

## Features

- 3.6 mm narrow design axial strap
- Fully compatible with current industry standards
- Weldable nickel terminals
- Very low internal resistance
- Low switching temperature
- Agency recognition: <sup>®</sup>
- RoHS compliant\*

## 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			Ohms at 23 °C	Amperes at 23 °C	Seconds at 23 °C	Watts 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,..... No change Condition A

### 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 .....	$R_{min} \leq R \leq R_{1max}$
Time to Trip .....	At specified current, $V_{max}$ , 23 °C .....	$T \leq$ 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 .....	E174545 <a href="http://www.ul.com/">http://www.ul.com/</a> Follow link to Certifications, then UL File No., enter E174545	
CSA File Number .....	CA110338 <a href="http://directories.csa-international.org/">http://directories.csa-international.org/</a> Under "Certification Record" and "File Number" enter 110338-0-000	
TÜV Certificate Number .....	R 02057213 <a href="http://www.tuvdotcom.com/">http://www.tuvdotcom.com/</a> Follow link to "other certificates", enter File No. 2057213	

### 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  $I_{hold}$ .

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

## 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

**BOURNS®**

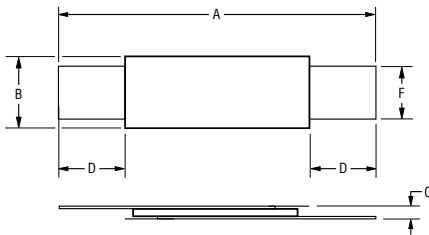
### Product Dimensions

Model	A		B		C		D		F	
	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)
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)
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)

Packaging: Bulk - 500 pcs. per bag. Tape and Reel - Consult factory.  
Leads: 1/4 Hardened Nickel 0.125 mm (.005") nom.

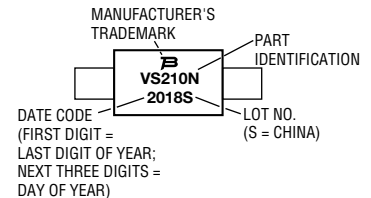
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

NOTE: The dimensions and shape of the leads can be modified to suit the battery pack design. All models are available without insulation wrapping.

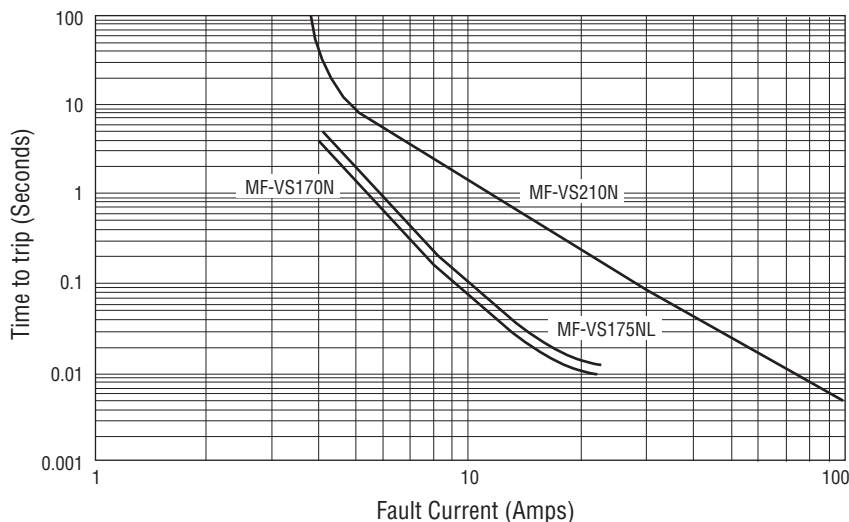


### Typical Part Marking

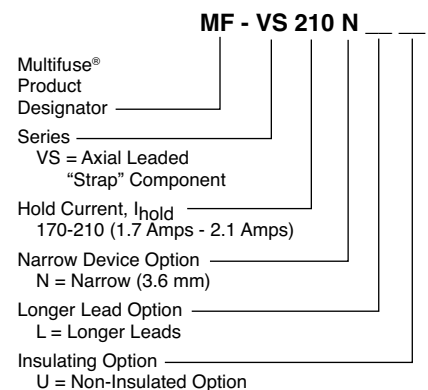
Represents total content. Layout may vary.



### Typical Time to Trip at 23 °C



### How to Order



MF-VSN SERIES, REV. 1, 05/15

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