



## 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

■ RoHS compliant\*

## MF-SVS Series - PTC Resettable Fuses

### Electrical Characteristics

Model	V max. Volts	I max. Amps	I <sub>hold</sub>	I <sub>trip</sub>	Initial Resistance			1 Hour (R <sub>1</sub> ) 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	0.030	0.022	0.060	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/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-SVS Series

Test	Test Conditions	Accept/Reject Criteria
Visual/Mech.	Verify dimensions and materials	Per MF physical description
Resistance	In still air @ 23 °C	R <sub>min</sub> ≤ R ≤ R <sub>max</sub>
Time to Trip	At specified current, V <sub>max</sub> , 23 °C	T ≤ max. time to trip (seconds)
Hold Current	30 min. at I <sub>hold</sub>	No trip
Trip Cycle Life	V <sub>max</sub> , I <sub>max</sub> , 100 cycles	No arcing or burning
Trip Endurance	V <sub>max</sub> , 48 hours	No arcing or burning

UL File Number .....E 174545S  
 CSA File Number .....CA 110338  
 TÜV File Number .....R2057213

### Thermal Derating Chart - I<sub>hold</sub> (Amps)

Model	Ambient Operating Temperature			
	0 °C	23 °C	60 °C	80 °C
MF-SVS170	3.6	1.7	1.3	0.8
MF-SVS175	3.65	1.75	1.35	0.8
MF-SVS210	4.3	2.1	1.5	0.8
MF-SVS230	4.4	2.3	1.65	0.8

I<sub>trip</sub> is approximately two times I<sub>hold</sub>.

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex  
 Specifications are subject to change without notice.  
 Customers 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)

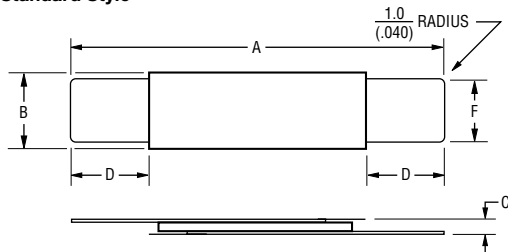
Packaging: Bulk - 500 pcs. per bag. Tape and Reel - Consult factory.

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

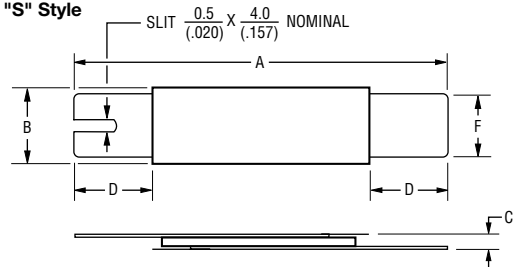
DIMENSIONS =  $\frac{\text{MM}}{\text{(INCHES)}}$

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.

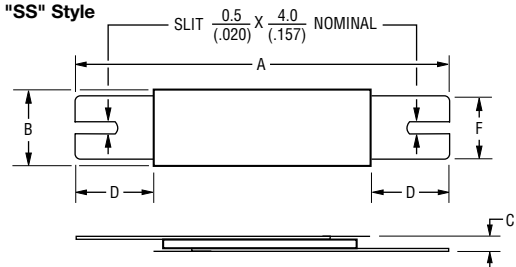
Standard Style



"S" Style



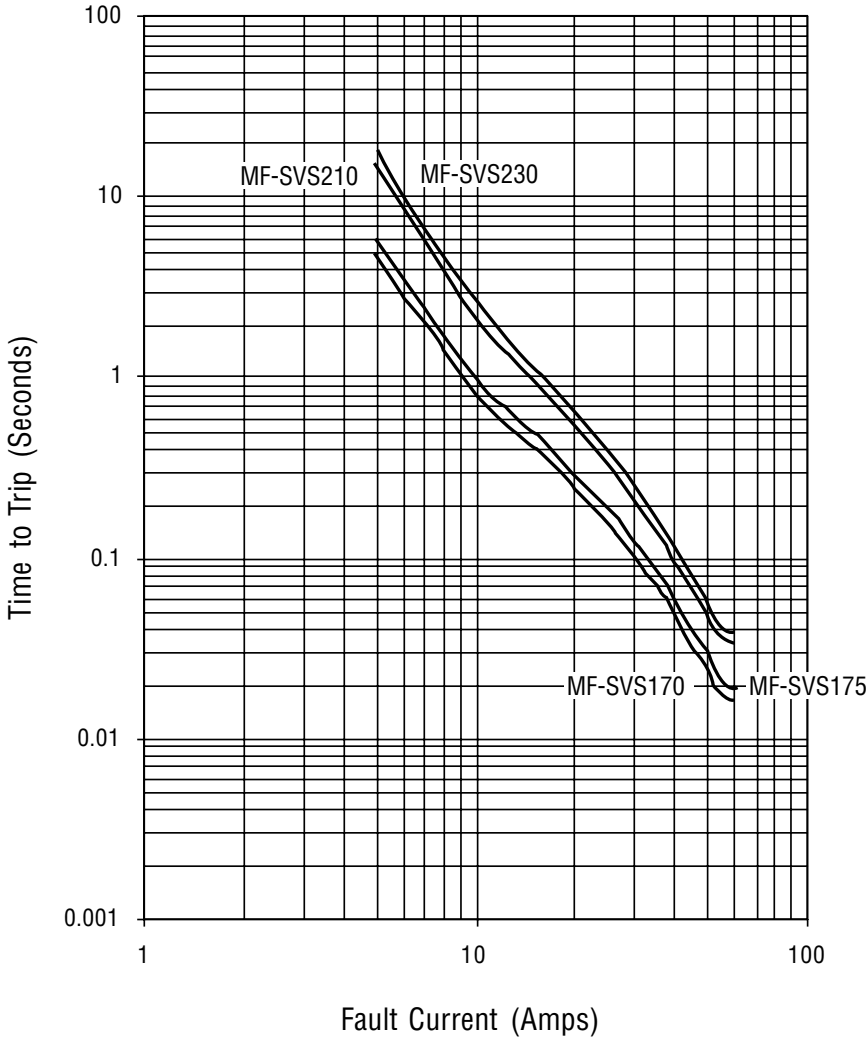
"SS" Style



# MF-SVS Series - PTC Resettable Fuses



## 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)

Lead Option  
S = Slotted Lead Option (one side)  
SS = Slotted Lead Option (two sides)

Longer Lead Option  
L = Longer Leads

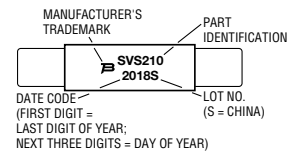
Insulating Option  
U = Non-Insulated Option

Packaging Option  
-0 = Bulk Packaging  
-2 = Tape and Reel\* (Consult factory)

\*Packaged per EIA 486-B

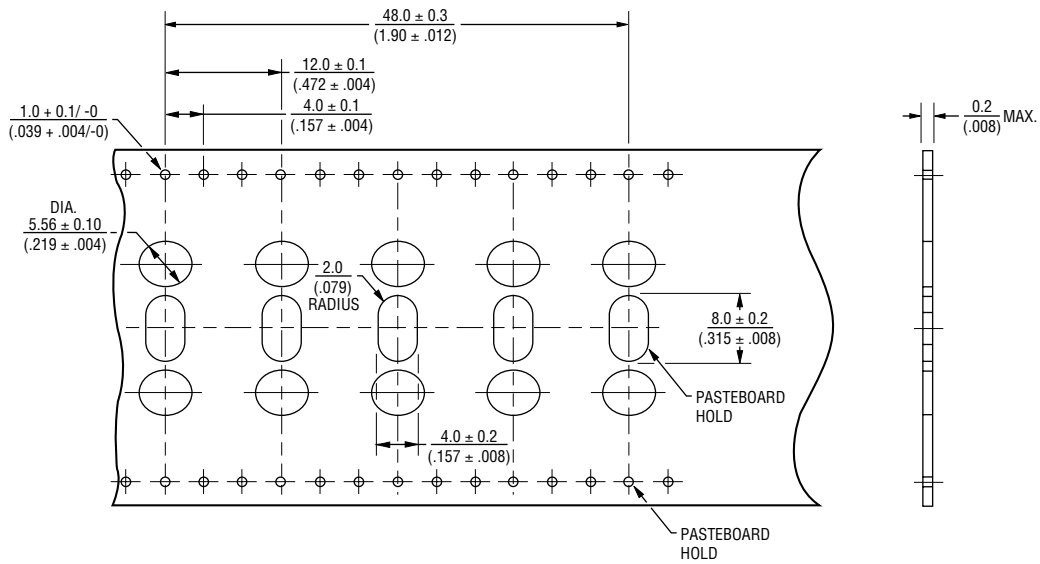
## Typical Part Marking

Represents total content. Layout may vary.



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

## Taped Component Dimensions



## Reel Dimensions

