

Features

- Axial leaded
- Fully compatible with current industry standards
- Weldable nickel terminals
- Very low internal resistance
- Low switching temperature
- RoHS compliant*, lead free

Applications

- Any application that requires protection at low resistances
- Rechargeable battery packs; designed for NiMH and Li-Ion chemical characteristics
- Cellular phones
- Laptop computers

MF-VS Series - PTC Resettable Fuses

Electrical Characteristics

Model	V max. Volts	I max. Amps	I_{hold} Amperes At 23 °C	I_{trip} Amperes At 23 °C	Initial Resistance Ohms At 23 °C			1 Hour (R_1) Post-Trip Resistance Ohms At 23 °C	Max. Time To Trip		Tripped Power Dissipation Watts At 23 °C
									Amperes At 23 °C	Seconds At 23 °C	
			Hold	Trip	Min.	Max.	Typ.	Max.			Typ.
MF-VS170	16	100	1.7	3.4	0.030	0.052	0.040	0.105	8.5	3.0	1.4
MF-VS210	16	100	2.1	4.7	0.018	0.030	0.022	0.060	10.0	5.0	1.5
MF-VS240	16	100	2.4	5.9	0.014	0.026	0.020	0.052	12.0	6.0	1.9

Environmental Characteristics

Operating/Storage Temperature .....-40 °C to +85 °C
Maximum Device Surface Temperature
in Tripped State .....125 °C
Passive Aging.....+60 °C, 1000 hours .....±10 % typical resistance change
Humidity Aging.....+60 °C, 85 % R.H.1000 hours .....±10 % typical resistance change
Thermal Shock .....MIL-STD-202F, Method 107G .....±5 % typical resistance change
+85 °C to -40 °C, 10 times
Vibration .....MIL-STD-883C, ...No change
Condition A

Test Procedures And Requirements For Model MF-VS 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 ≤ R1max
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

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-VS170	3.2	2.7	2.2	1.7	1.3	1.1	0.8	0.6	0.1
MF-VS210	4.1	3.5	2.9	2.1	1.6	1.3	1.0	0.7	0.1
MF-VS240	4.2	3.6	3.0	2.4	1.9	1.5	1.2	0.8	0.1

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

*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-VS 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-VS170	16.0 (0.630)	18.0 (0.709)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)	Std.
MF-VS170S	16.0 (0.630)	18.0 (0.709)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)	Std.
MF-VS210	20.9 (0.823)	23.1 (0.909)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)	Std.
MF-VS210L	24.0 (0.945)	26.5 (1.043)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	5.0 (0.197)	7.1 (0.280)	3.9 (0.154)	4.1 (0.161)	Std.
MF-VS210S	20.9 (0.823)	23.1 (0.909)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)	S
MF-VS240	24.0 (0.945)	26.2 (1.031)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)	Std.
MF-VS240S	24.0 (0.945)	26.2 (1.031)	4.9 (0.193)	5.5 (0.217)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)	S

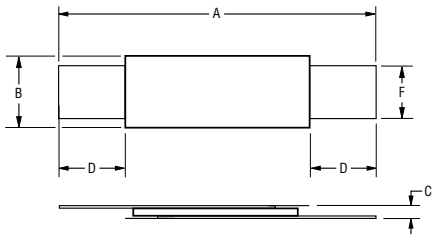
Packaging: Bulk - 500 pcs. per bag. Tape and Reel - Consult factory.

Leads: 1/4 Hardened Nickel 0.125 mm (.005 ") nom.

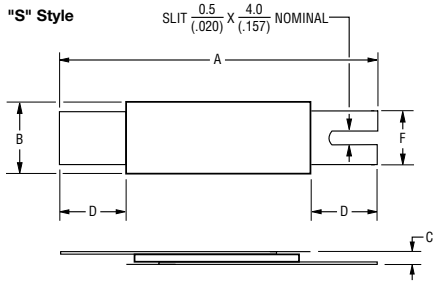
DIMENSIONS = MM / (INCHES)

NOTE: All "S" style models available with 1 or 2 slots. The dimensions and shape of the leads can be modified to suit the battery pack design. All models are available without insulation wrapping.

Standard Style

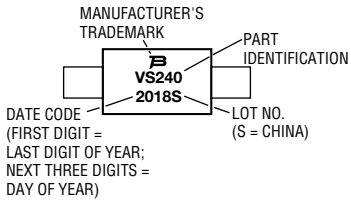


"S" Style



Typical Part Marking

Represents total content. Layout may vary.



How To Order

MF - VS 240 _ _ _ _

Multifuse® Product Designator

Series
VS = Axial Leaded "Strap" Component

Hold Current, I_{hold}
170-240 (1.7 Amps - 2.4 Amps)

Lead Option
S = Slotted Lead Option (one side)
SS = Slotted Lead Option (two sides)

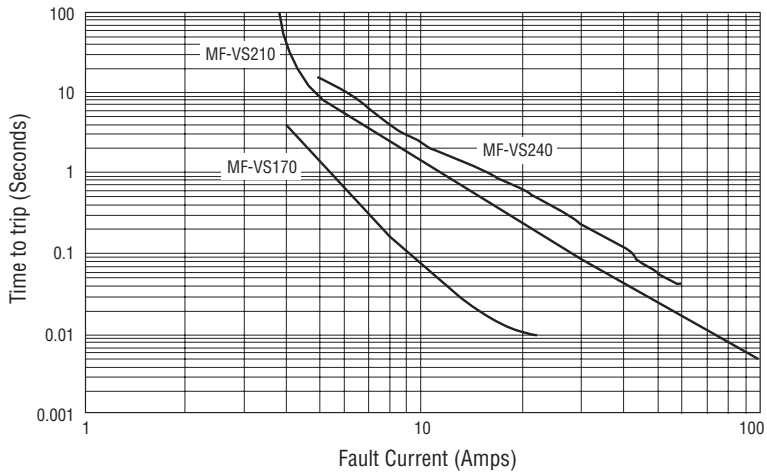
Longer Lead Option
L = Longer Leads

Insulating Option
U = Non-Insulated Option

Packaging Options
- 0 = Bulk Packaging
- 2 = Tape and Reel* (Consult factory)

*Packaged per EIA 486-B

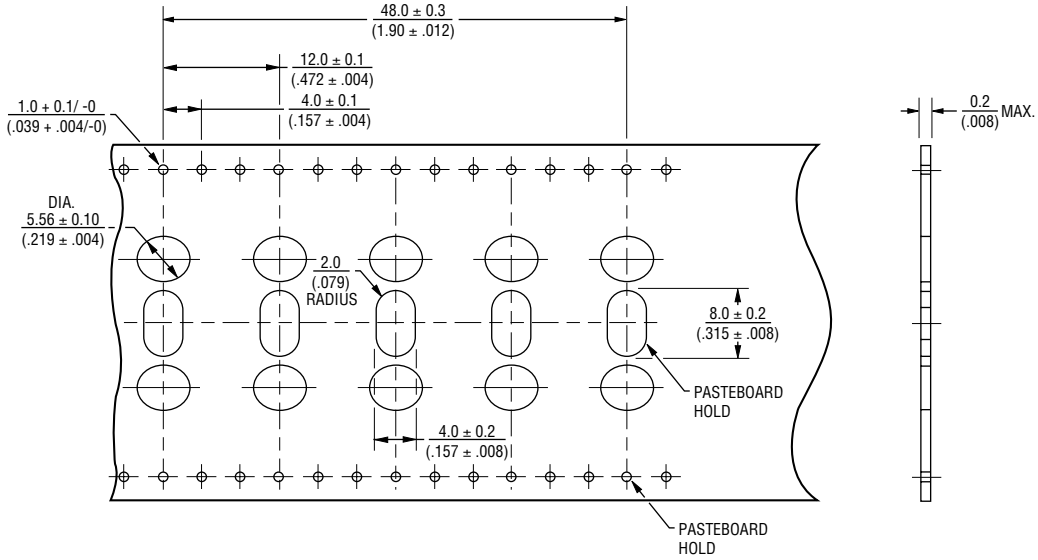
Typical Time to Trip at 23 °C



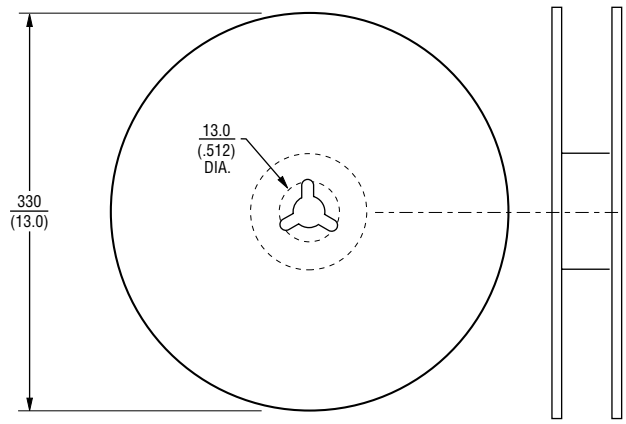
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MF-S, MF-LS, MF-LR and MF-VS Series Tape and Reel Specifications BOURNS®

Taped Component Dimensions



Reel Dimensions



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