

Features

- Very low internal resistance
- Switches at optimum temperature
- Axial leaded, with flexible design options available
- Fully compatible with current industry standards
- Weldable nickel terminals

- 3.6 mm narrow design available
- Agency recognition: c ¶ us ≜
- RoHS compliant* and halogen free**

MF-SVS Series - PTC Resettable Fuses

Electrical Characteristics

Model	V _{max}	I _{max}	l _{hold}	I _{trip}		nitial 1 Hour Post-trip Resistance		Max. Time to Trip		Tripped Power Dissipation	Agency Recognition	
			at 23 °C		at 23 °C Ohms		at 23 °C Ohms	at 23 °C		at 23 °C Watts	cUL	ΤÜV
	Volts	Amps	Am	nps	R _{Min}	R _{Max}	R _{1Max}	Amps	Seconds	Тур.	E174545	R50410733
MF-SVS170	10	100	1.7	4.1	0.018	0.032	0.064	8.5	5.0	2.1	✓	✓
MF-SVS170N	10	100	1.7	4.1	0.018	0.032	0.064	8.5	5.0	2.1	✓	✓
MF-SVS175	10	100	1.75	4.2	0.017	0.031	0.063	8.75	5.0	2.1	✓	✓
MF-SVS175N	10	100	1.75	4.2	0.017	0.031	0.063	8.75	5.0	2.1	✓	✓
MF-SVS175NL	10	100	1.75	4.2	0.017	0.031	0.063	8.75	5.0	2.1	✓	✓
MF-SVS210	10	100	2.1	5.0	0.010	0.020	0.040	10.5	5.0	2.4	✓	✓
MF-SVS210N	10	100	2.1	5.0	0.010	0.020	0.040	10.5	5.0	2.4	✓	1
MF-SVS230	10	100	2.3	5.2	0.010	0.018	0.036	12.5	5.0	2.6	✓	1
MF-SVS270	16	60	2.7	6.5	0.012	0.018	0.036	13.5	5.0	1.2	✓	✓

Environmental Characteristics

Item	Condition	Criteria
Operating Temperature	-40 °C to +85 °C	
Recommended Storage	+40 °C max. / 70 % R.H. max.	
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	-40 °C to +85 °C, 10 times	±5 % typical resistance change
Solvent Resistance	MIL-STD-202, Method 215	No change (marking still legible)
Vibration	MIL-STD-883C, Method 2007.1 Condition A	No change (R _{min} < R < R _{1max})
Moisture Sensitivity Level (MSL)	See Note	
ESD Classification	Class 6 (per AEC-Q200-2, HBM)	

Test Procedures and Requirements

Item	Test Condition	Accept/Reject Criteria		
Visual/Mechanical	Verify dimensions and materials	Per MF physical description		
Resistance	In still air @ 23 °C	$R_{min} \le R \le R_{max}$		
Time to Trip	At specified current, V _{max} , 23 °C, still air	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} , I _{max} , 48 hours	No arcing or burning		



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

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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

^{**} Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (CI) content is 1500 ppm or less.

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

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Thermal Derating Table - Ihold (Amps)

Model	Ambient Operating Temperature										
	-40 °C	-20 °C	0 ℃	23 °C	40 °C	50 °C	60 °C	70 °C	80 °C		
MF-SVS170	3.3	2.8	2.3	1.7	1.3	1.0	0.8	0.5	0.1		
MF-SVS170N	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-SVS175N	3.4	2.9	2.3	1.75	1.3	1.1	0.8	0.5	0.1		
MF-SVS175NL	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-SVS210N	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		
MF-SVS270	5.6	4.7	4.0	2.7	2.2	1.7	1.4	0.9	0.5		

^{*}Itrip is approximately two times Ihold.

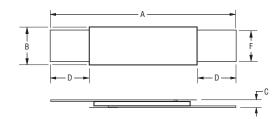
Product Dimensions

Model		4	В		()	F	
wodei	Min.	Max.								
MF-SVS170	16.0	18.0	4.9	5.5	0.6	0.9	4.1	5.8	3.9	4.1
1011 -3 0 3 1 7 0	(0.630)	(0.709)	(0.193)	(0.216)	(0.024)	(0.035)	(0.161)	(0.228)	(0.154)	(0.161)
MF-SVS170N	22.0	24.0	3.6	3.9	0.6	0.9	4.1	5.8	2.4	2.6
WIF-3V317UN	(0.866)	(0.945)	(0.142)	(0.153)	(0.024)	(0.035)	(0.161)	(0.228)	(0.094)	(0.102)
ME 01/0475	16.0	18.0	4.9	5.5	0.6	0.9	4.1	5.8	3.9	4.1
MF-SVS175	(0.630)	(0.709)	(0.193)	(0.216)	(0.024)	(0.035)	(0.161)	(0.228)	(0.154)	(0.161)
MF-SVS175N	22.0	24.0	3.6	3.9	0.6	0.9	4.1	5.8	2.4	2.6
	(0.866)	(0.945)	(0.142)	(0.153)	(0.024)	(0.035)	(0.161)	(0.228)	(0.094)	(0.102)
MF-SVS175NL	26.0	28.0	3.6	3.9	0.6	0.9	6.1	7.8	2.4	2.6
INIT-3V3175INL	(1.024)	(1.102)	(0.142)	(0.153)	(0.024)	(0.035)	(0.240)	(0.307)	(0.094)	(0.102)
ME 07/0010	20.9	23.1	4.9	5.5	0.6	0.9	4.1	5.8	3.9	4.1
MF-SVS210	(0.823)	(0.909)	(0.193)	(0.216)	(0.024)	(0.035)	(0.161)	(0.228)	(0.154)	(0.161)
ME OVOCACNI	30.0	32.0	3.6	3.9	0.6	0.9	4.1	5.8	2.4	2.6
MF-SVS210N	(1.181)	(1.260)	(0.142)	(0.153)	(0.024)	(0.035)	(0.161)	(0.228)	(0.094)	(0.102)
MF-SVS230	20.9	23.1	4.9	5.5	0.6	0.9	4.1	5.8	3.9	4.1
	(0.823)	(0.909)	(0.193)	(0.216)	(0.024)	(0.035)	(0.161)	(0.228)	(0.154)	(0.161)
MF-SVS270	20.9	23.1	4.9	5.5	0.6	0.9	4.1	5.8	3.9	4.1
	(0.823)	(0.909)	(0.193)	(0.216)	(0.024)	(0.035)	(0.161)	(0.228)	(0.154)	(0.161)

MM DIMENSIONS: (INCHES)

Leads: 1/4 Hardened Nickel 0.127 mm (.005 inch) nom.

NOTE: The dimensions and shape of the leads can be modified to suit the battery pack design.



Packaging Specifications

MF-SVS170 ~ MF-SVS270: Bulk, 500 pcs. per bag.

Tape and reel packaging may be available for high-volume requirements.

Specifications are subject to change without notice.

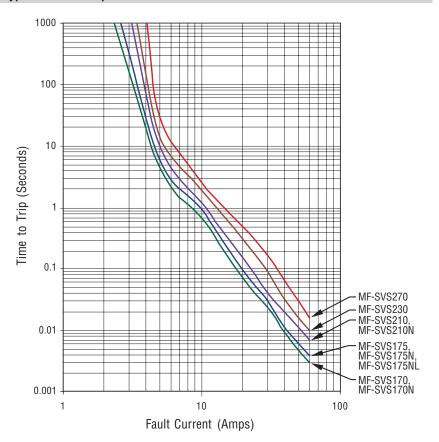
Users should verify actual device performance in their specific applications.

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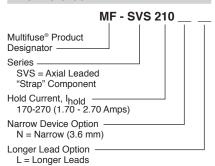
MF-SVS Series - PTC Resettable Fuses

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Typical Time to Trip at 23 °C



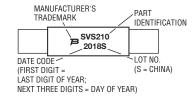
How to Order



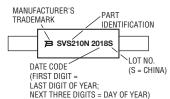
Typical Part Marking

Represents total content. Layout may vary.

Standard Width Models



Narrow Width Models



Bourns® Multifuse® PPTC Resettable Fuses

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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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