

Bourns® Multifuse® Device Application Table

Industry	Application	Surface Mount Product Families							Radial Leaded Product Families				
		MF-PSMF	MF-NSMF	MF-USMF	MF-MSMF	MF-SMDF	MF-SM	MF-SM/250	MF-R	MF-RX	MF-RX/72	MF-RX/250	MF-R/600
Telecom	Central office equipment						X	X				X	X
	MDF modules						X	X				X	X
	CPE (Customer Premise Equipment)							X				X	X
	Analog and digital line cards						X	X				X	X
	WAN & LAN equipment							X				X	X
	Set top boxes						X	X				X	X
	xDSL modems and splitters						X	X				X	X
	VoIP equipment						X	X				X	X
	PBX/KTS and key telephone systems						X	X				X	X
Computer	CPU & hard disk drives		X	X	X		X			X			
	USB	X	X	X	X					X			
	IEEE1284 parallel data buses		X	X	X					X			
	IEEE 802.3					X	X				X		
	IEEE 1394				X		X			X			
	I/O ports (HDMI, Dvi VGA)	X	X	X	X		X			X			
	PC cards	X	X	X	X		X			X			
	SCSI		X	X	X		X			X			
	USB flash memory modules	X	X	X	X		X			X			
	LCD monitors	X	X	X	X					X			
Consumer Electronics	Loudspeakers									X	X	X	
	Smart card readers	X	X		X								
	Mobile phones	X	X	X									
	Portable electronic input ports	X	X	X	X		X			X	X		
Industrial Electronics	Linear AC/DC adapters	X	X	X	X	X							
	Electromagnetic loads, motor					X	X			X	X		
	Solenoid protection				X		X			X	X		
	Displays				X	X	X			X			
	Security systems				X	X	X			X			
	Industrial controls				X	X	X			X			
Medical Electronics*	Medical equipment	X	X	X	X	X	X			X	X	X	
	Voltage / current input terminals		X		X								

Note: The application summary is for reference only. Determination of suitability for a specific application is the responsibility of the customer.

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* Excluding critical life support

3 Steps to Selecting the Bourns® PTC for your Application

1 What is the operating voltage of your circuit?

Model	V Max. Volts	I Max. Amps	I _{hold}	I _{trip}	Resistance		Max. Time to Trip		Tripped Power Dissipation
			Amperes @ 23 °C	Ohms @ 23 °C	Amperes @ 23 °C	Seconds @ 23 °C	Watts @ 23 °C		
			Hold	Trip	R _{Min.}	R _{1 Max.}	Typ.		
MF-MSMF010	60.0	40	0.10	0.30	0.70	15.00	0.5	1.50	0.8
MF-MSMF014	60.0	40	0.14	0.34	0.40	6.50	1.5	0.15	0.8
MF-MSMF020	30.0	80	0.20	0.40	0.40	6.00	6.0	0.06	0.8
MF-MSMF020/60	60.0	40	0.20	0.40	0.40	6.00	1.5	0.15	0.8
MF-MSMF030	30.0	10	0.30	0.60	0.30	3.00	8.0	0.10	0.8
MF-MSMF050	15.0	100	0.50	1.00	0.15	1.00	8.0	0.15	0.8

From the Bourns Data Sheets, select a PTC with a **V Max.** higher than your operating voltage

2 What is the operating current of your circuit?

Model	V Max. Volts	I Max. Amps	I _{hold}	I _{trip}	Resistance		Max. Time to Trip		Tripped Power Dissipation
			Amperes @ 23 °C	Ohms @ 23 °C	Amperes @ 23 °C	Seconds @ 23 °C	Watts @ 23 °C		
			Hold	Trip	R _{Min.}	R _{1 Max.}	Typ.		
MF-MSMF010	60.0	40	0.10	0.30	0.70	15.00	0.5	1.50	0.8
MF-MSMF014	60.0	40	0.14	0.34	0.40	6.50	1.5	0.15	0.8
MF-MSMF020	30.0	80	0.20	0.40	0.40	6.00	6.0	0.06	0.8
MF-MSMF020/60	60.0	40	0.20	0.40	0.40	6.00	1.5	0.15	0.8
MF-MSMF030	30.0	10	0.30	0.60	0.30	3.00	8.0	0.10	0.8
MF-MSMF050	15.0	100	0.50	1.00	0.15	1.00	8.0	0.15	0.8

From the Bourns Data Sheets, select a PTC with an **I_{hold}** higher than your operating current

3 What is the ambient temperature of your circuit?

Model	Ambient Operating Temperature									
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	80 °C	
MF-MSMF010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03	
MF-MSMF014	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06	
MF-MSMF020	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10	
MF-MSMF020/60	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10	
MF-MSMF030	0.44	0.39	0.35	0.30	0.26	0.23	0.21	0.18	0.15	
MF-MSMF050	0.77	0.68	0.59	0.50	0.44	0.40	0.37	0.33	0.29	

From the Bourns Data Sheets, ensure the PTC you selected has an **I_{hold}** higher than your operating current at your ambient temperature