Applications

- Automotive electronics
- Industrial controls
- IEEE ports
- Portable electronics

MF-LSMF Series - PTC Resettable Fuses

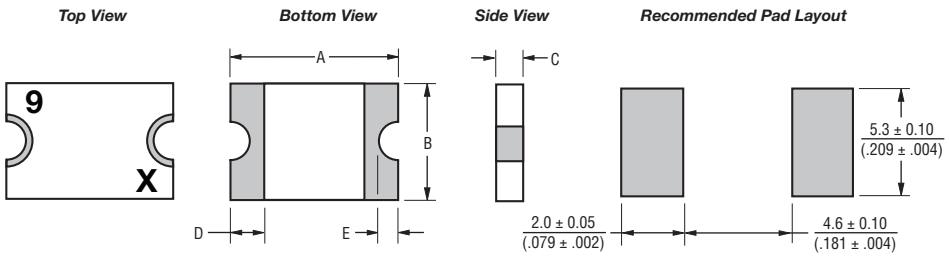
BOURNS®

Product Dimensions

Model	A		B		C		D	E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Max.
MF-LSMF185/33X	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.75 (0.030)	1.60 (0.063)	0.30 (0.012)	0.25 (.010)	2.00 (.079)
MF-LSMF260X	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.75 (0.030)	1.60 (0.063)	0.30 (0.012)	0.25 (.010)	2.00 (.079)
MF-LSMF300X	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.35 (0.014)	0.85 (0.033)	0.30 (0.012)	0.25 (.010)	2.00 (.079)
MF-LSMF300/24X	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.75 (0.030)	1.60 (0.063)	0.30 (0.012)	0.25 (.010)	2.00 (.079)
MF-LSMF400/12X	6.73 (0.265)	7.98 (0.312)	4.80 (0.189)	5.44 (0.214)	0.65 (0.026)	1.60 (0.063)	0.30 (0.012)	0.25 (.010)	2.00 (.079)

Packaging: 3000 pcs. per reel.

DIMENSIONS: MM (INCHES)

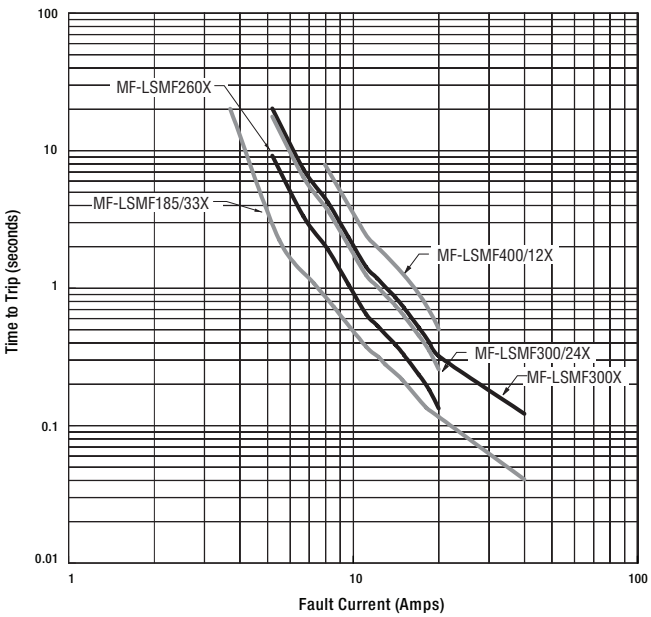


Terminal material:
Electroless Ni under immersion Au

Termination pad solderability:
Standard Au finish:
Meets ANSI/J-STD-002 Category 2.

Recommended Storage:
40 °C max./70 % RH max.

Typical Time to Trip at 23 °C

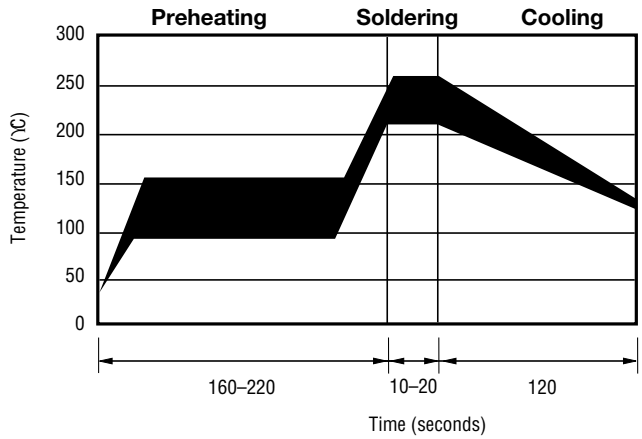


The Time to Trip curves represent typical performance of a device in a simulated application environment. Actual performance in specific customer applications may differ from these values due to the influence of other variables.

Thermal Derating Chart - I_{hold} (Amps)

Model	Ambient Operating Temperature								
	-40 ˚C	-20 ˚C	0 ˚C	23 ˚C	40 ˚C	50 ˚C	60 ˚C	70 ˚C	85 ˚C
MF-LSMF185/33X	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
MF-LSMF260X	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-LSMF300/24X	4.00	3.55	3.20	3.00	2.50	2.25	2.15	1.85	1.50
MF-LSMF400/12X	5.30	4.70	4.25	4.00	3.30	3.00	2.85	2.45	2.00

Solder Reflow Recommendations



Notes:

- MF-LSMF models cannot be wave soldered. Please contact Bourns for hand soldering recommendations.
- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- Compatible with Pb and Pb-free solder reflow profiles.

How to Order

MF - LSMF 185/33X - 2

Multifuse® Product Designator

Series
LSMF = 7555 mm (2920 mils) Surface Mount Component

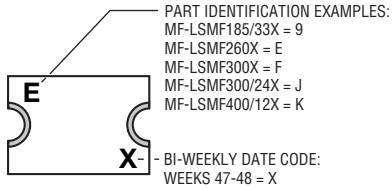
Hold Current, Ihold
185-400 (1.85 Amps - 4.00 Amps)

Higher Voltage Option
/12 = 12 Volt Rated
/24 = 24 Volt Rated
/33 = 33 Volt Rated
X = Multifuse® freeXpansion™ Design MF-LSMF Series

Packaging
Packaged per EIA 481-1
-2 = Tape and Reel

Typical Part Marking

Represents total content. Layout may vary.



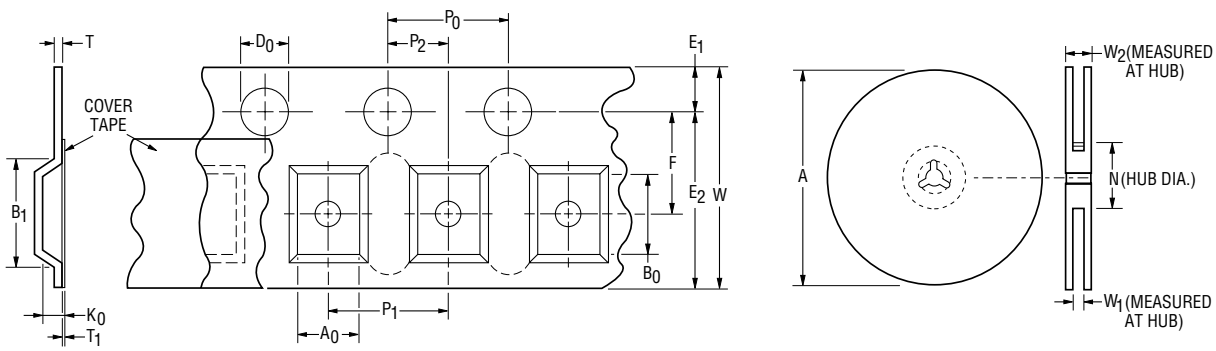
MF-LSMF Series Tape and Reel Specifications

BOURNS®

NOTE: Effective December 1, 2010 (product date code "X"), the cover tape was changed to the new 3M™ Universal Cover Tape (UCT).

Tape Dimensions	MF-LSMF300X per EIA 481-2	MF-LSMF185/33X, MF-LSMF260X, MF-LSMF300/24X, MF-LSMF400/12X per EIA 481-2
W	16.0 ± 0.30 (0.630 ± 0.012)	16.0 ± 0.30 (0.630 ± 0.012)
P_0	4.0 ± 0.10 (0.157 ± 0.004)	4.0 ± 0.10 (0.157 ± 0.004)
P_1	8.0 ± 0.10 (0.315 ± 0.004)	8.0 ± 0.10 (0.315 ± 0.004)
P_2	2.0 ± 0.05 (0.079 ± 0.002)	2.0 ± 0.05 (0.079 ± 0.002)
A_0	5.74 ± 0.10 (0.226 ± 0.004)	5.70 ± 0.10 (0.224 ± 0.004)
B_0	8.02 ± 0.10 (0.316 ± 0.004)	8.10 ± 0.10 (0.319 ± 0.004)
B_1 max.	12.1 (0.476)	12.1 (0.476)
D_0	1.5 + 0.10/-0.0 (0.059 + 0.004/-0)	1.5 + 0.10/-0.0 (0.059 + 0.004/-0)
F	7.5 ± 0.05 (0.295 ± 0.002)	7.5 ± 0.05 (0.295 ± 0.002)
E_1	1.75 ± 0.10 (0.069 ± 0.004)	1.75 ± 0.10 (0.069 ± 0.004)
E_2 min.	14.25 (0.561)	14.25 (0.561)
T max.	0.6 (0.024)	0.6 (0.024)
T_1 max.	0.1 (0.004)	0.1 (0.004)
K_0	0.91 ± 0.10 (0.036 ± 0.004)	1.70 ± 0.10 (0.067 ± 0.004)
Leader min.	390 (15.35)	390 (15.35)
Trailer min.	160 (6.30)	160 (6.30)
Reel Dimensions		
A max.	331 (13.03)	331 (13.03)
N min.	50 (1.97)	50 (1.97)
W_1	16.4 + 2.0/-0.0 (0.646 + 0.079/-0.0)	16.4 + 2.0/-0.0 (0.646 + 0.079/-0.0)
W_2 max.	22.4 (0.882)	22.4 (0.882)

DIMENSIONS: MM (INCHES)



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

- Users are responsible for independent and adequate evaluation of Bourns® Multifuse® Polymer PTC devices in the user's application, including the PPTC device characteristics stated in the applicable data sheet.
- Polymer PTC devices must not be allowed to operate beyond their stated maximum ratings. Operation in excess of such maximum ratings could result in damage to the PTC device and possibly lead to electrical arcing and/or fire. Circuits with inductance may generate a voltage above the rated voltage of the polymer PTC device and should be thoroughly evaluated within the user's application during the PTC selection and qualification process.
- Polymer PTC devices are intended to protect against adverse effects of temporary overcurrent or overtemperature conditions up to rated limits and are not intended to serve as protective devices where overcurrent or overvoltage conditions are expected to be repetitive or prolonged.
- In normal operation, polymer PTC devices experience thermal expansion under fault conditions. Thus, a polymer PTC device must be protected against mechanical stress, and must be given adequate clearance within the user's application to accommodate such thermal expansion. Rigid potting materials or fixed housings or coverings that do not provide adequate clearance should be thoroughly examined and tested by the user, as they may result in the malfunction of polymer PTC devices if the thermal expansion is inhibited.
- Exposure to lubricants, silicon-based oils, solvents, gels, electrolytes, acids, and other related or similar materials may adversely affect the performance of polymer PTC devices.
- Aggressive solvents may adversely affect the performance of polymer PTC devices. Conformal coating, encapsulating, potting, molding, and sealing materials may contain aggressive solvents including but not limited to xylene and toluene, which are known to cause adverse effects on the performance of polymer PTCs. Such aggressive solvents must be thoroughly cured or baked to ensure their complete removal from polymer PTCs to minimize the possible adverse effect on the device.
- Recommended storage conditions should be followed at all times. Such conditions can be found on the applicable data sheet and on the Multifuse® Polymer PTC Moisture/Reflow Sensitivity Classification (MSL) note: https://www.bourns.com/docs/RoHS-MSL/msl_mf.pdf

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The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the above provisions applicable to Bourns® standard products shall also apply to such Bourns® custom products.

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