

Features

- 3.6 mm narrow design axial strap
- 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 Narrow Body Series - PTC Resettable Fuses

Electrical Characteristics

Model	V max. Volts	I max. Amps	I _{hold}	I _{trip}	Initial Resistance			1 Hour (R ₁) Post-Trip Resistance	Max. Time To Trip		Tripped Power Dissipation
					Amperes At 23 °C		Ohms At 23 °C			Amperes At 23 °C	
			Hold	Trip	Min.	Max.	Typ.	Max.			Typ.
MF-VS170N	12	100	1.7	3.4	0.030	0.052	0.040	0.105	8.5	3.0	1.4
MF-VS175NL	12	100	1.75	3.5	0.029	0.051	0.038	0.102	8.75	3.0	1.4
MF-VS210N	12	100	2.1	4.7	0.018	0.030	0.024	0.060	10.0	5.0	1.5

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, Condition A No change

Test Procedures And Requirements For Model MF-VS Narrow Body Series

Test	Test Conditions	Accept/Reject Criteria
Visual/Mech.	Verify dimensions and materials	Per MF physical description
Resistance	In still air @ 23 °C	R _{min} ≤ R ≤ R _{max}
Time to Trip	At specified current, V _{max} , 23 °C	T ≤ max. time to trip (seconds)
Hold Current	30 min. at I _{hold}	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
UL File Number	E 174545S	
CSA File Number	CA 110338	
TÜV File Number	R2057213	

Thermal Derating Chart - I_{hold} (Amps)

Model	Ambient Operating Temperature			
	0 °C	23 °C	60 °C	85 °C
MF-VS170N	2.2	1.7	0.8	0.1
MF-VS175NL	2.25	1.75	0.85	0.1
MF-VS210N	2.9	2.1	1.0	0.1

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

Additional Features

- Patents pending

MF-VS Narrow Body Series - PTC Resettable Fuses

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Product Dimensions

Model	A		B		C		D		F		Pkg. Style
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
MF-VS170N	22.0 (0.866)	24.0 (0.945)	3.6 (0.142)	3.9 (0.154)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	2.4 (0.094)	2.6 (0.102)	Std.
MF-VS175NL	26.0 (1.024)	28.0 (1.102)	3.6 (0.142)	3.9 (0.154)	0.6 (0.024)	0.9 (0.035)	6.1 (0.240)	7.8 (0.307)	2.4 (0.094)	2.6 (0.102)	Std.
MF-VS210N	30.0 (1.181)	32.0 (1.260)	3.6 (0.142)	3.9 (0.154)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	2.4 (0.094)	2.6 (0.102)	Std.

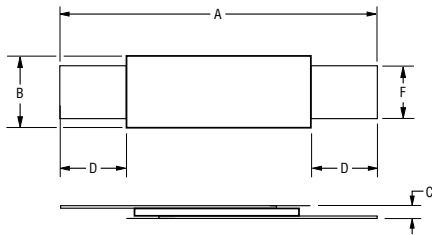
Packaging: Bulk - 500 pcs. per bag. Tape and Reel - Consult factory.

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

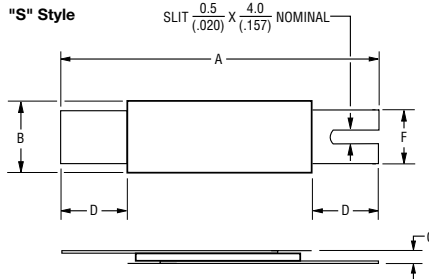
DIMENSIONS = $\frac{\text{MM}}{\text{(INCHES)}}$

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

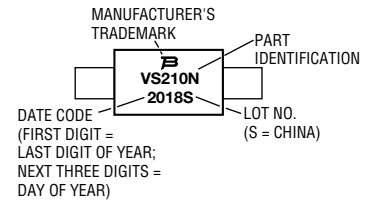


"S" Style



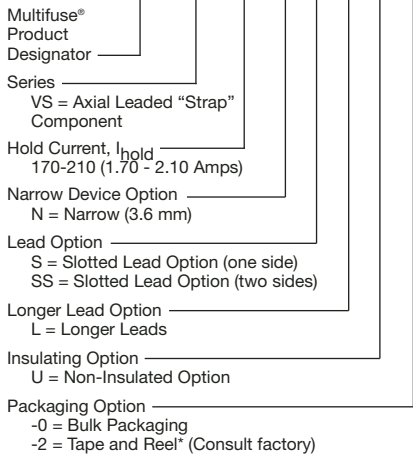
Typical Part Marking

Represents total content. Layout may vary.



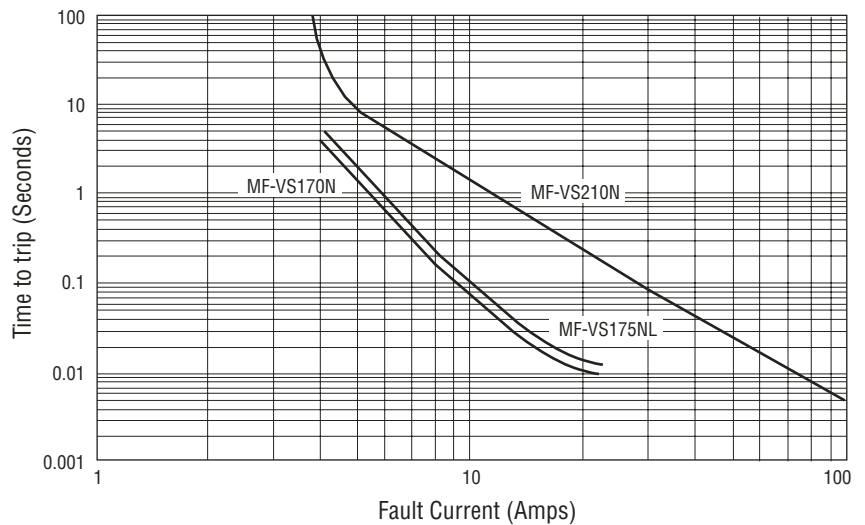
How To Order

MF - VS 210 N



*Packaged per EIA 486-B

Typical Time to Trip at 23 °C

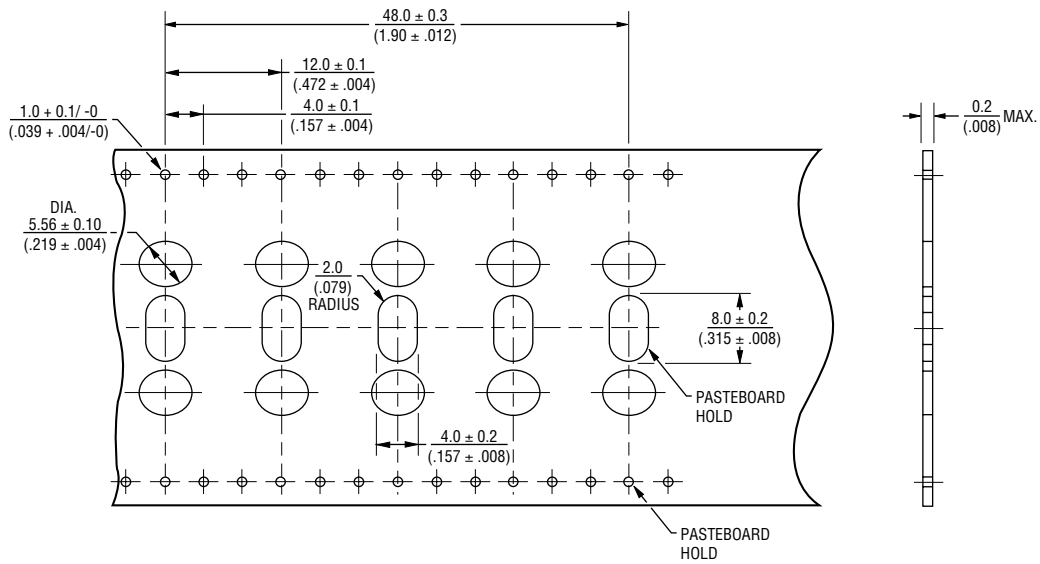


MF-VSN SERIES, REV. D, 11/04

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

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

Taped Component Dimensions



Reel Dimensions

