




## Features

- High power ratings
- Low profile
- Compatible with Pb and Pb-free solder reflow profiles
- RoHS compliant\* and halogen free\*\*
- Surface mount packaging for automated assembly
- Agency recognition:  
- Standard 7451 mm (2920 mils) footprint

## MF-LSMF Series – PTC Resettable Fuses

### Electrical Characteristics

| Model          | V <sub>max</sub> | I <sub>max</sub> | I <sub>hold</sub> | I <sub>trip</sub> | Resistance        |       | Max. Time to Trip |      | Tripped Power Dissipation | Agency Recognition        |     |
|----------------|------------------|------------------|-------------------|-------------------|-------------------|-------|-------------------|------|---------------------------|---------------------------|-----|
|                |                  |                  | at 23 °C          |                   | at 23 °C Ohms     |       | at 23 °C          |      | at 23 °C Watts            | cUL                       | TÜV |
|                | Volts            | Amps             | Amps              | R <sub>Min</sub>  | R <sub>1Max</sub> | Amps  | Seconds           | Typ. | <a href="#">E174545</a>   | <a href="#">R50256634</a> |     |
| MF-LSMF075X    | 30               | 40               | 0.75              | 1.5               | 0.15              | 1.00  | 8.0               | 0.3  | 1.5                       | ✓                         | ✓   |
| MF-LSMF110X    | 33               | 40               | 1.1               | 2.2               | 0.07              | 0.41  | 8.0               | 0.5  | 1.5                       | ✓                         | ✓   |
| MF-LSMF125X    | 15               | 40               | 1.25              | 2.5               | 0.05              | 0.25  | 8.0               | 2.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF125/33X | 33               | 40               | 1.25              | 2.5               | 0.055             | 0.25  | 8.0               | 2.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF150X    | 15               | 40               | 1.5               | 3.0               | 0.05              | 0.23  | 8.0               | 2.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF150/33X | 33               | 40               | 1.5               | 3.0               | 0.05              | 0.23  | 8.0               | 2.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF185X    | 15               | 40               | 1.85              | 3.7               | 0.045             | 0.15  | 8.0               | 2.5  | 1.5                       | ✓                         | ✓   |
| MF-LSMF185/24X | 24               | 40               | 1.85              | 3.7               | 0.045             | 0.15  | 8.0               | 2.5  | 1.5                       | ✓                         | ✓   |
| MF-LSMF185/33X | 33               | 40               | 1.85              | 3.7               | 0.045             | 0.15  | 8.0               | 2.5  | 1.5                       | ✓                         | ✓   |
| MF-LSMF200X    | 15               | 40               | 2.0               | 4.0               | 0.035             | 0.125 | 8.0               | 5.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF200/24X | 24               | 40               | 2.0               | 4.0               | 0.035             | 0.125 | 8.0               | 5.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF260X    | 24               | 40               | 2.6               | 5.2               | 0.020             | 0.075 | 8.0               | 5.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF260/6X  | 6                | 40               | 2.6               | 5.0               | 0.020             | 0.075 | 8.0               | 10   | 1.5                       | ✓                         | ✓   |
| MF-LSMF260/16X | 16               | 40               | 2.6               | 5.2               | 0.020             | 0.075 | 8.0               | 5.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF300X    | 6                | 40               | 3.0               | 5.0               | 0.015             | 0.048 | 8.0               | 15   | 1.5                       | ✓                         | ✓   |
| MF-LSMF300/16X | 16               | 40               | 3.0               | 5.0               | 0.015             | 0.048 | 8.0               | 15   | 1.5                       | ✓                         | ✓   |
| MF-LSMF300/24X | 24               | 40               | 3.0               | 5.2               | 0.015             | 0.075 | 8.0               | 15   | 1.5                       | ✓                         | ✓   |
| MF-LSMF330X    | 6                | 40               | 3.3               | 5.5               | 0.010             | 0.055 | 8.0               | 15   | 2.0                       | ✓                         | ✓   |
| MF-LSMF330/12X | 12               | 40               | 3.3               | 5.5               | 0.010             | 0.055 | 8.0               | 15   | 2.0                       | ✓                         | ✓   |
| MF-LSMF330/16X | 16               | 40               | 3.3               | 5.5               | 0.010             | 0.055 | 8.0               | 15   | 2.0                       | ✓                         | ✓   |
| MF-LSMF330/24X | 24               | 40               | 3.3               | 5.5               | 0.010             | 0.055 | 8.0               | 15   | 2.0                       | ✓                         | ✓   |
| MF-LSMF400/16X | 16               | 40               | 4.0               | 8.0               | 0.005             | 0.040 | 20                | 4.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF500/16X | 16               | 40               | 5.0               | 10.0              | 0.005             | 0.025 | 20                | 5.0  | 1.5                       | ✓                         | ✓   |
| MF-LSMF600/12X | 12               | 50               | 6.0               | 12.0              | 0.004             | 0.020 | 30                | 2.0  | 2.0                       | ✓                         | ✓   |

### Environmental Characteristics

| Item                             | Condition                               | Criteria  |
|----------------------------------|---|---|
| Operating Temperature            | -40 °C to +85 °C                        |   |
| Recommended Storage              | +40 °C max. / 70 % R.H. max.            |   |
| 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, 20 times              | ±10 % typical resistance change                       |
| Solvent Resistance               | MIL-STD-202, Method 215                 | No change (marking still legible)                     |
| Vibration                        | MIL-STD-883C, Method 2007.1 Condition A | No change (R <sub>min</sub> < R < R <sub>1max</sub> ) |
| Moisture Sensitivity Level (MSL) | <a href="#">See Note</a>                |   |
| ESD Classification               | Class 6 (per AEC-Q200-2, HBM)           |   |

### Additional Information

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**WARNING**  
Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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

- Industrial controls
- IEEE ports
- Portable electronics

## MF-LSMF Series - PTC Resettable Fuses

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### Test Procedures and Requirements

| Item              | Test Conditions                                    | Accept/Reject Criteria               |
|-------------------|--|--------------------------------------|
| Visual/Mechanical | Verify dimensions and materials                    | Per MF physical description          |
| Resistance        | In still air @ 23 °C                               | $R_{min} \leq R \leq R_{max}$        |
| Time to Trip      | At specified current, $V_{max}$ , 23 °C, still air | $T \leq$ max. time to trip (seconds) |
| Hold Current      | 30 min. at $I_{hold}$ , still air                  | 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                 |
| Solderability     | 245 °C $\pm$ 5 °C, 5 seconds                       | 95 % min. coverage                   |

### Product Dimensions

| Model          | A                      |                        | B                      |                        | C                      |                        | D                      |                        | E                      |                        |
|----------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                | Min.                   | Max.                   | Min.                   | Max.                   | Min.                   | Max.                   | Min.                   | Max.                   | Min.                   | Max.                   |
| MF-LSMF075X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF110X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF125X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF125/33X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF150X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF150/33X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF185X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF185/24X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF185/33X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ | $\frac{0.30}{(0.012)}$ | $\frac{2.50}{(0.098)}$ | $\frac{0.25}{(0.010)}$ | $\frac{2.00}{(0.079)}$ |
| MF-LSMF200X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF200/24X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF260X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF260/6X  | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF260/16X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF300X    | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.35}{(0.014)}$ | $\frac{0.85}{(0.033)}$ |                        |                        |                        |                        |
| MF-LSMF300/16X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |
| MF-LSMF300/24X | $\frac{6.73}{(0.265)}$ | $\frac{7.98}{(0.314)}$ | $\frac{4.80}{(0.189)}$ | $\frac{5.44}{(0.214)}$ | $\frac{0.75}{(0.030)}$ | $\frac{1.60}{(0.063)}$ |                        |                        |                        |                        |

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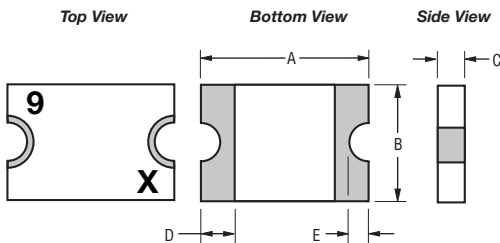
# MF-LSMF Series - PTC Resettable Fuses

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## Product Dimensions (continued)

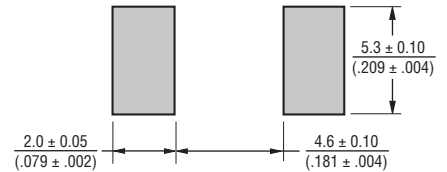
| Model          | A               |                 | B               |                 | C               |                 | D               |                 | E              |                |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
|                | Min.            | Max.            | Min.            | Max.            | Min.            | Max.            | Min.            | Max.            | Min.           | Max.           |
| MF-LSMF330X    | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.35<br>(0.014) | 0.85<br>(0.033) | 0.30<br>(0.012) | 2.50<br>(0.098) | 0.25<br>(.010) | 2.00<br>(.079) |
| MF-LSMF330/12X | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.75<br>(0.030) | 1.60<br>(0.063) |                 |                 |                |                |
| MF-LSMF330/16X | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.75<br>(0.030) | 1.60<br>(0.063) |                 |                 |                |                |
| MF-LSMF330/24X | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.75<br>(0.030) | 1.60<br>(0.063) |                 |                 |                |                |
| MF-LSMF400/16X | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.75<br>(0.030) | 1.60<br>(0.063) |                 |                 |                |                |
| MF-LSMF500/16X | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.75<br>(0.030) | 1.60<br>(0.063) |                 |                 |                |                |
| MF-LSMF600/12X | 6.73<br>(0.265) | 7.98<br>(0.314) | 4.80<br>(0.189) | 5.44<br>(0.214) | 0.75<br>(0.030) | 1.60<br>(0.063) |                 |                 |                |                |

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



**Terminal material:**  
Electroless Ni under immersion Au

### Recommended Pad Layout



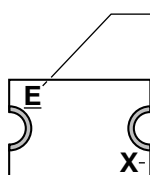
### How to Order

#### MF - LSMF 185/33X - 2

Multifuse® Product Designator \_\_\_\_\_  
Series \_\_\_\_\_  
LSMF = 7451 mm (2920 mils)  
Surface Mount Component  
Hold Current, I<sub>hold</sub> \_\_\_\_\_  
0.75-600 (0.75 Amps - 6.0 Amps)  
Voltage Option \_\_\_\_\_  
/33 = 33 Volt Rated  
X = Multifuse® freeXpansion™ Design  
Packaging \_\_\_\_\_  
-2 = Tape and Reel packaged per EIA-481

### Typical Part Marking

Represents total content. Layout may vary.



#### PART IDENTIFICATION EXAMPLES:

|                    |                    |                    |
|--------------------|--------------------|--------------------|
| MF-LSMF075X = 5    | MF-LSMF185X = N    | MF-LSMF300/16X = H |
| MF-LSMF110X = 6    | MF-LSMF185/24X = 9 | MF-LSMF300/24X = J |
| MF-LSMF125X = 7    | MF-LSMF185/33X = 9 | MF-LSMF330X = X    |
| MF-LSMF125/33X = L | MF-LSMF200X = A    | MF-LSMF330/12X = Q |
| MF-LSMF150X = M    | MF-LSMF200/24X = A | MF-LSMF330/16X = Q |
| MF-LSMF150/33X = 8 | MF-LSMF260X = E    | MF-LSMF330/24X = Q |
|                    | MF-LSMF260/6X = P  | MF-LSMF400/16X = K |
|                    | MF-LSMF260/16X = E | MF-LSMF500/16X = S |
|                    | MF-LSMF300X = F    | MF-LSMF600/12X = I |

**BI-WEEKLY DATE CODE:**  
WEEKS 47-48 = X

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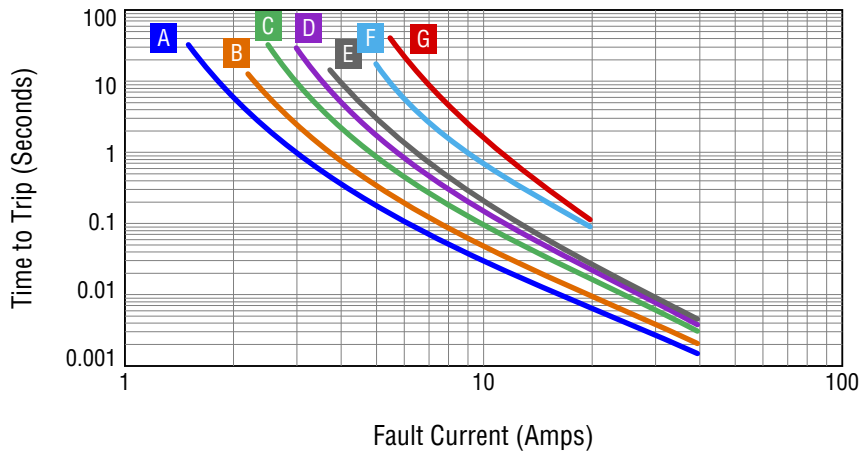
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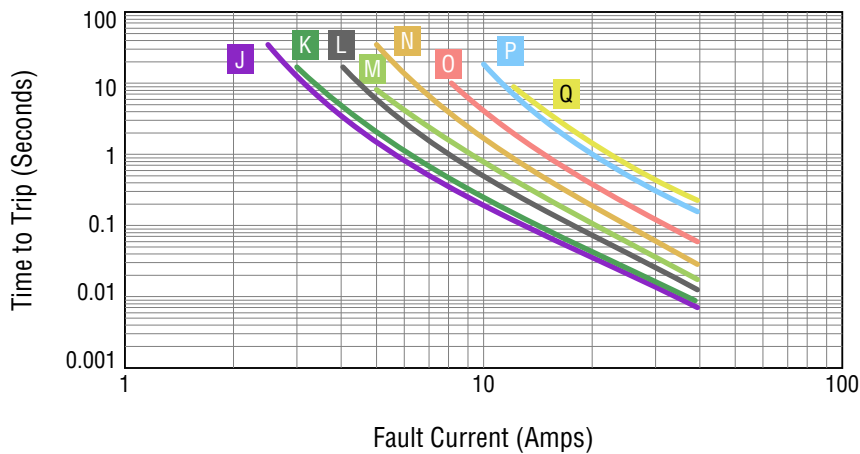
# MF-LSMF Series - PTC Resettable Fuses



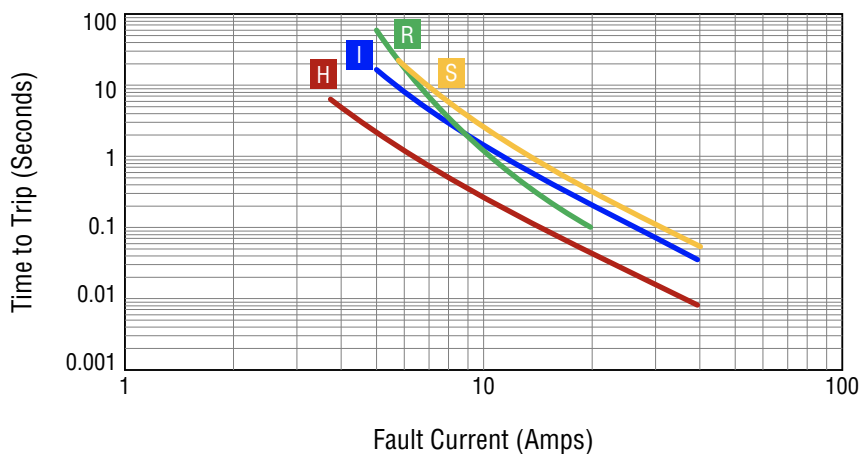
## Typical Time to Trip at 23 °C



- A** MF-LSMF075X
- B** MF-LSMF110X
- C** MF-LSMF125X
- D** MF-LSMF150X
- E** MF-LSMF185X
- F** MF-LSMF260/6X
- G** MF-LSMF330X



- J** MF-LSMF125/33X
- K** MF-LSMF150/33X
- L** MF-LSMF200X, MF-LSMF200/24X
- M** MF-LSMF260X, MF-LSMF260/16X
- N** MF-LSMF300/16X
- O** MF-LSMF400/16X
- P** MF-LSMF500/16X
- Q** MF-LSMF600/12X



- H** MF-LSMF185/24X, MF-LSMF185/33X
- I** MF-LSMF300/24X
- R** MF-LSMF300X
- S** MF-LSMF330/12X, MF-LSMF330/16X, MF-LSMF330/24X

The Time to Trip curves represent typical performance of a device in a simulated application environment. Actual performance in specific customer applications may differ from these values due to the influence of other variables.

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# MF-LSMF Series - PTC Resettable Fuses



## Thermal Derating Chart - I<sub>hold</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-LSMF075X    | 1.10                          | 1.01   | 0.89 | 0.75  | 0.63  | 0.56  | 0.50  | 0.44  | 0.34  |
| MF-LSMF110X    | 1.61                          | 1.47   | 1.30 | 1.10  | 0.92  | 0.83  | 0.73  | 0.64  | 0.50  |
| MF-LSMF125X    | 1.83                          | 1.68   | 1.48 | 1.25  | 1.05  | 0.94  | 0.83  | 0.73  | 0.56  |
| MF-LSMF125/33X | 1.83                          | 1.68   | 1.48 | 1.25  | 1.05  | 0.94  | 0.83  | 0.73  | 0.56  |
| MF-LSMF150X    | 2.19                          | 2.01   | 1.77 | 1.50  | 1.26  | 1.13  | 0.99  | 0.87  | 0.68  |
| MF-LSMF150/33X | 2.19                          | 2.01   | 1.77 | 1.50  | 1.26  | 1.13  | 0.99  | 0.87  | 0.68  |
| MF-LSMF185X    | 2.70                          | 2.48   | 2.18 | 1.85  | 1.55  | 1.39  | 1.22  | 1.07  | 0.83  |
| MF-LSMF185/24X | 2.80                          | 2.47   | 2.17 | 1.85  | 1.54  | 1.39  | 1.22  | 1.07  | 0.85  |
| MF-LSMF185/33X | 2.80                          | 2.47   | 2.17 | 1.85  | 1.54  | 1.39  | 1.22  | 1.07  | 0.85  |
| MF-LSMF200X    | 2.92                          | 2.68   | 2.36 | 2.00  | 1.68  | 1.50  | 1.32  | 1.16  | 0.90  |
| MF-LSMF200/24X | 2.92                          | 2.68   | 2.36 | 2.00  | 1.68  | 1.50  | 1.32  | 1.16  | 0.90  |
| MF-LSMF260X    | 3.75                          | 3.35   | 3.00 | 2.60  | 2.35  | 2.15  | 2.05  | 1.80  | 1.30  |
| MF-LSMF260/6X  | 3.80                          | 3.48   | 3.07 | 2.60  | 2.18  | 1.95  | 1.72  | 1.51  | 1.17  |
| MF-LSMF260/16X | 3.75                          | 3.35   | 3.00 | 2.60  | 2.35  | 2.15  | 2.05  | 1.80  | 1.30  |
| MF-LSMF300X    | 4.53                          | 4.02   | 3.51 | 3.00  | 2.52  | 2.26  | 1.99  | 1.75  | 1.34  |
| MF-LSMF300/16X | 4.38                          | 4.02   | 3.54 | 3.00  | 2.52  | 2.25  | 1.98  | 1.74  | 1.35  |
| MF-LSMF300/24X | 4.00                          | 3.55   | 3.20 | 3.30  | 2.50  | 2.25  | 2.15  | 1.85  | 1.50  |
| MF-LSMF330X    | 4.82                          | 4.42   | 3.89 | 3.30  | 2.77  | 2.48  | 2.18  | 1.91  | 1.49  |
| MF-LSMF330/12X | 4.82                          | 4.42   | 3.89 | 3.30  | 2.77  | 2.48  | 2.18  | 1.91  | 1.49  |
| MF-LSMF330/16X | 4.82                          | 4.42   | 3.89 | 3.30  | 2.77  | 2.48  | 2.18  | 1.91  | 1.49  |
| MF-LSMF330/24X | 4.82                          | 4.42   | 3.89 | 3.30  | 2.77  | 2.48  | 2.18  | 1.91  | 1.49  |
| MF-LSMF400/16X | 5.84                          | 5.36   | 4.72 | 4.00  | 3.36  | 3.00  | 2.64  | 2.32  | 1.80  |
| MF-LSMF500/16X | 7.30                          | 6.70   | 5.90 | 5.00  | 4.20  | 3.75  | 3.30  | 2.90  | 2.25  |
| MF-LSMF600/12X | 8.76                          | 8.04   | 7.08 | 6.00  | 5.04  | 4.50  | 3.96  | 3.48  | 2.70  |

## Packaging Quantity

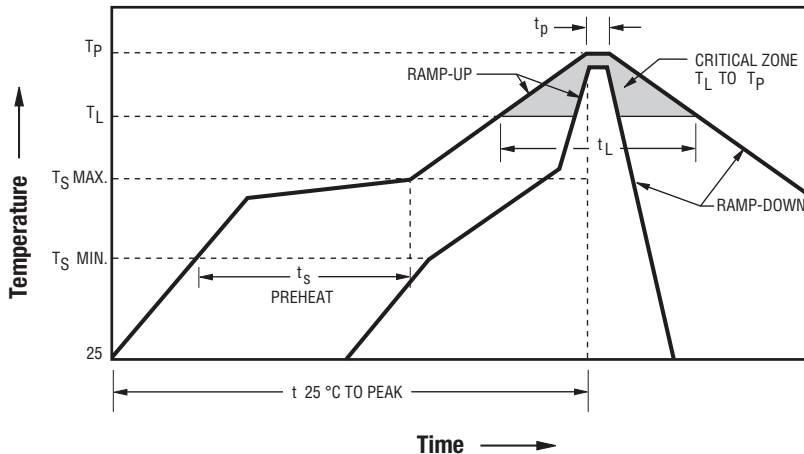
| Model   | Unit Quantity (pcs.) | Unit |
|---|----------------------|------|
| MF-LSMF125/33X<br>MF-LSMF150/33X<br>MF-LSMF185/24X<br>MF-LSMF185/33X<br>MF-LSMF200X<br>MF-LSMF200/24X | 4000                 | Reel |
| MF-LSMF075X<br>MF-LSMF110X<br>MF-LSMF125X   | 6000                 | Reel |

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**Solder Reflow Recommendations**



**Notes:**

- MF-LSMF models are intended for reflow soldering (including but not limited to heating plate, hot air, IR, nitrogen, and vapor phase).
- Wave soldering is permissible only if the device is on the top of the PCB, opposite the heat source.
- Hand soldering is not recommended for these devices.
- All temperatures refer to the topside of the device, measured on the device body surface.
- If reflow temperatures exceed the recommended profile, devices may not meet the published specifications.
- Compatible with Pb and Pb-free solder reflow profiles.
- Excess solder may cause a short circuit.
- Please refer to the [Multifuse® Polymer PTC Resettable Fuse Soldering Recommendations](#) document for more details.

| Profile Feature                                     | Pb-Free Assembly   |
|---|--------------------|
| Average Ramp-Up Rate (TS <sub>max</sub> to Tp)      | 3 °C / second max. |
| PREHEAT:  |                    |
| Temperature Min. (TS <sub>min</sub> )               | 150 °C             |
| Temperature Max. (TS <sub>max</sub> )               | 200 °C             |
| Time (TS <sub>min</sub> to TS <sub>max</sub> ) (ts) | 60~180 seconds     |
| TIME MAINTAINED ABOVE:                              |                    |
| Temperature (TL)                                    | 217 °C             |
| Time (tL)   | 60~150 seconds     |
| Peak Temperature (Tp)                               | 260 °C             |
| Time within 5 °C of Actual Peak Temperature (tp)    | 20~40 seconds      |
| Ramp-Down Rate                                      | 6 °C / second max. |
| Time 25 °C to Peak Temperature                      | 8 minutes max.     |

# MF-LSMF Series Tape and Reel Specifications

# BOURNS®

MF-LSMF075X, MF-LSMF110X,  
MF-LSMF125X, MF-LSMF150X,  
MF-LSMF185X, MF-LSMF260/6X,  
MF-LSMF300X & MF-LSMF330X

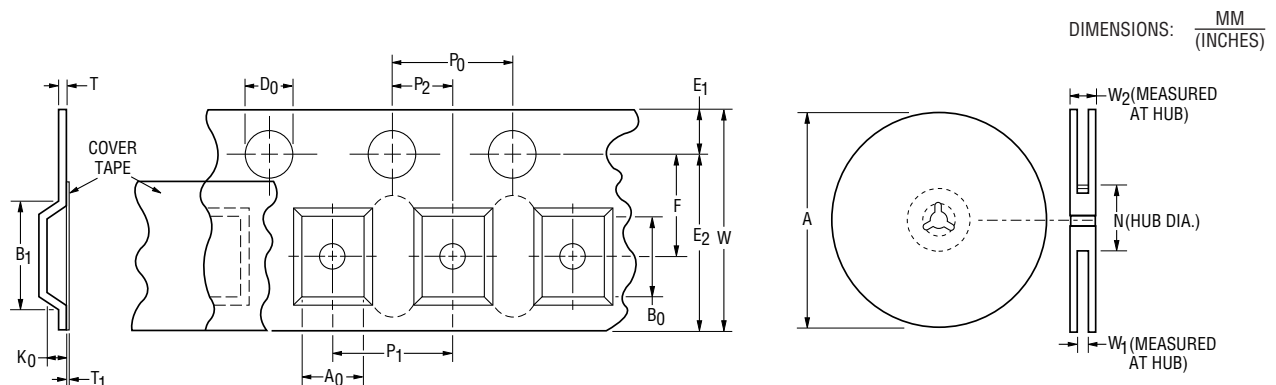
MF-LSMF125/33X, MF-LSMF150/33X, MF-LSMF185/24X,  
MF-LSMF185/33X, MF-LSMF200X, MF-LSMF200/24X,  
MF-LSMF260X, MF-LSMF260/16X, MF-LSMF300/16X,  
MF-LSMF300/24X, MF-LSMF330/12X, MF-LSMF330/16X,  
MF-LSMF330/24X, MF-LSMF400/16X, MF-LSMF500/16X  
& MF-LSMF600/12X

## Tape Dimensions per EIA 481

|                     |  |  |
|---------------------|--|--|
| W                   | $\frac{16.0 \pm 0.30}{(0.630 \pm 0.012)}$  | $\frac{16.0 \pm 0.30}{(0.630 \pm 0.012)}$  |
| P <sub>0</sub>      | $\frac{4.0 \pm 0.10}{(0.157 \pm 0.004)}$   | $\frac{4.0 \pm 0.10}{(0.157 \pm 0.004)}$   |
| 10 P <sub>0</sub>   | $\frac{40 \pm 0.20}{(1.575 \pm 0.008)}$    | $\frac{40 \pm 0.20}{(1.575 \pm 0.008)}$    |
| P <sub>1</sub>      | $\frac{8.0 \pm 0.10}{(0.315 \pm 0.004)}$   | $\frac{8.0 \pm 0.10}{(0.315 \pm 0.004)}$   |
| P <sub>2</sub>      | $\frac{2.0 \pm 0.10}{(0.079 \pm 0.004)}$   | $\frac{2.0 \pm 0.10}{(0.079 \pm 0.004)}$   |
| A <sub>0</sub>      | $\frac{5.74 \pm 0.10}{(0.226 \pm 0.004)}$  | $\frac{5.70 \pm 0.10}{(0.224 \pm 0.004)}$  |
| B <sub>0</sub>      | $\frac{8.02 \pm 0.10}{(0.316 \pm 0.004)}$  | $\frac{8.10 \pm 0.10}{(0.319 \pm 0.004)}$  |
| B <sub>1</sub> max. | $\frac{12.1}{(0.476)}$                     | $\frac{12.1}{(0.476)}$                     |
| D <sub>0</sub>      | $\frac{1.5 + 0.10/-0}{(0.059 + 0.004/-0)}$ | $\frac{1.5 + 0.10/-0}{(0.059 + 0.004/-0)}$ |
| F                   | $\frac{7.5 \pm 0.10}{(0.295 \pm 0.004)}$   | $\frac{7.5 \pm 0.10}{(0.295 \pm 0.004)}$   |
| E <sub>1</sub>      | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$  | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$  |
| E <sub>2</sub> min. | $\frac{14.25}{(0.561)}$                    | $\frac{14.25}{(0.561)}$                    |
| T max.              | $\frac{0.6}{(0.024)}$                      | $\frac{0.6}{(0.024)}$                      |
| T <sub>1</sub> max  | $\frac{0.1}{(0.004)}$                      | $\frac{0.1}{(0.004)}$                      |
| K <sub>0</sub>      | $\frac{0.91 \pm 0.10}{(0.036 \pm 0.004)}$  | $\frac{1.70 \pm 0.10}{(0.067 \pm 0.004)}$  |
| Leader min.         | $\frac{390}{(15.35)}$                      | $\frac{390}{(15.35)}$                      |
| Trailer min.        | $\frac{160}{(6.30)}$                       | $\frac{160}{(6.30)}$                       |

## Reel Dimensions

|                     |  |  |
|---------------------|--|--|
| A max.              | $\frac{331}{(13.03)}$                      | $\frac{331}{(13.03)}$                      |
| N min.              | $\frac{50}{(1.97)}$                        | $\frac{50}{(1.97)}$                        |
| W <sub>1</sub>      | $\frac{16.4 + 2.0/-0}{(0.646 + 0.079/-0)}$ | $\frac{16.4 + 2.0/-0}{(0.646 + 0.079/-0)}$ |
| W <sub>2</sub> max. | $\frac{22.4}{(0.882)}$                     | $\frac{22.4}{(0.882)}$                     |



## MF-LSMF SERIES, REV. J, 03/22

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