BOURNS®

Features

- Surface Mount Devices
- Fully compatible with current industry standards
- Packaged per EIA 481-2 standard
- Agency recognition:
- Patents pending

Applications

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

- IEEE 1394
- Computers & peripherals
- General electronics

MF-SM/33 Series - PTC Resettable Fuses

Electrical Characteristics

Model	V max. Volts	I max. Amps	I_{hold}	I_{trip}	Resistance		Max. Time To Trip		Tripped Power Dissipation
			Amperes at 23°C		Ohms at 23°C		Amperes at 23°C	Seconds at 23°C	Watts at 23°C
			Hold	Trip	$R_{Min.}$	$R_{1Max.}$			
MF-SM100/33	33	40	1.0	2.00	0.12	0.41	8.0	0.5	1.7
MF-SM150/33	33	40	1.5	3.00	0.06	0.23	8.0	5.0	1.9

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. 7 days .....±5% typical resistance change
Thermal Shock .....MIL-STD-202F, Method 107G, +125°C to -55°C,10 cycles .....±10% typical resistance change
Vibration .....MIL-STD-883C, Method 2007.1, Condition A .....No change

Test Procedures And Requirements For Model MF-SM/33 Series

Test	Test Conditions	Accept/Reject Criteria
Visual/Mech.	Verify dimensions and materials	Per MF physical description
Resistance	In still air @ 23°C	Rmin ≤ R ≤ Rmax
Time to Trip	At specified current, Vmax, 23°C	T ≤ max. time to trip (seconds)
Hold Current	30 min. at Ihold	No trip
Trip Cycle Life	Vmax, Imax, 100 cycles	No arcing or burning
Trip Endurance	Vmax, 48 hours	No arcing or burning
Solderability	MIL-STD-202F, Method 208F	95% min. coverage

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

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-SM100/33	1.66	1.47	1.29	1.10	0.91	0.83	0.73	0.64	0.50
MF-SM150/33	2.27	2.01	1.76	1.50	1.25	1.13	1.00	0.87	0.68

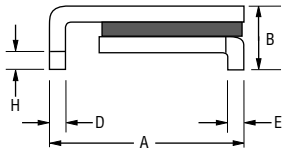
*I_{trip} is approximately two times I_{hold}.

Product Dimensions

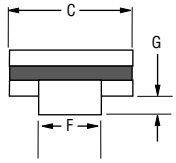
Model	A		B	C	D		E		F		G		H
	Min.	Max.	Max.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
MF-SM100/33	6.73 (0.265)	7.98 (0.314)	3.00 (0.118)	5.44 (0.214)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	2.16 (0.085)	2.41 (0.095)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)
MF-SM150/33	8.00 (0.315)	9.50 (0.374)	3.00 (0.118)	6.71 (0.264)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	3.68 (0.145)	3.94 (0.155)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)

DIMENSIONS = MM / (INCHES)

Terminal material:
Tin-plated brass

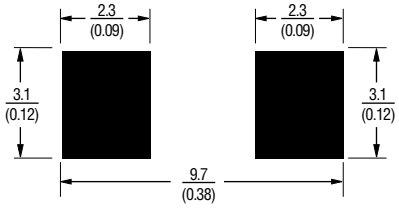


Side View

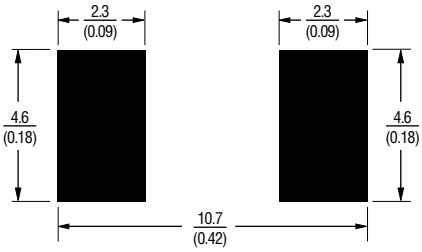


End View

Recommended Pad Layout - MF-SM100/33

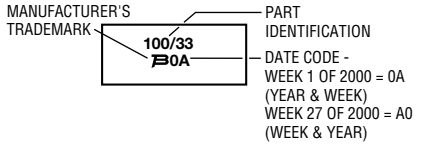


Recommended Pad Layout - MF-SM150/33



Typical Part Marking

Represents total content. Layout may vary.



How to Order

MF - SM 100/33 - 2

Multifuse® Product Designator

Series
SM = Surface Mount Component

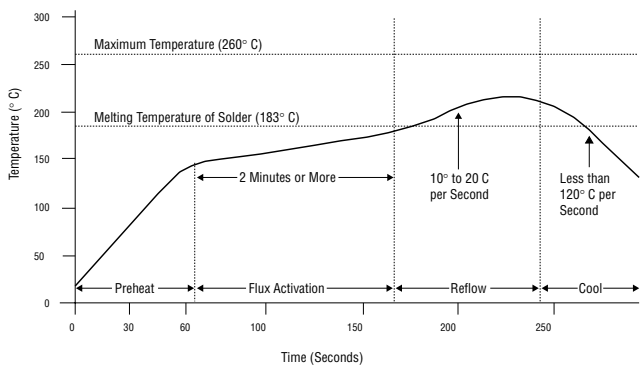
Hold Current, Ihold
100, 150 (1.0 Amp - 1.5 Amps)

Max. Voltage, V

Packaging Options
- 2 = Tape and Reel*

*Packaged per EIA486-B

Solder Reflow Recommendations



Solder reflow

- Recommended reflow methods: IR, vapor phase oven, hot air oven.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Gluing the devices is not recommended.
- Recommended maximum paste thickness is 0.25 mm (.010 inch).
- Devices can be cleaned using standard industry methods and solvents.

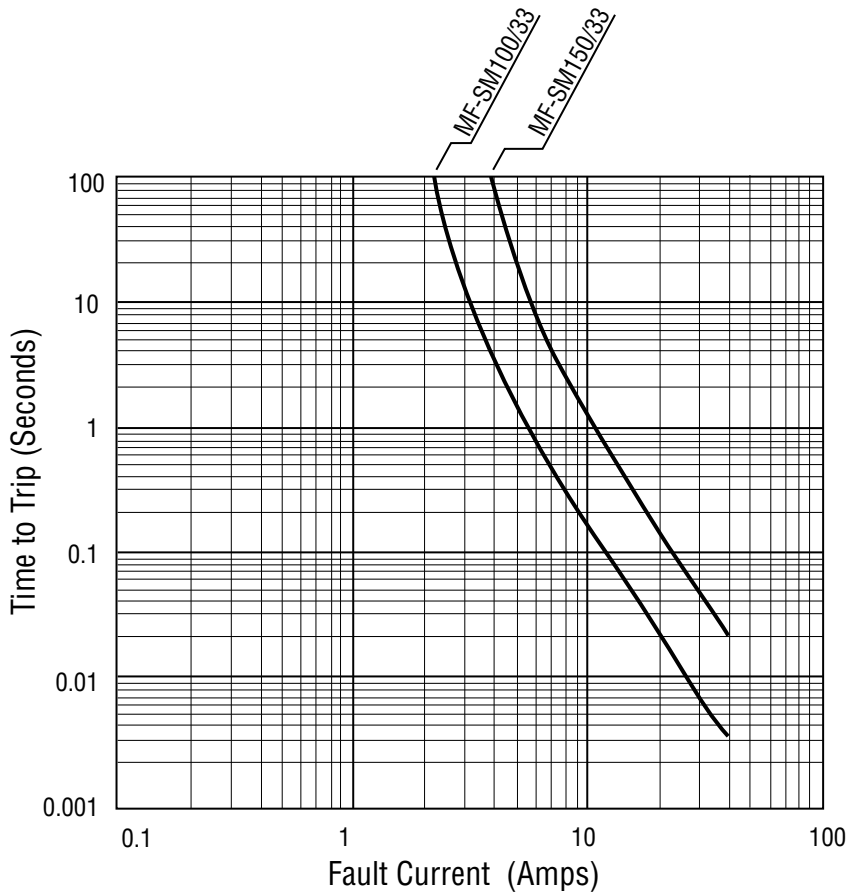
Note:

- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Rework

- A device should not be reworked.

Typical Time to Trip at 23°C



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