion (kinked lead) $C_2$ $12.60$ max.Overall width w/lead protrusion (kinked lead) $C_2$ $12.60$ max.Overall width w/lead protrusion (kinked lead) $C_2$ $12.7$ max.Overall width w/lead protrusion (kinked lead) $L$ $L$ $11.7$ max.Overall width w/lead protrusion (kinked lead) $L$ $L$ $12.7$ $10.0$ max.Overall width w/lead protrusion (kinked lead) $L$ $L$ $11.7$ $10.0$ max.Overall width w/lead protrusion (kinked lead) $L$ $L$ $11.7$ $10.0$ $10.2$ Overall width w/lead protrusion (kinked lead) $L$ $L$ $11.7$ $10.0$ $10.2$ $10.2$ Overall width w/lead protrusion (kinked lead) $L$	Sprocket hole position	W <sub>1</sub>	W5	9	
HHH18.5 (728) $a3.0$ ( $a.118$ )Abscissa to plane (kinked lead) $H_0$ $H_0$ $H_0$ $(\frac{16}{63})$ $(\frac{a0.2}{a.02})$ Abscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $(\frac{16}{63})$ $(\frac{a0.2}{a.02})$ Abscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $(\frac{32.0}{1.4990})$ max.Abscissa to top (kinked lead) $H_1$ $H_1$ $H_1$ $\frac{32.2}{(1.268)}$ max.Overall width w/lead protrusion (straight lead) $C_1$ $\frac{55.0}{(2.165)}$ max.Overall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Overall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Overall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Overall width w/lead protrusion (kinked lead) $L$ $L$ $\frac{11}{(.433)}$ max.Protrusion of cutout $L$ $L$ $\frac{11}{(.433)}$ max.Protrusion for dutout $L$ $L$ $\frac{12.7}{(0.5)}$ $\frac{40.3}{(a.012)}$ Protrusion beyond hold-down tape $I_2$ $I_2$ Not specifiedProtrusion beyond hold-down tape $I_2$ $I_2$ $I_2$ Protrusion F-R160, MF-R160, MF-R190, MF-RX110-MF-RX375 $\frac{12.7}{(0.5)}$ $\frac{40.3}{(a.012)}$ Protrusion MF-R400, MF-R400, MF-R200, MF-RX100-MF-RX375 $\frac{25.4}{(1.00)}$ $\frac{40.6}{(a.039)}$ Pave pitch: MF-R185-MF-R1400, MF-R200, MF-RX375/72 $\frac{12.7}{(0.59)}$ $\frac{40.6}{(a.024)}$ Pave pitch: MF-R185-MF-R400,	Sprocket hole diameter	D <sub>0</sub>	D <sub>0</sub>	4	
basesiss to plane (kinked lead) $H_0$ $H_0$ $\frac{16}{(63)}$ $\frac{40.5}{(4.02)}$ Abscissa to top (straight lead) $H_1$ $H_1$ $H_1$ $H_1$ $\frac{38.0}{(1.466)}$ max.Abscissa to top (kinked lead) $H_1$ $H_1$ $H_1$ $\frac{32.2}{(1.266)}$ max.Diverall width w/lead protrusion (straight lead) $C_1$ $\frac{25.0}{(2.165)}$ max.Diverall width w/lead protrusion (kinked lead) $C_1$ $\frac{43.2}{(2.165)}$ max.Diverall width w/lead protrusion (kinked lead) $C_2$ $\frac{54.0}{(2.126)}$ max.Diverall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(2.126)}$ max.Diverall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(2.126)}$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ $10$ max.Diverall width w/lead protrusion (kinked lead) $L$ $L$ $11$ $10$ $10$ $11$ $10$ $11$ $10$ $11$ $11$ $11$ $11$ $10$ <	Abscissa to plane (straight lead)	Н	Н	18.5	<u>±3.0</u>
bbscissa to top (straight lead) $H_1$	Abscissa to plane (kinked lead)	H <sub>0</sub>	H <sub>0</sub>	16	±0.5
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) $C_2$ $\frac{54.0}{(2.128)}$ max.Overall width w/o lead protrusion (straight lead) $C_2$ $\frac{44.5}{(1.673)}$ max.Overall width w/o lead protrusion (kinked lead) $L_1$ $L_1$ $\frac{10}{(0.399)}$ max.Overall width w/o lead protrusion (kinked lead) $L_1$ $L_1$ $\frac{10}{(309)}$ max.Protrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max.Protrusion of cutout $L$ $L$ $\frac{11}{(4.33)}$ max.Protrusion boyond hold-down tape $I_2$ $I_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{40.3}{(\pm 0.12)}$ Protrusion Cherrine20 consecutive $\frac{\pm 1}{(\pm 0.24)}$ $\frac{\pm 0.6}{(1.01)}$ $\frac{\pm 0.6}{(\pm 0.24)}$ Previce pitch: MF-R160, MF-R190, MF-R/90, MF-RX110-MF-RX375 $\frac{25.4}{(1.024)}$ $\frac{\pm 0.6}{(1.00)}$ $\frac{\pm 0.6}{(\pm 0.24)}$ Previce pitch: MF-R185-MF-R400, MF-R160, MF-RX375/72 $t_1$ $\frac{0.3}{(0.35)}$ $\frac{40.3}{(\pm 0.12)}$ Previce pitch: MF-R375, MF-R400, MF-R250-MF-R1100, MF-RX375/72 $t_1$ $\frac{0.3}{(0.35)}$ $\frac{40.3}{(\pm 0.12)}$ Pape thickness with splice: MF-R200-MF-RX375/72 $t_1$ $\frac{0.3}{(0.01)}$ $\frac{40.3}{(\pm 0.12)}$ Splice sprocket hole alignment0 <td>Abscissa to top (straight lead)</td> <td>H<sub>1</sub></td> <td>H<sub>1</sub></td> <td>38.0</td> <td></td>	Abscissa to top (straight lead)	H <sub>1</sub>	H <sub>1</sub>	38.0	
Dyerall width w/lead protrusion (straight lead) $C_1$ $\frac{55.0}{(2.165)}$ max.Dyerall width w/lead protrusion (kinked lead) $C_1$ $\frac{43.2}{(1.7)}$ max.Dyerall width w/lead protrusion (kinked lead) $C_2$ $\frac{54.0}{(2.126)}$ max.Dyerall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Dyerall width w/lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Dyerall width w/lead protrusion (kinked lead) $L$ $L$ $11$ $1.00$ Dyerall width w/lead protrusion (kinked lead) $L$ $L$ $11$ $1.00$ Protrusion of cutout $L$ $L$ $11$ $1.00$ max.Protrusion of cutout $L$ $L$ $11$ $1.03$ max.Protrusion beyond hold-down tape $I_2$ $I_2$ Not specified $I_2$ Protrusion beyond hold-down tape $I_2$ $I_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $12.7$ $\pm 0.3$ Protrusion Score-MF-R160, MF-R/90, MF-RX030/72-MF-RX03072 $\frac{12.7}{(0.5)}$ $\pm 0.3$ Pevice pitch: MF-R05-MF-R160, MF-R/90, MF-RX10-MF-RX375 $\frac{25.4}{(0.59)}$ $\pm 0.6$ Protrusion Score MF-R160, MF-R/90, MF-RX10-MF-RX375/72 $t_1$ $\frac{2.3}{(0.91)}$ max.Pape thickness with splice: MF-R010-MF-R160, 	Abscissa to top (kinked lead)	H <sub>1</sub>	H <sub>1</sub>	32.2	max.
Dverall width w/lead protrusion (kinked lead) $C_1$ $\frac{43.2}{(1.7)}$ max.Dverall width w/o lead protrusion (straight lead) $C_2$ $\frac{54.0}{(2.126)}$ max.Dverall width w/o lead protrusion (straight lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Dverall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Dverall width w/o lead protrusion (kinked lead) $L_1$ $L_1$ $\frac{10.0}{(0.09)}$ max.Dverall width w/o lead protrusion (kinked lead) $L_2$ $L_1$ $\frac{11.0}{(0.09)}$ max.Dverall width w/o lead protrusion (kinked lead) $L_1$ $L_1$ $\frac{11.0}{(0.09)}$ max.Dverall width w/o lead protrusion (kinked lead) $L_2$ $L_2$ Not specifiedProtrusion of cutout $L$ $L$ $\frac{11.1}{(4.33)}$ max.Protrusion beyond hold-down tape $I_2$ $I_2$ Not specifiedProtrusion beyond hold-down tape $I_2$ $I_2$ $I_2.7$ $\pm 0.3$ Protrusion beyond hold-down tape $I_2$ $I_2$ $I_2.7$ $\pm 0.3$ Protrusion beyond hold-down tape $I_2$ $I_2.7$ $\pm 0.3$ $\pm 0.12$ Protrusion beyond hold-down tape $I_2$ $I_2.7$ $\pm 0.3$ $\pm 0.12$ <tr< td=""><td>Overall width w/lead protrusion (straight lead)</td><td></td><td>C<sub>1</sub></td><td>55.0</td><td>max.</td></tr<>	Overall width w/lead protrusion (straight lead)		C <sub>1</sub>	55.0	max.
Cycerall width w/o lead protrusion (straight lead) $C_2$ $\frac{54.0}{(2.126)}$ max.Dverall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ maxead protrusion $l_1$ $L_1$ $\frac{1.0}{(0.39)}$ maxead protrusion of cutout $L$ $L$ $\frac{1.1}{(433)}$ max.Protrusion of cutout $L$ $L$ $\frac{1.1}{(433)}$ max.Protrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm .012)}$ Pitch tolerance20 consecutive $\frac{\pm 1.1}{(\pm .039)}$ $\frac{\pm 0.3}{(\pm .012)}$ Device pitch: MF-R160-MF-R160, MF-R/90, $MF-RX020/72-MF-RX030/72$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm .012)}$ Device pitch: MF-R185-MF-R400, MF-R/90, $MF-RX040/72-MF-RX030/72$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm .012)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ arge thicknesstt $\frac{10.9}{(0.35)}$ max.Tape thickness with splice: MF-R100-MF-R160, $t_1$ $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250-MF-R1100, $AF-RX10-MF-RX375/72$ $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 1.0}{(\pm .039)}$ max.Solv lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.0}{(\pm .039)}$	Overall width w/lead protrusion (kinked lead)		C <sub>1</sub>	43.2	max.
Dyerall width w/o lead protrusion (kinked lead) $C_2$ $\frac{42.5}{(1.673)}$ max.Locate protrusion $l_1$ $L_1$ $1.0$ max.Protrusion of cutout $L$ $L$ $\frac{11}{(433)}$ max.Protrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedProtrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ Pitch tolerance20 consecutive $\frac{\pm 1}{(\pm 0.39)}$ Device pitch: MF-R055-MF-R160, MF-R/90, AF-RX020/72-MF-RX307/2 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 0.12)}$ Perturbation of the pitch mF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm 0.24)}$ Perturbation of the pitch mF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm 0.24)}$ Perturbation of the pitch mF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm 0.24)}$ Perturbation of the pitch: MF-R185-MF-R400, MF-RX100, MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Pape thickness with splice: MF-R010-MF-R1100, AF-RX110-MF-RX375, MF-R90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 1.3}{(\pm 0.012)}$ $\frac{\pm 1.3}{(\pm 0.012)}$ Sody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.3}{(\pm 0.39)}$	Overall width w/o lead protrusion (straight lead)		C2	54.0	max.
Lead protrusion $l_1$ $L_1$ $\frac{1.0}{(.039)}$ max.Protrusion of cutoutLL $\frac{11}{(.433)}$ max.Protrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedProtrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 012)}$ Pritch tolerance20 consecutive $\frac{\pm 1}{(\pm .039)}$ Pevice pitch: MF-R005-MF-R160, MF-R/90, AF-RX020/72-MF-RX030/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm .012)}$ Pevice pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Pevice pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Pevice pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Pevice pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Pare thickness $t$ $t$ $\frac{0.9}{(.035)}$ max.Pare thickness $t$ $t$ $\frac{0.9}{(.035)}$ max.Pare thickness with splice: MF-R010-MF-R160, AF-RX110/72-MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment $0$ $\frac{\pm 1.3}{(.039)}$ max.Sody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1.3}{(\pm .039)}$	Overall width w/o lead protrusion (kinked lead)		C2	42.5	max.
Protrusion of cutoutLL $\frac{11}{(.433)}$ max.Protrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 012)}$ Pitch tolerance20 consecutive $\frac{\pm 1}{(\pm 039)}$ Device pitch: MF-R005–MF-R160, MF-R/90, AF-RX0207/2–MF-RX030/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 012)}$ Device pitch: MF-R185–MF-R400, MF-R/90, AF-RX020/72–MF-RX375/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 012)}$ Device pitch: MF-R185–MF-R400, MF-R/600, MF-RX110–MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm 024)}$ Device pitch: MF-R185–MF-R400, MF-R/600, MF-RX110–MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm 024)}$ Device pitch: MF-R185–MF-R400, MF-RX100–MF-RX375/72 $t$ $t$ $\frac{0.6}{(\pm 024)}$ Device pitch: MF-R185–MF-R400, MF-RX100–MF-RX375/72 $t$ $t$ $\frac{0.6}{(\pm 024)}$ Device pitch: MF-R185–MF-R400, MF-RX100–MF-RX375/72 $t$ $t$ $t$ Device pitch: MF-R185–MF-R400, MF-RX100–MF-RX375/72 $t$ $t$ $t$ Device pitch: MF-R185/72 $t$ $t$ $t$ $0.6$ Tape thickness with splice: MF-R250–MF-R1100, (MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t$ $t$ $t$ Splice sprocket hole alignment $0$ $\frac{\pm 0.3}{(\pm 012)}$ max.Splice sprocket hole alignment $0$ $\frac{\pm 1.3}{(\pm 012)}$ Body lateral deviation $\Delta_h$ $\Delta$ $0$ $\frac{\pm 1.3}{(\pm 0.0)}$	Lead protrusion	I <sub>1</sub>	L <sub>1</sub>	1.0	max.
Protrusion beyond hold-down tape $l_2$ $l_2$ Not specifiedSprocket hole pitch $P_0$ $P_0$ $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm 012)}$ Pitch tolerance20 consecutive $\frac{\pm 1}{(\pm .039)}$ Device pitch: MF-R005-MF-R160, MF-R/90, MF-RX030/72-MF-RX030/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm .012)}$ Device pitch: MF-R185-MF-R400, MF-R/90, MF-RX040/72-MF-RX375/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.6}{(\pm .024)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Device pitch: MF-R185-MF-R400, MF-R/100, MF-RX10/72-MF-RX375/72 $t$ $t$ $t$ Cape thickness with splice: MF-R010-MF-R160, MF-RX110/72-MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Cape thickness with splice: MF-R250-MF-R1100, MF-RX100, MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm .012)}$ $t_1.0$ $t \pm 0.3$ Body lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.3}{(\pm .0312)}$	Protrusion of cutout	L	L	<u></u>	max.
P0P0P0 $\overline{(0.5)}$ $\overline{(\pm.012)}$ Pitch tolerance20 consecutive $\frac{\pm 1}{(\pm.039)}$ Device pitch: MF-R005-MF-R160, MF-R/90, MF-RX030/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm.012)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm.024)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm.024)}$ Tape thicknessttt $\frac{0.9}{(.035)}$ Tape thickness with splice: MF-R010-MF-R160, MF-RX185/72t1 $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250-MF-R1100, MF-RX110-MF-RX375/72t1 $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm.012)}$ $\frac{\pm 0.3}{(\pm.012)}$ Body lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.3}{(\pm.039)}$	Protrusion beyond hold-down tape	I2	I2		
Ditch tolerance20 consecutive $\frac{\pm 1}{(\pm.039)}$ Device pitch: MF-R005-MF-R160, MF-R/90, MF-RX020/72-MF-RX030/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm.012)}$ Device pitch: MF-R185-MF-R400, MF-R/600, MF-RX110-MF-RX375 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm.024)}$ Tape thickness $t$ $t$ $\frac{0.9}{(0.35)}$ max.Tape thickness with splice: MF-R010-MF-R160, MF-RX110/72-MF-RX185/72 $t_1$ $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250-MF-R1100, MF-RX110-MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm.012)}$ $\frac{\pm 0.3}{(\pm.012)}$ Body lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.3}{(\pm.039)}$	Sprocket hole pitch	P <sub>0</sub>	P <sub>0</sub>		
Device pitch: MF-R005–MF-R160, MF-R/90, MF-RX020/72–MF-RX030/72 $\frac{12.7}{(0.5)}$ $\frac{\pm 0.3}{(\pm .012)}$ Device pitch: MF-R185–MF-R400, MF-R/600, MF-RX110–MF-RX375 MF-RX040/72–MF-RX375/72 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Device pitch: MF-R185–MF-R400, MF-R/600, MF-RX110–MF-RX375 MF-RX040/72–MF-RX375/72 $\frac{25.4}{(1.0)}$ $\frac{\pm 0.6}{(\pm .024)}$ Tape thicknesstt $\frac{0.9}{(.035)}$ max.Tape thickness with splice: MF-R010–MF-R160, MF-RX110/72–MF-RX185/72 $t_1$ $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250–MF-R1100, MF-RX110–MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm .012)}$ $\frac{\pm 0.3}{(\pm .012)}$ $\frac{\pm 0.3}{(\pm .012)}$ Body lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.3}{(\pm .039)}$	Pitch tolerance				<u>±1</u>
MF-RX040/72-MF-RX375/72 $(1.0)$ $(\pm.024)$ Tape thicknesstt $\frac{0.9}{(.035)}$ max.Tape thickness with splice: MF-R010-MF-R160, MF-RX110/72-MF-RX185/72t1 $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250-MF-R1100, MF-RX110-MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72t1 $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm .012)}$ sody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.0}{(\pm .039)}$	Device pitch: MF-R005–MF-R160, MF-R/90, MF-RX020/72–MF-RX030/72				_±0.3_
ttttttTape thicknessttttttTape thickness with splice: MF-R010–MF-R160, MF-RX110/72–MF-RX185/72t1 $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250–MF-R1100, MF-RX110–MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72t1 $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm .012)}$ sector to the splice sprocket hole alignment0 $\frac{\pm 1.0}{(\pm .039)}$ Body lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.3}{(\pm .039)}$	Device pitch: MF-R185–MF-R400, MF-R/600, MF-RX110–MF-RX375 MF-RX040/72–MF-RX375/72				
Tape thickness with splice: MF-R010–MF-R160, MF-RX110/72–MF-RX185/72 $t_1$ $\frac{1.5}{(.059)}$ max.Tape thickness with splice: MF-R250–MF-R1100, MF-RX110–MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $t_1$ $\frac{2.3}{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm .012)}$ $\frac{\pm 0.3}{(\pm .039)}$ Sody lateral deviation $\Delta_h$ $\Delta_h$ 0 $\frac{\pm 1.0}{(\pm .039)}$	Tape thickness	t	t		max.
MF-RX110-MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72 $\overline{(.091)}$ max.Splice sprocket hole alignment0 $\frac{\pm 0.3}{(\pm .012)}$ Body lateral deviation $\Delta_h$ $\Delta_h$ 0Addy table place deviation $\Delta_h$ $\Delta_h$ 0Addy table place deviation $\Delta_h$ $\Delta_h$ 0	Tape thickness with splice: MF-R010–MF-R160, MF-RX110/72–MF-RX185/72		t <sub>1</sub>		max.
Sody lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1.0}{(\pm .039)}$	Tape thickness with splice: MF-R250–MF-R1100, MF-RX110–MF-RX375, MF-R/90, MF-RX250/72-MF-RX375/72		t <sub>1</sub>		max.
Body lateral deviation $\Delta_h$ $\Delta_h$ $0$ $\frac{\pm 1.0}{(\pm .039)}$	Splice sprocket hole alignment			0	
$\pm 1.3$	Body lateral deviation	$\Delta_h$	$\Delta_h$	0	±1.0
	Body tape plane deviation	Δρ	$\Delta_p$	0	_±1.3

MM (INCHES) DIMENSIONS:

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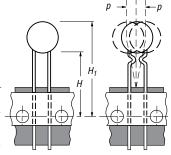
# MF-R, MF-R/90, MF-R/600, MF-RX, & MF-RX/72 Series Tape and Reel Specifications

# BOURNS

Mark		Dimensions		
iviai n	Mark	Dimensions	Tolerance	
F	F	<u>5.08</u> (0.2)	$\frac{\pm 0.2}{(\pm 0.008)}$	
w	W2	<u>56.0</u> (2.205)	max.	
d	а	<u>370.0</u> (14.57)	max.	
W <sub>1</sub>	h	4.75	<u>±3.25</u> (±.128)	
f	С	<u>26.0</u> (1.024)	<u>±12.0</u> (±.472)	
h	п	<u>80</u> (3.15)	max.	
h	п	<u>91</u> (3.58)	max.	
		$\frac{62}{(2.44)} \frac{355}{(14.0)} \frac{345}{(13.6)}$	nom.	
		$\frac{64}{(2.52)} \frac{372}{(14.6)} \frac{362}{(14.25)}$	max.	
		3	max.	
		none		
		Not specified		
		0.1 %		
	w d W1 f h	w         W2           d         a           W1         h           f         c           h         n	r         r $\overline{(0.2)}$ w $W_2$ $\overline{56.0}$ (2.205)           d         a $\overline{370.0}$ (14.57) $W_1$ h $\frac{4.75}{(.187)}$ f         c $\frac{26.0}{(1.024)}$ h         n $\frac{80}{(3.15)}$ h         n $\frac{80}{(3.58)}$ $\frac{62}{(2.44)}$ $\frac{372}{(14.6)}$ $\frac{362}{(14.25)}$ 3         none           Not specified	

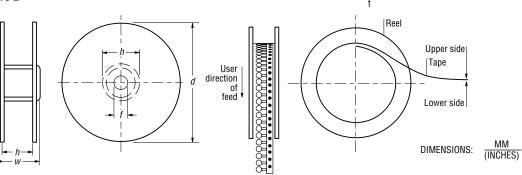
#### **Taped Component Dimensions -**Figure 1

h **⊢**h Reference plane  $H_1$ H<sub>1</sub> Н H<sub>0</sub>  $W_1$ -Н-В || ||\_/-쁥 Ŵ<sub>0</sub> ₩€ • ĺ2 P<sub>0</sub> -D0 İ1 User direction of feed -----



Cross section A - B  $\langle 0 \rangle$ 

### **Reel Dimensions - Figure 2**



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