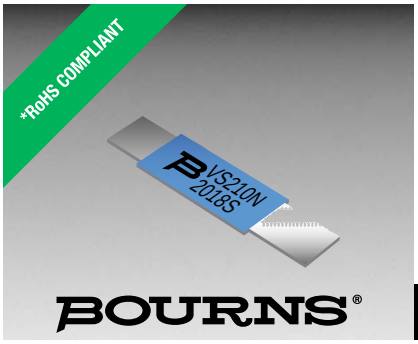


Features

- 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:
- 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

Item	Condition	Criteria
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, 95 % R.H. 1000 hours	±10 % typical resistance change
Thermal Shock	MIL-STD-202F, Method 107G -40 °C to +85 °C, 10 times	±5 % typical resistance change
Vibration	MIL-STD-883C, Condition A	No change

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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	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 E174545
http://www.ul.com/ Follow link to Certifications, then UL File No., enter E174545

TÜV Certificate Number ..... R 02057213
http://www.tuvdotcom.com/ 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}.

WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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-VSN Narrow Body Series - PTC Resettable Fuses

BOURNS®

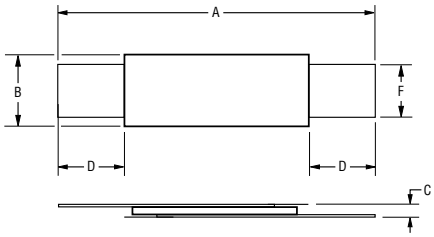
Product Dimensions

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)

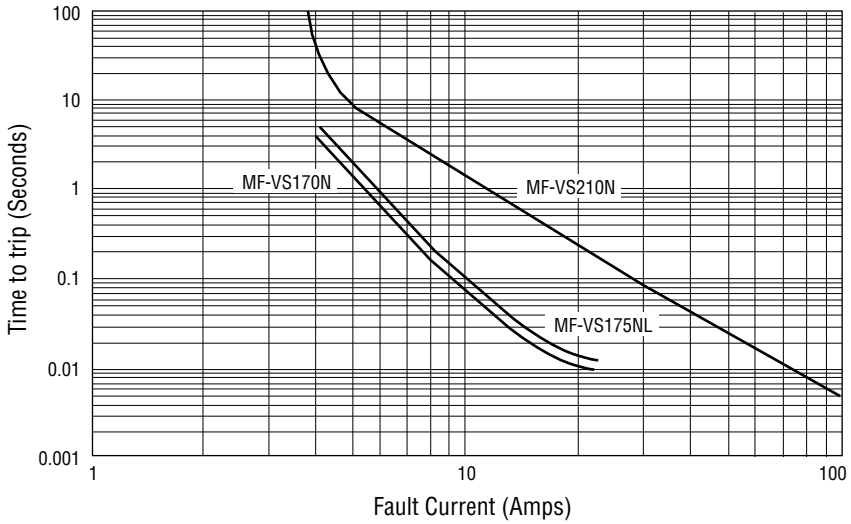
Packaging: Bulk - 500 pcs. per bag. Tape and Reel - Consult factory.
Leads: 1/4 Hardened Nickel 0.125 mm (.005 ˝) nom.

DIMENSIONS: MM / (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.

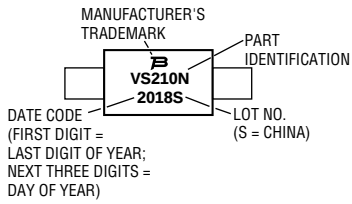


Typical Time to Trip at 23 ˚C



Typical Part Marking

Represents total content. Layout may vary.



How to Order

MF - VS 210 N __ __

- Multifuse® Product Designator
- Series
  - VS = Axial Leaded "Strap" Component
- Hold Current, I_{hold}
  - 170-210 (1.7 Amps - 2.1 Amps)
- Narrow Device Option
  - N = Narrow (3.6 mm)
- Longer Lead Option
  - L = Longer Leads
- Insulating Option
  - U = Non-Insulated Option

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Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500
Email: americus@bourns.com

www.bourns.com

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- 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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