





Features

- Axial leaded
- Fully compatible with current industry standards
- Weldable nickel terminals
- Very low internal resistance
- Agency recognition:   
- RoHS compliant*

 The slotted lead option is currently available but not recommended for new designs.

Applications

- Rechargeable battery pack protection
- Provides overcurrent protection with 125 °C trip temperature

MF-S 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.	Max.			Typ.
MF-S120	15	100	1.20	2.70	0.085	0.160	0.220	6	5.0	1.20
MF-S120S	15	100	1.20	2.70	0.085	0.160	0.220	6	5.0	1.20
MF-S150	15	100	1.50	3.00	0.050	0.090	0.113	8	5.0	1.30
MF-S175	15	100	1.75	3.80	0.050	0.090	0.120	9	4.0	1.50
MF-S175S	15	100	1.75	3.80	0.050	0.090	0.120	9	4.0	1.50
MF-S200	30	100	2.00	4.40	0.030	0.060	0.080	10	4.0	1.90
MF-S350	30	100	3.50	6.30	0.017	0.031	0.040	20	3.0	2.50
MF-S420	30	100	4.20	7.60	0.012	0.024	0.040	20	6.0	2.90

NOTE: Slotted lead option available on all models.

Environmental Characteristics

Operating/Storage Temperature	-40 °C to +85 °C
Maximum Device Surface Temperature in Tripped State	125 °C
Passive Aging	+85 °C, 1000 hours..... ±5 % typical resistance change
Humidity Aging	+85 °C, 85% R.H. 7 days..... ±5 % typical resistance change
Vibration	MIL-STD-883C, Method 2007.1..... No change Condition A

Test Procedures And Requirements For Model MF-S 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} ≤ R ≤ R _{1max}
Time to Trip	At specified current, V _{max} , 23 °C	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} , 48 hours	No arcing or burning

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

Thermal Derating Chart - I_{hold}/ I_{trip} (Amps)

Model	Ambient Operating Temperature								
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
MF-S120	1.90 / 4.28	1.70 / 3.83	1.50 / 3.38	1.20 / 2.70	1.00 / 2.25	0.90 / 2.03	0.80 / 1.80	0.70 / 1.58	0.50 / 1.13
MF-S120S	1.90 / 4.28	1.70 / 3.83	1.50 / 3.38	1.20 / 2.70	1.00 / 2.25	0.90 / 2.03	0.80 / 1.80	0.70 / 1.58	0.50 / 1.13
MF-S150	2.20 / 4.40	2.00 / 4.00	1.80 / 3.60	1.50 / 3.00	1.30 / 2.60	1.10 / 2.20	1.00 / 2.00	0.90 / 1.80	0.70 / 1.40
MF-S175	2.50 / 5.59	2.30 / 5.14	2.00 / 4.47	1.70 / 3.80	1.50 / 3.35	1.30 / 2.91	1.20 / 2.68	1.10 / 2.46	0.90 / 2.01
MF-S175S	2.50 / 5.59	2.30 / 5.14	2.00 / 4.47	1.70 / 3.80	1.50 / 3.35	1.30 / 2.91	1.20 / 2.68	1.10 / 2.46	0.90 / 2.01
MF-S200	3.20 / 7.04	2.80 / 6.16	2.50 / 5.50	2.00 / 4.40	1.70 / 3.74	1.60 / 3.52	1.40 / 3.08	1.20 / 2.64	0.90 / 1.98
MF-S350	5.40 / 9.72	4.80 / 8.64	4.30 / 7.74	3.50 / 6.30	3.00 / 5.40	2.80 / 5.04	2.50 / 4.50	2.20 / 3.96	1.70 / 3.06
MF-S420	6.40 / 11.5	5.70 / 10.3	5.10 / 9.23	4.20 / 7.60	3.60 / 6.51	3.30 / 5.97	3.00 / 5.43	2.60 / 4.70	2.10 / 3.80

*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.

MF-S Series - PTC Resettable Fuses

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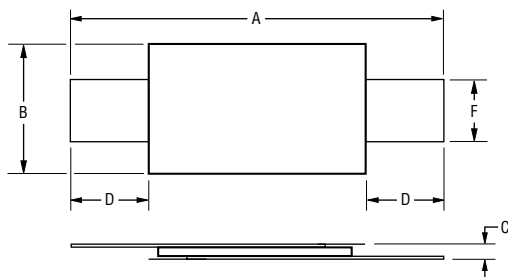
Product Dimensions

Model	A		B		C		D		F	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
MF-S120	19.9 (0.783)	22.1 (0.870)	4.9 (0.193)	5.2 (0.205)	0.6 (0.024)	1.0 (0.039)	5.5 (0.217)	7.5 (0.295)	3.8 (0.150)	4.1 (0.161)
MF-S120S	19.9 (0.783)	22.1 (0.870)	4.9 (0.193)	5.2 (0.205)	0.6 (0.024)	1.0 (0.039)	5.5 (0.217)	7.5 (0.295)	3.8 (0.150)	4.1 (0.161)
MF-S150	21.3 (0.839)	23.4 (0.921)	10.2 (0.402)	11.0 (0.433)	0.5 (0.020)	1.1 (0.043)	4.1 (0.161)	5.5 (0.217)	4.8 (0.189)	5.4 (0.213)
MF-S175	20.9 (0.823)	23.1 (0.909)	4.9 (0.193)	5.2 (0.205)	0.6 (0.024)	1.0 (0.039)	4.1 (0.161)	5.5 (0.217)	3.8 (0.150)	4.1 (0.161)
MF-S175S	20.9 (0.823)	23.1 (0.909)	4.9 (0.193)	5.2 (0.205)	0.6 (0.024)	1.0 (0.039)	4.1 (0.161)	5.5 (0.217)	3.8 (0.150)	4.1 (0.161)
MF-S200	21.3 (0.839)	23.4 (0.921)	10.2 (0.402)	11.0 (0.433)	0.5 (0.020)	1.1 (0.043)	5.0 (0.197)	7.6 (0.299)	4.8 (0.189)	5.4 (0.213)
MF-S350	28.4 (1.119)	31.8 (1.252)	13.0 (0.512)	13.5 (0.531)	0.5 (0.020)	1.1 (0.043)	6.3 (0.248)	8.9 (0.350)	6.0 (0.236)	6.6 (0.260)
MF-S420	30.6 (1.205)	32.4 (1.276)	12.9 (0.508)	13.6 (0.535)	0.5 (0.020)	1.1 (0.043)	5.0 (0.197)	7.5 (0.295)	6.0 (0.236)	6.6 (0.260)

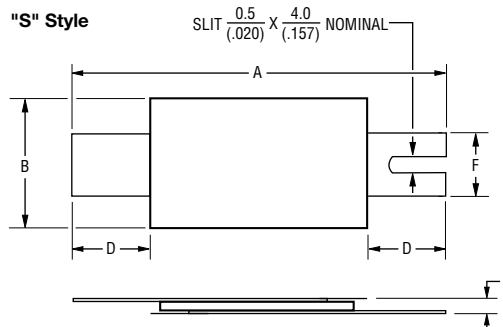
Packaging: Bulk - 500 pcs. per bag.
Tape and Reel - Consult factory.

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

Standard Style



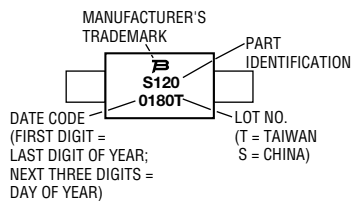
"S" Style



Terminal material: quarter-hard nickel

Typical Part Marking

Represents total content. Layout may vary.

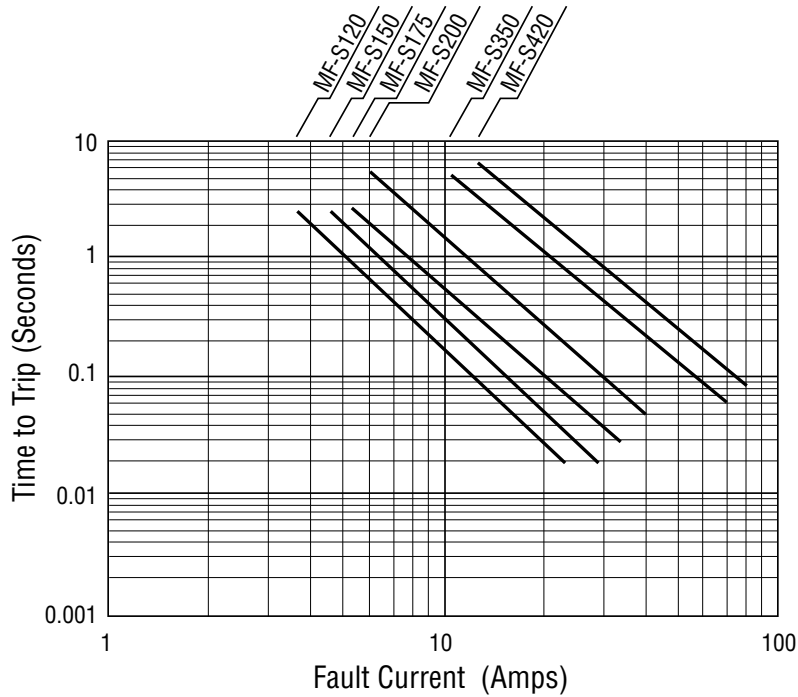


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Typical Time to Trip at 23 °C

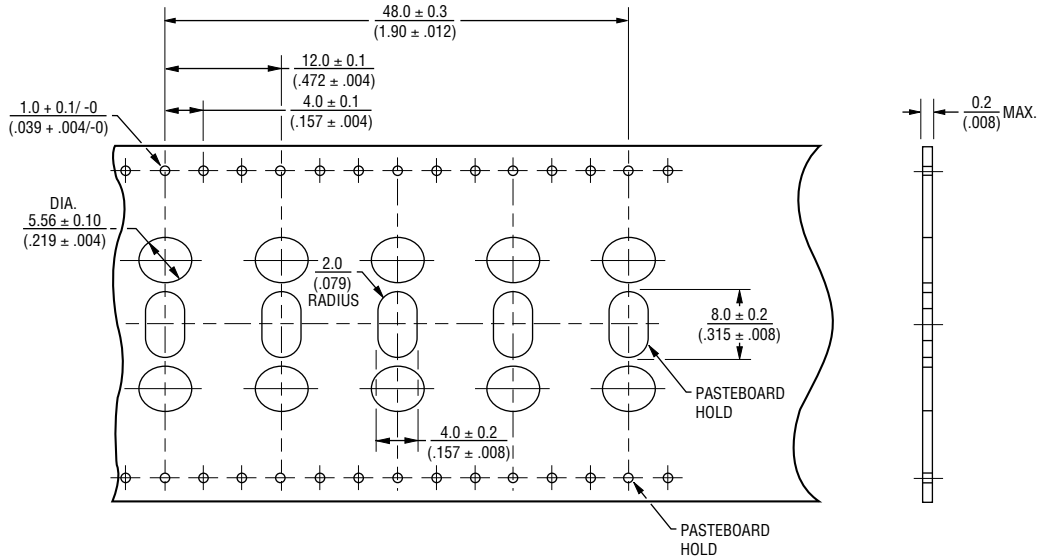


How to Order

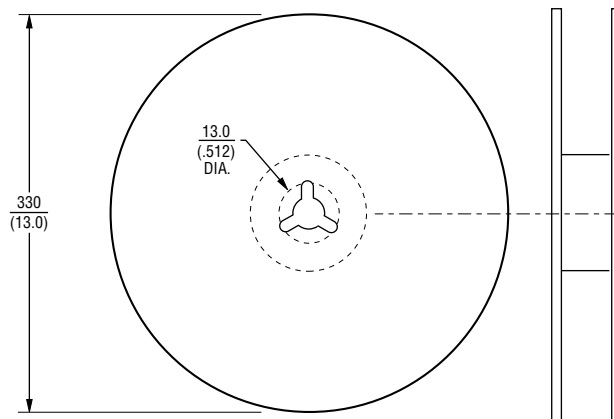
MF - S 120 S -
 Multifuse® Product _____
 Designator _____
 Series _____
 S = Axial Leaded "Strap" Component
 Hold Current, I_{hold} _____
 120-420 (1.20 Amps - 4.20 Amps)
 Slotted Lead Option* _____
 Packaging Options _____
 - = Bulk Packaging
 - 2 = Tape and Reel**

* Slotted lead option is currently available, but not recommended for new designs.
 **Packaged per EIA486-B

Taped Component Dimensions



Reel Dimensions



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

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