

NEW PRODUCT BRIEF

Bourns® Multifuse® High Temperature Polymer PTC Resettable Fuses



INTRODUCTION

Bourns is pleased to announce the expansion of its industry leading portfolio of 125 °C rated polymer PTC resettable fuse thermistors. The new extended models of [MF-USHT](#) (1210) join Bourns' already successful line of [MF-FSHT](#) (0603), [MF-PSHT](#) (0805), [MF-NSHT](#) (1206), [MF-MSHT](#) (1812) and [MF-SMHT](#) (2920/3425) model families that come in standard surface mount 0603, 0805, 1206, 1812, 2920/3425 EIA footprints, respectively. In addition to the surface mount offerings, Bourns also has radial HT series such [MF-RHT](#) and [MF-RHS](#).

Bourns' expanded offering of 125 °C rated Multifuse® polymer PTC devices is specifically designed to provide robust, cost-effective overcurrent and overtemperature protection across a variety of harsh environments where high ambient operating temperatures are prevalent and long-life reliability is crucial. The wide range of models within the portfolio provides hold currents up to 2.0 A with maximum currents of 40 A and maximum voltages up to 42 VDC. This allows designers to more precisely and more confidently specify overcurrent protection into certain harsh environment designs where operating temperatures may exceed 85 °C. Bourns' offering of high temperature SMD PPTC devices also provides enhanced thermal derating performance compared to traditional 85 °C rated consumer grade models, allowing engineers to design around higher trip current ratings at elevated operating temperatures.

PRODUCT FIT

As electronic content in vehicles continues to climb, so does the requirement for a wider selection of robust overcurrent and overtemperature protection solutions. Additional requirements around higher temperature ratings and long-life performance make Bourns' high temperature PTC device offering an ideal candidate for cost-effective design consideration. Similar trends can also be found in IoT industrial automation applications and even within cloud-based networking systems and smart home appliances. [Bourns' high temperature PPTC devices](#) eliminate the worry of temperature-based nuisance tripping across all such applications while providing enhanced, high-reliability overcurrent and overtemperature protection in space-saving surface mount packages.

APPLICATIONS

With the expansion of its industry leading offering of high temperature rated Multifuse® Polymer PTC devices, Bourns continues to build its world class circuit protection portfolio to address an increasing number of applications whereby effective resettable overcurrent and overtemperature protection within high ambient temperature conditions is essential. Typical applications for the 125 °C rated [MF-MSHT](#), [MF-USHT](#), [MF-NSHT](#), [MF-PSHT](#) and [MF-FSHT](#) model families include but are not limited to:

- Protection of automotive circuitry including infotainment, battery management, motor control, lighting, advanced driving assistance and telematics modules
- Overcurrent surge protection of high reliability electronic equipment required to operate without failure at high ambient temperatures including data storage, climate control, industrial sensors, motor drives and lighting systems
- Robust resettable fault protection for industrial transportation, communication, security, and consumer electronic equipment where high reliability and extended life is essential

FEATURES

- Resettable polymer PTC thermistors for high reliability overcurrent and overtemperature protection
- Operating temperature range from -40 °C to +125 °C
- Higher hold currents (up to 2.0 A) at elevated ambient operating temperatures, with lower thermal derating factors compared to traditional 85 °C rated consumer grade models
- Up to 42 VDC and 40 A maximum ratings
- EIA 0603 to 1812 surface mount footprints
- Tape and reel packaging for automated assembly
- AEC-Q200 compliant and automotive grade
- UL, CSA and TÜV recognized
- IATF 16949 certified production site
- RoHS compliant*

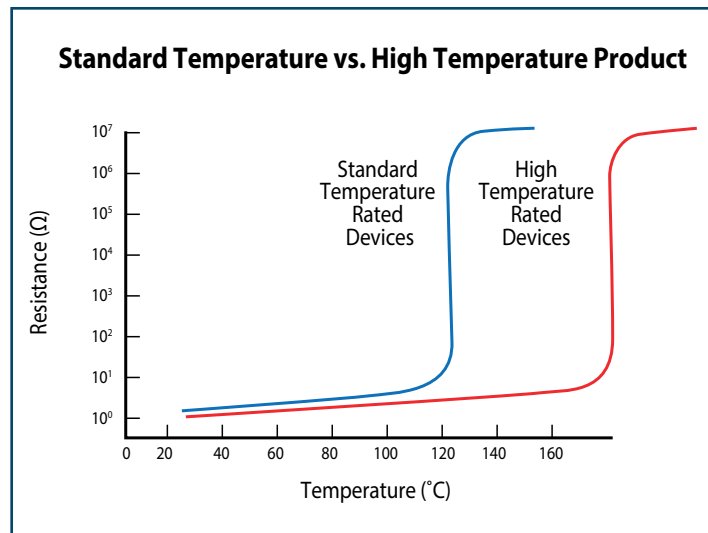
BENEFITS

- Higher operating temperature ratings (125 °C) provide effective overcurrent and overtemperature protection in certain harsh environments and high reliability applications
- Compact SMD designs provide designers enhanced flexibility in space-constrained layouts compared to equivalent radial leaded devices
- Footprint options from 0603 to 1812 (EIA) meet diverse design requirements and provide a variety of current and voltage ratings to support a range of markets and applications
- Low profile structures can accommodate over-molding requirements, as needed
- Backed by Bourns' world-class customer service and technical support, and available throughout Bourns' global network of authorized distributors

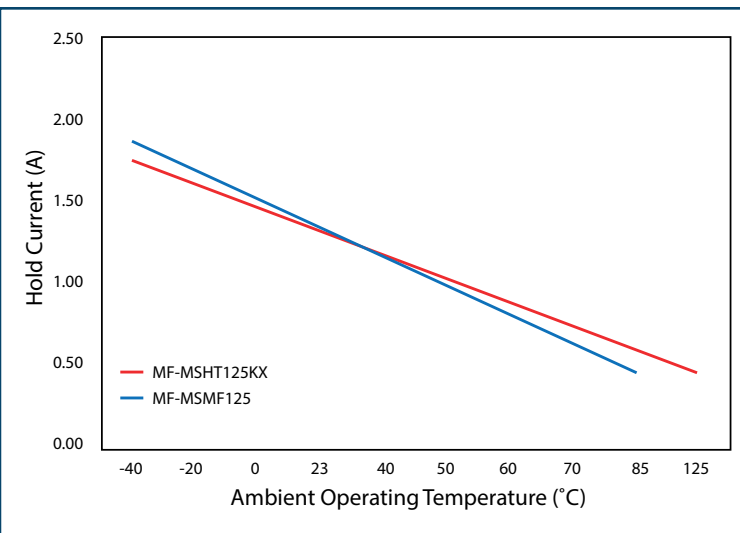
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.



RESISTANCE-TEMPERATURE CURVE



THERMAL DERATING GRAPH & TABLE



Series	Ambient Operating Temperature (°C)									
	-40	-20	0	+23	+40	+50	+60	+70	+85	+125
MF-MSMF125	2.00	1.69	1.47	1.25	1.03	0.92	0.90	0.69	0.53	
MF-MSHT125KX	1.81	1.64	1.45	1.25	1.10	1.01	0.93	0.84	0.70	0.34

PRODUCT CHARACTERISTICS

SURFACE MOUNT POLYMER PTCs

Model Series	Photo	Features	Footprint	Rated Voltage and Hold Current	Operating Temperature	Certifications
MF-FSHT		High Temperature	0603 / 1608	0.05 A 12 VDC 0.16 A	-40 °C to +125 °C	UL, CSA, TÜV
MF-PSHT			0805 / 2012	0.05 A 12 - 16 VDC 0.5 A		UL, CSA, TÜV, AEC-Q200
MF-NSHT			1206 / 3216	0.1 A 12 - 30 VDC 0.75 A		UL, CSA, TÜV, AEC-Q200
MF-USHT			1210 / 3225	0.1 A 12 - 36 VDC 2 A		UL, CSA, TÜV, AEC-Q200
MF-MSHT			1812 / 4532	0.2 A 9 - 42 VDC 1.75 A		UL, CSA, TÜV, AEC-Q200
MF-SMHT			2920 - 3425 / 7555 - 8764	1.36 A 16 VDC 3 A		AEC-Q200

RADIAL LEADED POLYMER PTCs

Model Series	Photo	Features	Rated Voltage and Hold Current	Operating Temperature	Certifications
MF-RHT		High Temperature	0.5 A 16 - 32 VDC 13 A	-40 °C to +125 °C	UL, CSA, TÜV, AEC-Q200
MF-RHS		High Temperature	3.5 A 16 VDC 13 A	-40 °C to +125 °C	UL, CSA

