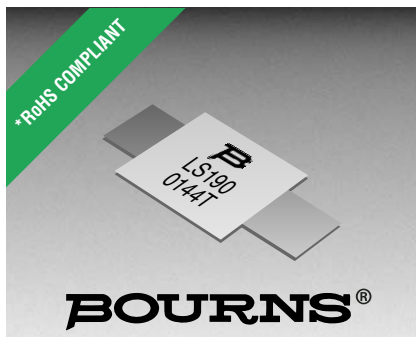




## Features

- Axial/radial leaded
- Fully compatible with current industry standards
- Weldable nickel terminals
- Very low internal resistance
- RoHS compliant\*, lead free
- Agency recognition:   

## Applications

- Any application that requires extra protection at elevated ambient temperatures, which the 100°C trip temperature provides.
- Rechargeable battery pack protection
  - Cellular phones
  - Laptop computers

## MF-LS Series - PTC Resettable Fuses

### Electrical Characteristics

| Model      | V max.<br>Volts | I max.<br>Amps | I <sub>hold</sub> | I <sub>trip</sub> | Initial Resistance |       | 1 Hour (R <sub>1</sub> )<br>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-LS070   | 15              | 100            | 0.7               | 1.5               | 0.100              | 0.200 | 0.340                                            | 3.5               | 5.0              | 1.0                       |
| MF-LS070S  | 15              | 100            | 0.7               | 1.5               | 0.100              | 0.200 | 0.340                                            | 3.5               | 5.0              | 1.0                       |
| MF-LS100S  | 24              | 100            | 1.0               | 2.5               | 0.070              | 0.130 | 0.260                                            | 5                 | 7.0              | 1.5                       |
| MF-LS180   | 24              | 100            | 1.8               | 3.8               | 0.040              | 0.068 | 0.120                                            | 9                 | 2.9              | 2.0                       |
| MF-LS180L  | 24              | 100            | 1.8               | 3.8               | 0.040              | 0.068 | 0.120                                            | 9                 | 2.9              | 2.0                       |
| MF-LS180S  | 24              | 100            | 1.8               | 3.8               | 0.040              | 0.068 | 0.120                                            | 9                 | 2.9              | 2.0                       |
| MF-LS190   | 24              | 100            | 1.9               | 4.2               | 0.030              | 0.057 | 0.100                                            | 10                | 3.0              | 1.9                       |
| MF-LS190RU | 15              | 100            | 1.9               | 4.2               | 0.030              | 0.057 | 0.100                                            | 10                | 3.0              | 1.9                       |
| MF-LS260   | 24              | 100            | 2.6               | 5.2               | 0.025              | 0.042 | 0.076                                            | 13                | 5.0              | 2.3                       |
| MF-LS300   | 24              | 100            | 3.0               | 6.3               | 0.015              | 0.031 | 0.055                                            | 15                | 4.0              | 2.0                       |
| MF-LS340   | 24              | 100            | 3.4               | 6.8               | 0.016              | 0.027 | 0.050                                            | 17                | 5.0              | 2.7                       |

Note: Slotted option available on all models.

### 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 .....±10 % typical resistance change  
 Humidity Aging.....+85 °C, 85 % R.H. 7 days .....±5 % typical resistance change  
 Vibration .....MIL-STD-883C, .....No change  
 Condition A

### Test Procedures And Requirements For Model MF-LS Series

| Test                  | Test Conditions                                        | Accept/Reject Criteria                    |
|-----------------------|--------------------------------------------------------|-------------------------------------------|
| Visual/Mech. ....     | Verify dimensions and materials.....                   | Per MF physical description               |
| Resistance .....      | In still air @ 23 °C .....                             | R <sub>min</sub> ≤ R ≤ R <sub>1</sub> max |
| Time to Trip .....    | At specified current, V <sub>max</sub> , 23 °C .....   | T ≤ max. time to trip (seconds)           |
| Hold Current .....    | 30 min. at I <sub>hold</sub> .....                     | No trip                                   |
| Trip Cycle Life ..... | V <sub>max</sub> , I <sub>max</sub> , 100 cycles ..... | No arcing or burning                      |
| Trip Endurance.....   | V <sub>max</sub> , 48 hours .....                      | No arcing or burning                      |

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

### Thermal Derating Chart - I<sub>hold</sub> / I<sub>trip</sub> (Amps)

| Model      | Ambient Operating Temperature |             |             |             |             |             |             |             |             |
|------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|            | -40 °C                        | -20 °C      | 0 °C        | 23 °C       | 40 °C       | 50 °C       | 60 °C       | 70 °C       | 85 °C       |
| MF-LS070   | 1.20 / 2.57                   | 1.09 / 2.33 | 0.85 / 1.82 | 0.70 / 1.50 | 0.50 / 1.07 | 0.45 / 0.96 | 0.35 / 0.75 | 0.28 / 0.60 | 0.16 / 0.34 |
| MF-LS070S  | 1.20 / 2.57                   | 1.09 / 2.33 | 0.85 / 1.82 | 0.70 / 1.50 | 0.50 / 1.07 | 0.45 / 0.96 | 0.35 / 0.75 | 0.28 / 0.60 | 0.16 / 0.34 |
| MF-LS100S  | 1.80 / 4.50                   | 1.60 / 4.00 | 1.40 / 3.50 | 1.00 / 2.50 | 0.80 / 2.00 | 0.70 / 1.75 | 0.60 / 1.50 | 0.40 / 1.00 | 0.20 / 0.50 |
| MF-LS180   | 3.10 / 6.54                   | 2.60 / 5.49 | 2.20 / 4.64 | 1.80 / 3.80 | 1.30 / 2.74 | 1.10 / 2.32 | 0.90 / 1.90 | 0.60 / 1.27 | 0.20 / 0.42 |
| MF-LS180L  | 3.10 / 6.54                   | 2.60 / 5.49 | 2.20 / 4.64 | 1.80 / 3.80 | 1.30 / 2.74 | 1.10 / 2.32 | 0.90 / 1.90 | 0.60 / 1.27 | 0.20 / 0.42 |
| MF-LS180S  | 3.10 / 6.54                   | 2.60 / 5.49 | 2.20 / 4.64 | 1.80 / 3.80 | 1.30 / 2.74 | 1.10 / 2.32 | 0.90 / 1.90 | 0.60 / 1.27 | 0.20 / 0.42 |
| MF-LS190   | 3.30 / 7.29                   | 2.80 / 6.19 | 2.40 / 5.31 | 1.90 / 4.20 | 1.40 / 3.09 | 1.20 / 2.65 | 1.10 / 2.43 | 0.70 / 1.55 | 0.40 / 0.88 |
| MF-LS190RU | 3.30 / 7.29                   | 2.80 / 6.19 | 2.40 / 5.31 | 1.90 / 4.20 | 1.40 / 3.09 | 1.20 / 2.65 | 1.10 / 2.43 | 0.70 / 1.55 | 0.40 / 0.88 |
| MF-LS260   | 4.30 / 8.60                   | 3.70 / 7.40 | 3.10 / 6.20 | 2.60 / 5.20 | 1.90 / 3.80 | 1.60 / 3.20 | 1.40 / 2.80 | 1.10 / 2.20 | 0.60 / 1.20 |
| MF-LS300   | 5.10 / 10.7                   | 4.40 / 9.24 | 3.70 / 7.77 | 3.00 / 6.30 | 2.30 / 4.83 | 1.90 / 3.99 | 1.60 / 3.36 | 1.20 / 2.52 | 0.60 / 1.26 |
| MF-LS340   | 5.50 / 11.0                   | 4.70 / 9.40 | 4.00 / 8.00 | 3.40 / 6.80 | 2.60 / 5.20 | 2.20 / 4.40 | 1.90 / 3.80 | 1.50 / 3.00 | 0.80 / 1.60 |

\*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

- Patents pending

# MF-LS Series - PTC Resettable Fuses

**BOURNS®**

## Product Dimensions

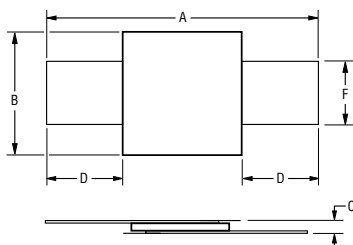
| Model      | A               |                 | B               |                 | C              |                 | D              |                | F              |                | Pkg. Style |
|------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|------------|
|            | Min.            | Max.            | Min.            | Max.            | Min.           | Max.            | Min.           | Max.           | Min.           | Max.           |            |
| MF-LS070   | 19.9<br>(0.783) | 22.1<br>(0.870) | 4.9<br>(0.193)  | 5.2<br>(0.205)  | 0.7<br>(0.028) | 1.2<br>(0.047)  | 5.5<br>(0.217) | 7.5<br>(0.295) | 3.8<br>(0.150) | 4.1<br>(0.161) | Std.       |
| MF-LS070S  | 19.9<br>(0.783) | 22.1<br>(0.870) | 4.9<br>(0.193)  | 5.2<br>(0.205)  | 0.7<br>(0.028) | 1.2<br>(0.047)  | 5.5<br>(0.217) | 7.5<br>(0.295) | 3.9<br>(0.154) | 4.1<br>(0.161) | S          |
| MF-LS100S  | 20.9<br>(0.823) | 23.1<br>(0.909) | 4.9<br>(0.193)  | 5.2<br>(0.205)  | 0.6<br>(0.024) | 1.0<br>(0.039)  | 4.1<br>(0.161) | 5.5<br>(0.217) | 3.8<br>(0.150) | 4.1<br>(0.161) | S          |
| MF-LS180   | 24.0<br>(0.945) | 26.0<br>(1.024) | 4.9<br>(0.193)  | 5.2<br>(0.205)  | 0.6<br>(0.024) | 1.0<br>(0.039)  | 4.1<br>(0.161) | 5.5<br>(0.217) | 3.8<br>(0.150) | 4.1<br>(0.161) | Std.       |
| MF-LS180L  | 35.0<br>(1.38)  | 37.5<br>(1.48)  | 4.9<br>(0.193)  | 5.6<br>(0.22)   | 0.6<br>(0.024) | 1.0<br>(0.039)  | 9.6<br>(0.38)  | 10.0<br>(0.40) | 3.8<br>(0.150) | 4.2<br>(0.17)  | Std.       |
| MF-LS180S  | 24.0<br>(0.945) | 26.0<br>(1.024) | 4.9<br>(0.193)  | 5.2<br>(0.205)  | 0.6<br>(0.024) | 1.0<br>(0.039)  | 4.1<br>(0.161) | 5.5<br>(0.217) | 3.8<br>(0.150) | 4.1<br>(0.161) | S          |
| MF-LS190   | 21.3<br>(0.839) | 23.4<br>(0.921) | 10.2<br>(0.402) | 11.0<br>(0.433) | 0.5<br>(0.020) | 1.1<br>(0.043)  | 5.0<br>(0.197) | 7.6<br>(0.299) | 4.8<br>(0.189) | 5.4<br>(0.213) | Std.       |
| MF-LS190RU | 19.8<br>(0.780) | 20.8<br>(0.819) | 13.3<br>(0.524) | 14.3<br>(0.563) | 0.4<br>(0.016) | 0.76<br>(0.030) | 8.1<br>(0.319) | 9.5<br>(0.374) | 3.8<br>(0.150) | 4.1<br>(0.161) | RU         |
| MF-LS260   | 24.0<br>(0.945) | 26.0<br>(1.024) | 10.8<br>(0.425) | 11.9<br>(0.469) | 0.6<br>(0.024) | 1.0<br>(0.039)  | 5.0<br>(0.197) | 7.0<br>(0.276) | 5.9<br>(0.232) | 6.1<br>(0.240) | Std.       |
| MF-LS300   | 28.4<br>(1.118) | 31.8<br>(1.252) | 13.0<br>(0.512) | 13.5<br>(0.531) | 0.5<br>(0.020) | 1.1<br>(0.043)  | 6.3<br>(0.248) | 8.9<br>(0.350) | 6.0<br>(0.236) | 6.6<br>(0.260) | Std.       |
| MF-LS340   | 24.0<br>(0.945) | 26.0<br>(1.024) | 14.8<br>(0.583) | 15.9<br>(0.626) | 0.6<br>(0.024) | 1.0<br>(0.039)  | 4.0<br>(0.158) | 5.0<br>(0.197) | 6.0<br>(0.236) | 6.1<br>(0.240) | Std.       |

Packaging: Bulk - 500 pcs. per bag.  
Tape and Reel - Consult factory.

NOTE: Longer lead option available. Consult factory.

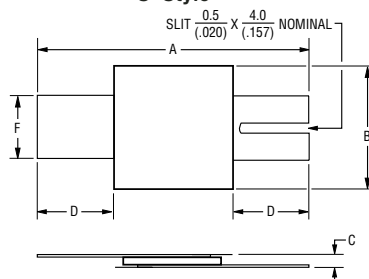
DIMENSIONS =  $\frac{\text{MM}}{(\text{INCHES})}$

Standard Style

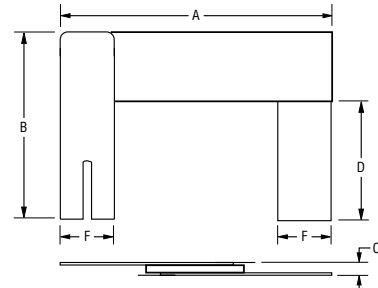


Terminal material: quarter-hard nickel

S Style

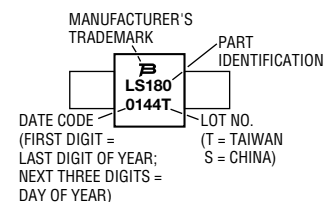


RU Style



## Typical Part Marking

Represents total content. Layout may vary.



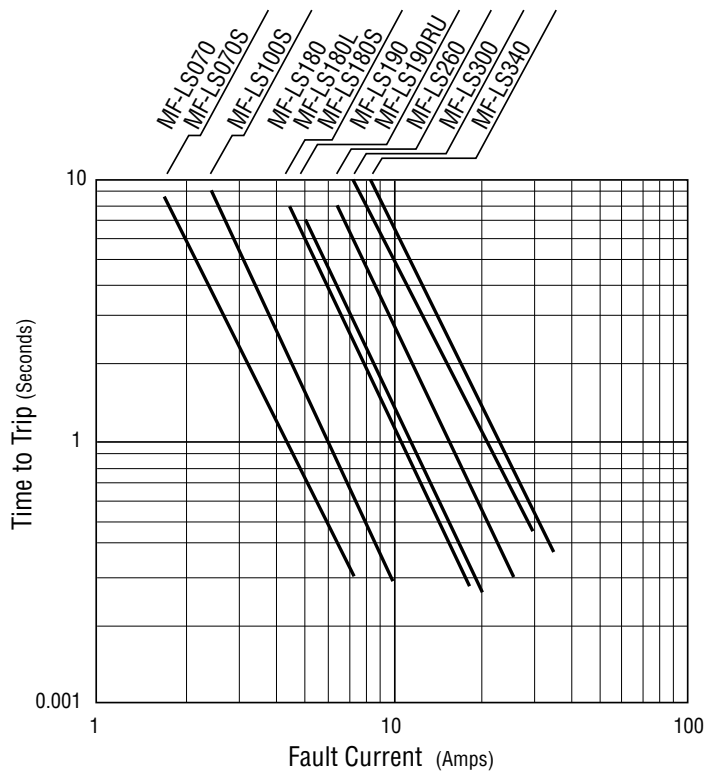
Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications.

# MF-LS Series - PTC Resettable Fuses

**BOURNS®**

## Typical Time to Trip at 23 °C

MF-LS models offer trip temperatures lower than MF-S models for extra protection at elevated temperatures.



## How To Order

**MF - LS 100 S -**

Multifuse® Product

Designator

Series

LS = Axial Leaded "Strap" Component

Hold Current,  $I_{hold}$

70-340 (0.70 Amps - 3.40 Amps)

Lead Option

S = Slotted Lead Option

RU = Radial Lead Option

Packaging Options

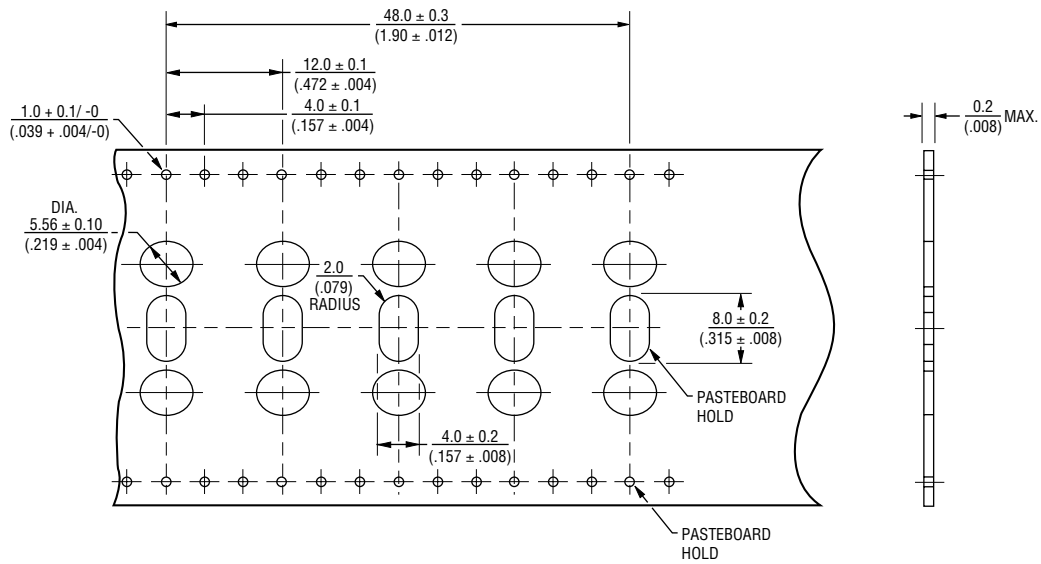
- = Bulk Packaging

- 2 = Tape and Reel\*

\*Packaged per EIA486-B

# MF-S, MF-LS, MF-LR and MF-VS Series Tape and Reel Specifications **BOURNS®**

## Taped Component Dimensions



## Reel Dimensions

