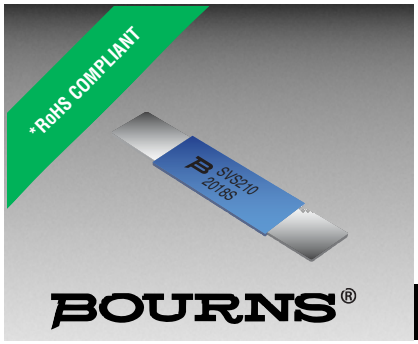


Features

- Industry's lowest internal resistance
- Switches at optimum temperature
- Axial leaded, with flexible design options available
- Fully compatible with current industry standards
- Weldable nickel terminals
- Agency recognition: c UL us, TÜV
- RoHS compliant*

MF-SVS 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-SVS170	10	100	1.7	4.1	0.018	0.032	0.023	0.064	8.5	5.0	2.1
MF-SVS175	10	100	1.75	4.2	0.017	0.031	0.022	0.063	8.5	5.0	2.1
MF-SVS210	10	100	2.1	5.0	0.010	0.020	0.016	0.040	10.5	5.0	2.4
MF-SVS230	10	100	2.3	5.2	0.010	0.018	0.014	0.036	12.5	5.0	2.6

Environmental Characteristics

Operating Temperature ..... -40 °C to +85 °C
Storage Conditions ..... +40 °C max. 70 % R.H. max.
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, +85 °C to -40 °C, 10 times ..... ±5 % typical resistance change
Vibration ..... MIL-STD-883C, Condition A ..... No change

Test Procedures And Requirements For Model MF-SVS 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								
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
MF-SVS170	3.3	2.8	2.3	1.7	1.3	1.0	0.8	0.5	0.1
MF-SVS175	3.4	2.9	2.3	1.75	1.3	1.1	0.8	0.5	0.1
MF-SVS210	3.8	3.3	2.7	2.1	1.6	1.3	1.1	0.8	0.4
MF-SVS230	4.2	3.6	3.0	2.3	1.8	1.4	1.1	0.8	0.4

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

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

*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.
Users should verify actual device performance in their specific applications.

Applications

- Any battery pack application that requires protection with the lowest possible resistance:
  - Rechargeable battery packs; designed for NiMH and Li-Ion chemical characteristics
  - Cellular / cordless phone rechargeable battery packs
  - Laptop computer battery packs

MF-SVS Series - PTC Resettable Fuses

BOURNS®

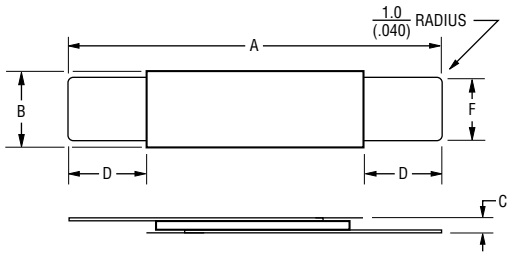
Product Dimensions

Model	A		B		C		D		F	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
MF-SVS170	16.0 (0.630)	18.0 (0.709)	4.9 (0.193)	5.5 (0.216)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)
MF-SVS170N	22.0 (0.866)	24.0 (0.945)	3.6 (0.142)	3.9 (0.153)	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-SVS175	16.0 (0.630)	18.0 (0.709)	4.9 (0.193)	5.5 (0.216)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)
MF-SVS175N	22.0 (0.866)	24.0 (0.945)	3.6 (0.142)	3.9 (0.153)	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-SVS175NL	26.0 (1.024)	28.0 (1.102)	3.6 (0.142)	3.9 (0.153)	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-SVS210	20.9 (0.823)	23.1 (0.909)	4.9 (0.193)	5.5 (0.216)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)
MF-SVS210N	30.0 (1.181)	32.0 (1.260)	3.6 (0.142)	3.9 (0.153)	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-SVS230	20.9 (0.823)	23.1 (0.909)	4.9 (0.193)	5.5 (0.216)	0.6 (0.024)	0.9 (0.035)	4.1 (0.161)	5.8 (0.228)	3.9 (0.154)	4.1 (0.161)

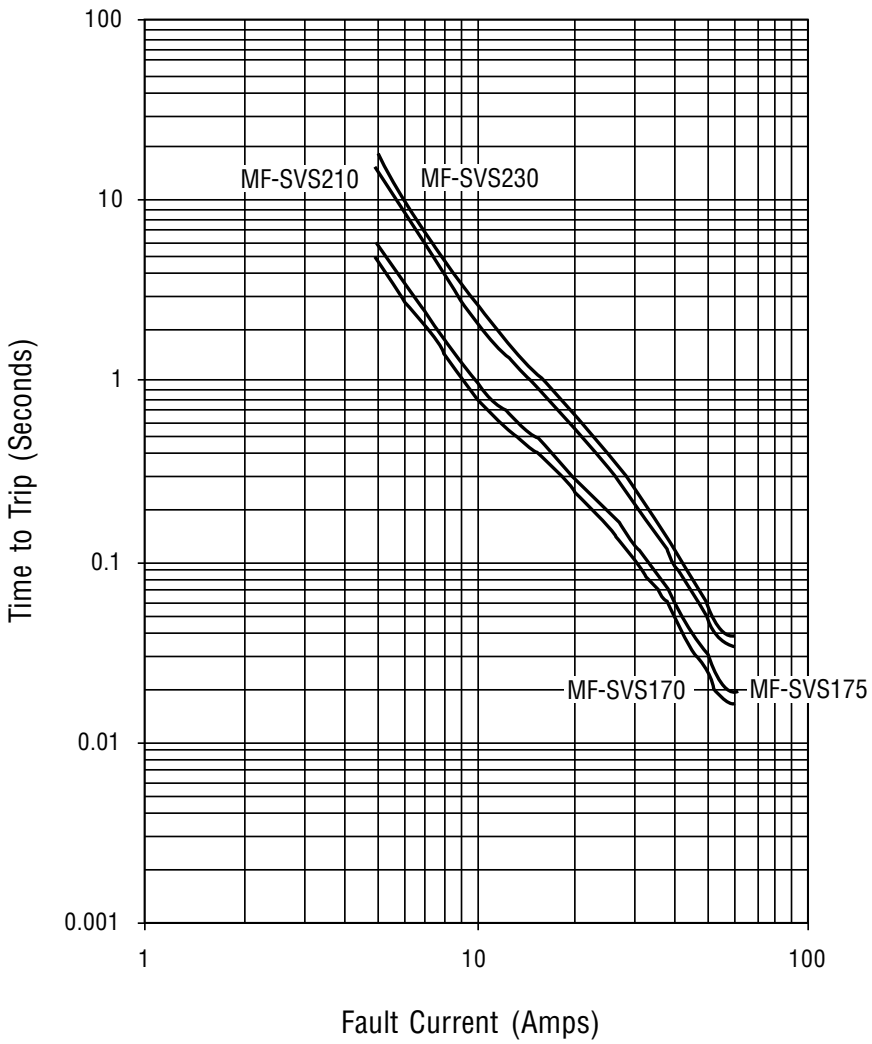
Packaging: Bulk - 500 pcs. per bag. Tape and Reel - Consult factory.
Leads: 1/4 Hardened Nickel 0.125 mm (.005 ") nom.

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



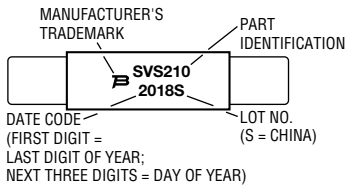
How to Order

MF - SVS 210 __ __ __

- Multifuse® Product Designator
- Series
  - SVS = Axial Leaded "Strap" Component
- Hold Current, I_{hold}
  - 170-230 (1.70 - 2.30 Amps)
- Narrow Device Option
  - N = Narrow (3.6mm)
- Longer Lead Option
  - L = Longer Leads
- Insulating Option
  - U = Non-Insulated Option

Typical Part Marking

Represents total content. Layout may vary.



Application Notice

- 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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