



BOURNS®

Features

- Radial Leaded Devices
- Cured, flame retardant epoxy polymer insulating material meets UL 94V-0 requirements
- Agency recognition:   
- RoHS compliant*

 The MF-RX Series is currently available, although not recommended for new designs. The higher voltage rated **MF-RX/72 Series** is preferred.

MF-RX 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-RX110 | 60 | 40 | 1.10 | 2.20 | 0.15 | 0.25 | 0.38 | 5.5 | 8.2 | 1.50 |
| MF-RX135 | 60 | 40 | 1.35 | 2.70 | 0.12 | 0.19 | 0.30 | 6.75 | 9.6 | 1.70 |
| MF-RX160 | 60 | 40 | 1.60 | 3.20 | 0.09 | 0.14 | 0.22 | 8.0 | 11.4 | 1.90 |
| MF-RX185 | 60 | 40 | 1.85 | 3.70 | 0.08 | 0.12 | 0.19 | 9.25 | 12.6 | 2.10 |
| MF-RX250 | 60 | 40 | 2.50 | 5.00 | 0.05 | 0.08 | 0.13 | 12.5 | 15.6 | 2.50 |
| MF-RX300 | 60 | 40 | 3.00 | 6.00 | 0.04 | 0.06 | 0.10 | 15.0 | 19.8 | 2.80 |
| MF-RX375 | 60 | 40 | 3.75 | 7.50 | 0.03 | 0.05 | 0.08 | 18.75 | 24.0 | 3.20 |

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-RX 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 |

UL File Number E 174545S
 CSA File Number..... CA 110338
 TÜV File Number R2057213

Thermal Derating Chart - I_{hold} / I_{trip} (Amps)

| Model | Ambient Operating Temperature | | | | | | | | |
|----------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | -40 °C | -20 °C | 0 °C | 23 °C | 40 °C | 50 °C | 60 °C | 70 °C | 85 °C |
| MF-RX110 | 1.71 / 3.42 | 1.50 / 3.00 | 1.31 / 2.62 | 1.10 / 2.20 | 0.89 / 1.78 | 0.79 / 1.58 | 0.69 / 1.38 | 0.59 / 1.18 | 0.44 / 0.88 |
| MF-RX135 | 2.09 / 4.18 | 1.84 / 3.68 | 1.61 / 3.22 | 1.35 / 2.70 | 1.09 / 2.18 | 0.97 / 1.94 | 0.85 / 1.70 | 0.73 / 1.46 | 0.54 / 1.08 |
| MF-RX160 | 2.48 / 4.96 | 2.18 / 4.36 | 1.90 / 3.80 | 1.60 / 3.20 | 1.30 / 2.60 | 1.15 / 2.30 | 1.01 / 2.02 | 0.86 / 1.72 | 0.64 / 1.28 |
| MF-RX185 | 2.87 / 5.74 | 2.52 / 5.04 | 2.20 / 4.40 | 1.85 / 3.70 | 1.50 / 3.00 | 1.33 / 2.66 | 1.17 / 2.34 | 1.00 / 2.00 | 0.74 / 1.48 |
| MF-RX250 | 3.88 / 7.76 | 3.40 / 6.80 | 2.98 / 5.96 | 2.50 / 5.00 | 2.03 / 4.06 | 1.80 / 3.60 | 1.58 / 3.16 | 1.35 / 2.70 | 1.00 / 2.00 |
| MF-RX300 | 4.65 / 9.30 | 4.08 / 8.16 | 3.57 / 7.14 | 3.00 / 6.00 | 2.43 / 4.86 | 2.16 / 4.32 | 1.89 / 3.78 | 1.62 / 3.24 | 1.20 / 2.40 |
| MF-RX375 | 5.81 / 11.6 | 5.10 / 10.2 | 4.46 / 8.92 | 3.75 / 7.50 | 3.04 / 6.08 | 2.70 / 5.40 | 2.36 / 4.72 | 2.03 / 4.06 | 1.50 / 3.00 |

*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.
 Specifications are subject to change without notice.
 Customers should verify actual device performance in their specific applications.

Additional Features

- Bulk packaging, tape and reel and Ammo-Pak available on most models
- Resettable circuit protection

Applications

Almost anywhere there is a low voltage power supply, up to 60 V and a load to be protected, including:

- Security and fire alarm systems
- Loud speakers
- Power transformers

MF-RX Series - PTC Resettable Fuses

BOURNS®

Product Dimensions

| Model | A Max. | B Max. | C | | D Min. | E Max. | Physical Characteristics | | |
|----------|-----------------|-----------------|-----------------|----------------|----------------|----------------|--------------------------|-----------------|----------|
| | | | Nom. | Tol. ± | | | Style | Lead Dia. | Material |
| MF-RX110 | 13.0 (0.512) | 18.0 (0.709) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RX135 | 14.5 (0.571) | 19.6 (0.772) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RX160 | 16.3 (0.642) | 21.3 (0.839) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RX185 | 17.8 (0.701) | 22.9 (0.902) | 5.1 (0.201) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RX250 | 21.3 (0.839) | 26.4 (1.039) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RX300 | 24.9 (0.980) | 30.0 (1.181) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |
| MF-RX375 | 28.4 (1.118) | 33.5 (1.319) | 10.2 (0.402) | 0.7 (0.028) | 7.6 (0.299) | 3.1 (0.122) | 1 | 0.81 (0.032) | Sn/Cu |

Packaging options:

BULK: All models = 500 pcs. per bag.

TAPE & REEL: MF-RX110 – MF-RX160 = 1500 pcs. per reel; MF-RX185 – MF-RX375 = 1000 pcs. per reel

AMMO-PACK: MF-RX110 – MF-RX160 = 1000 pcs. per reel; MF-RX185 – MF-RX375 = 500 pcs. per reel

0.81 (20AWG)



NOTE: Kinked lead option is available for board standoff. Contact factory for details.

Typical Part Marking

Represents total content. Layout may vary.



How to Order

MF - RX 110 - 0 - 99

- Multifuse® Product Designator
- Series: RX = Radial Leaded Component
- Hold Current, I_{hold}: 110-375 (1.10 Amps - 3.75 Amps)
- Packaging Options:
 - = Bulk Packaging without part number suffix option
 - 0-99 = Bulk Packaging with part number suffix option
 - 2 = Tape and Reel without part number suffix option*
 - 2-99 = Tape and Reel with part number suffix option*
 - AP = Ammo-Pak*
 - 0-14 = Kinked leads where straight leads are standard
 - 0-17 = Straight leads where kinked leads are standard
- Part Number Suffix Option:
 - 99 = As of date code April 1, 2005 all MF-RX models are RoHS compliant. The suffix "-99" can be used if a new part number is required to reference the RoHS compliance.
- Examples:
 - MF-RX110 Bulk packaging
 - MF-RX110-0-99 Bulk packaging with part number suffix option
 - MF-RX110-2 Tape and reel packaging
 - MF-RX110-2-99 Tape and reel packaging with part number suffix option

Typical Time to Trip at 23 °C



*Packaged per EIA486-B

MF-RX SERIES, REV. M, 05/11

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

MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 & MF-RX/250 Series Tape and Reel Specifications

BOURNS®

Devices taped using EIA468-B/IEC286-2 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_0 | W_4 | $\frac{11}{(.433)}$ | min. |
| Hold down tape | | | 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 | l_1 | L_1 | $\frac{1.0}{(.039)}$ | max. |
| Protrusion of cutout | L | L | $\frac{11}{(.433)}$ | max. |
| Protrusion beyond hold-down tape | l_2 | l_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: MF-R005–MF-R160, MF-R/90, MF-RX110/72–MF-RX185/72 | | | $\frac{12.7}{(0.5)}$ | $\frac{\pm 0.3}{(\pm .012)}$ |
| Device pitch: MF-R185–MF-R400, MF-RX110–MF-RX375 MF-R/600, MF-RX250/72–MF-RX375/72 | | | $\frac{25.4}{(1.0)}$ | $\frac{\pm 0.6}{(\pm .024)}$ |
| Tape thickness | t | t | $\frac{0.9}{(.035)}$ | 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 alignment | | | 0 | $\frac{\pm 0.3}{(\pm .012)}$ |
| Body lateral deviation | Δ_h | Δ_h | 0 | $\frac{\pm 1.0}{(\pm .039)}$ |
| Body tape plane deviation | Δ_p | Δ_p | 0 | $\frac{\pm 1.3}{(\pm .051)}$ |

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

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

MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 & MF-RX/250 Series Tape and Reel Specifications

BOURNS®

| Dimension Description | IEC Mark | EIA Mark | Dimensions | | | |
|--|-----------------------|-----------------------|------------------|-----------------------------|----------------|------|
| | | | Dimensions | Tolerance | | |
| Lead spacing: MF-R, MF-R/90, MF-R/600, MF-RX, MF-RX/72 | <i>F</i> | <i>F</i> | 5.08 (0.2) | ±0.2 (±0.008) | | |
| Lead spacing: MF-RX/250 | <i>F</i> | <i>F</i> | 5.08 (0.2) | -0.5/+0.6 (-.020/+0.024) | | |
| Reel width | <i>w</i> | <i>W</i> ₂ | 56.0 (2.205) | max. | | |
| Reel diameter | <i>d</i> | <i>a</i> | 370.0 (14.57) | max. | | |
| Space between flanges less device | <i>W</i> ₁ | <i>h</i> | 4.75 (.187) | ±3.25 (±.128) | | |
| Arbor hole diameter | <i>f</i> | <i>c</i> | 26.0 (1.024) | ±12.0 (±.472) | | |
| Core diameter: MF-R, MF-RX, MF-R/90 | <i>h</i> | <i>n</i> | 80 (3.15) | max. | | |
| Core diameter: MF-RX/250, MF-R/600 | <i>h</i> | <i>n</i> | 91 (3.58) | max. | | |
| Box: MF-R, MF-RX, MF-R/90 | | | 56 (2.2) | 372 (14.6) | 372 (14.6) | max. |
| Box: MF-RX/250 | | | 67 (2.64) | 372 (14.6) | 362 (14.25) | max. |
| Box: MF-R/600 | | | 64 (2.52) | 372 (14.6) | 362 (14.25) | max. |
| Consecutive missing places: MF-R, MF-RX, MF-R/90 | | | 3 | max. | | |
| Consecutive missing places: MF-RX/250, MF-R/600 | | | none | | | |
| Empty places per reel: MF-R, MF-RX, MF-R/90 | | | | | Not specified | |
| Empty places per reel: MF-RX/250, MF-R/600 | | | | | 0.1 % | |

Taped Component Dimensions - Figure 1



Reel Dimensions - Figure 2



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

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А