Bourns® Multifuse® Device Application Table

Industry	Application	Surface Mount Product Families											Radial Leaded Product Families				
		MF-PSML	MF-NSML	MF-USML	MF-PSMF	MF-NSMF	MF-USMF	MF-MSMF	MF-SMDF	MF-LSMF	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			x			x			
	USB	x	x	x	x	x	x	x						x			
	IEEE1284 parallel data buses					x	x	x						x			
	IEEE 802.3								x	x	x				x		
	IEEE 1394							x			x			x			
	I/O ports (HDMI, Dvi VGA)	x	x	x	x	x	x	x			x		x				
	PC cards		x	x	x	x	x	x			x		x				
	SCSI					x	x	x			x		x				
	USB flash memory modules	x	x	x	x	x	x	x			x		x				
	LCD monitors		x	x	x	x	x	x					x				
Consumer Electronics	Loudspeakers	x	x	x									x	x	x		
	Smart card readers	x	x	x	x	x		x									
	Mobile phones	x	x	x	x	x	x										
	Battery	x	x	x													
	Portable electronic input ports	x	x	x	x	x	x	x			x			x	x		
Industrial Electronics	Linear AC/DC adapters				x	x	x	x	x	x							
	Electromagnetic loads, motor								x	x	x			x	x		
	Solenoid protection							x			x			x	x		
	Displays							x	x	x	x		x				
	Security systems							x	x	x	x		x				
	Industrial controls							x	x	x	x		x				
Medical Electronics*	Medical equipment				x	x	x	x	x	x	x		x	x	x		
	Voltage / current input terminals					x		x									

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

* Excluding critical life support

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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} Amperes @ 23 °C	I_{trip}	Resistance Ohms @ 23 °C		Max. Time to Trip		Tripped Power Dissipation Watts @ 23 °C
							Amperes @ 23 °C	Seconds @ 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} Amperes @ 23 °C	I_{trip}	Resistance Ohms @ 23 °C		Max. Time to Trip		Tripped Power Dissipation Watts @ 23 °C
							Amperes @ 23 °C	Seconds @ 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

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