

Type SMM

Square Ceramic Surface Mount Medium Blow Fuse

3812 Size
RoHS 6 Compliant



SMM Series Fuse



Features

- Medium Blow
- Surface mount high current fuse
- Current rating from 20A to 30A
- Wide operating temperature range from -55°C to 125°C
- Tape and Reel for auto-insert SMD process
- Compatible with reflow process
- Halogen Free
- Leadfree

Applications

- Voltage regulator module
- PC server
- Office electronic equipment
- Industrial equipment
- Medical equipment
- POE, POE+
- Power supply
- DC-DC Converter

HALOGEN FREE =

LEAD FREE =

Electrical Characteristics (UL / CSA / STD.248-14)

Testing Current	Blow Time	
	Minimum	Maximum
100%	4 Hrs.	N/A
200%	N/A	60 Sec

Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE	AMPERE RANGE / VOLT @ I.R.ABILITY
	E20624	20A - 30A / 250V @100A AC 125V @ 150A AC 72V @ 130A DC 65V @ 300A DC
		20A - 30A / 250V @100A AC 125V @ 150A AC 72V @ 130A DC 65V @ 300A DC

Specifications Subject to change without notice.

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HF Pb

bel

SMM May2012C

Electrical Specifications

Catalog Number	Ampere Rating (A)	Nominal Cold Resistance (ohm)	Nominal Volt-drop @100% In (volt)	Interrupting Rating	Max. Voltage Rating (V)	Melting I ² T @ 10 In (A ² Sec) Min.	Nominal Power Dissipation (W)	Agency Approvals	
								UL	CE
SMM 20	20A	0.0025	0.09	20A - 30A / 250V @100A AC 125V @ 150A AC 72V @ 130A DC 65V @ 300A DC	250	270	1.8	Y	Y
SMM 25	25A	0.0019	0.08		250	420	2.0	Y	Y
SMM 30	30A	0.0013	0.07		250	1000	2.1	Y	Y

Soldering Guidelines

Reflow Conditions Recommended: 240°C, 30 sec. max.

Pb-Free Process Compatibility:

When soldered to test boards using IR reflow in accordance with JEDEC J-STD-020 (260°C, 40 sec. max.), SMM samples exhibited DCR change of +10% to -20% from initial values.

Subsequent tests showed all samples complied with the stated electrical characteristics on this data sheet.

NOT Recommended for Wave solder / Direct immersion / Hand Solder

NOTES:

Test Conditions

For all SMM data, as well as UL Component investigation, all tests were conducted with fuse samples soldered on a PCB (1.6mm thick) test board with copper traces measuring 0.1 mm nominal thickness (3 oz.clad), 10mm wide and 100 mm overall length.

– UL Condition of Acceptability

- the following information is contained in the UL Component Recognition for SMM Fuse Series:

The maximum temperature recorded in open air was 100 °C in a 21 °C ambient (79 °C rise). Consideration should be given to checking operating temperatures in end-use application with regard to thermal index of surrounding materials and components.

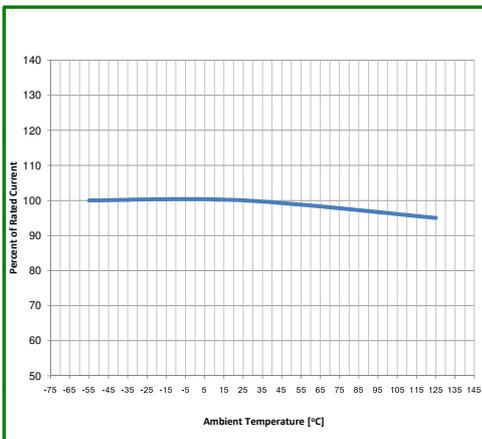
(Maximum temperature recorded at 80% of rating (24A) for the SMM30 rating was 69°C (48 °C rise).

Caution:

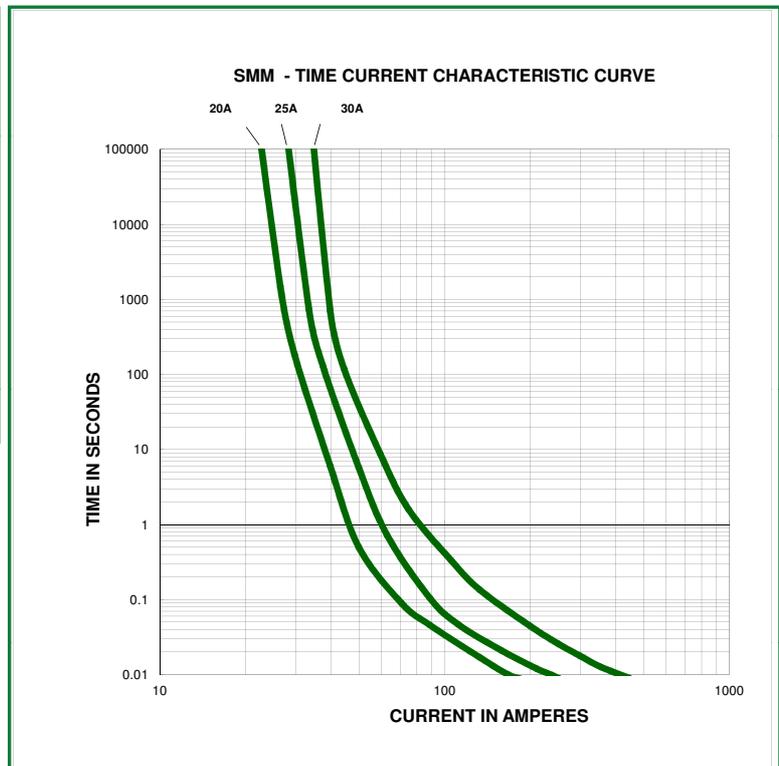
-Minimum fusing point:

The SMM Series fuses are NOT intended to be operated at currents between 100% and 200% of ampere rating. Prolonged operation at currents in this range may result in overheating of the fuse and/or desoldering of the fuse caps from the PCB pad.

Temperature Derating Curve



Average Time Current Curve



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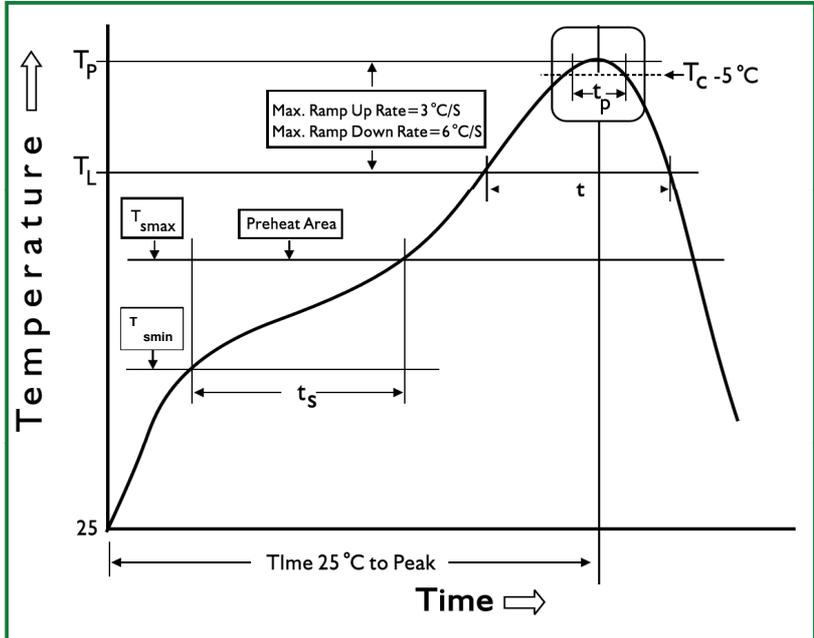
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Soldering Parameters

IR Reflow Profile	
Reflow Parameter	
Minimum preheat temperature(TsMIN)	130°C
Maximum preheat temperature(TsMAX)	170°C
Preheat Time	60-180 seconds
TsMAX to TL ramp-up rate	3°C / second max.
Time above temperature TL(tL)	200 °C 60-120 seconds
Peak Temperature (TP)	240 °C max.
Time Within +0 °C / -5°C of Peak TP	20 - 30 seconds.
Ramp-down rate	6°C / second max.



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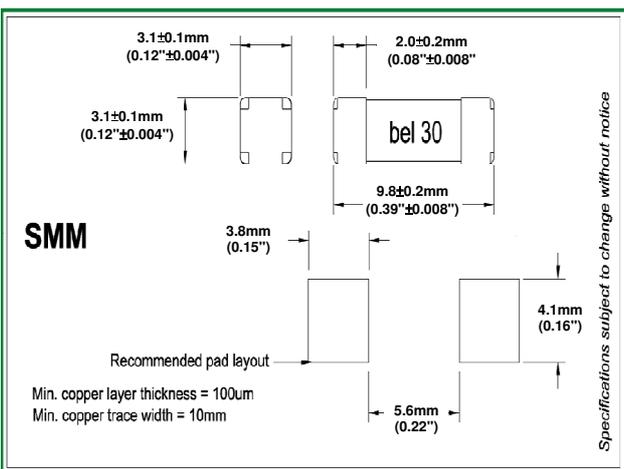
Physical Specifications

Materials	Body : Ceramic
	Terminations: Matte Tin Plated Brass Caps (100% Lead -free)
Marking	On Fuse:
	" bel ", "Current Rating" in black color
	On label:
	"bel" , "SMM", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and " ", " " (China RoHS compliant).

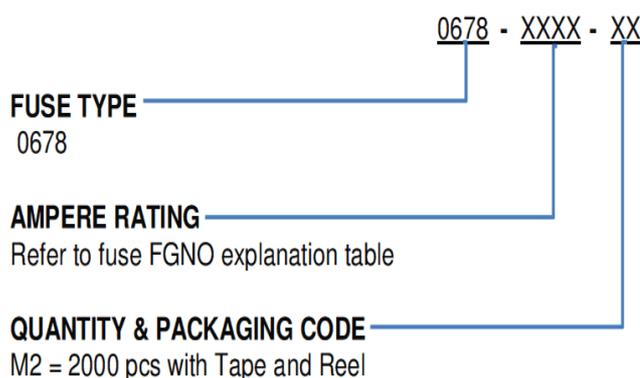
Environmental Specifications

Shock Resistance	MIL-STD-202G, Method 213B, Test Condition I (100 G's peak for 6 milliseconds; Sawtooth Waveform)
Vibration Resistance	MIL-STD-202G, Method 201A (10-55 Hz, 0.06 inch, total excursion).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test condition B (48 hrs).
Insulation Resistance	MIL-STD-202G, Method 302, Test Condition A (After Opening) 10,000 ohms minimum.
Solderability	MIL-STD-202G, Method 208H
Resistance to solder Heat	MIL-STD-202G Method 210F
Thermal Shock	MIL-STD-202G, Method 107G, Test Condition B (-65°C to +125°C).
Operating Temperature	-55°C to +125°C

Mechanical Dimensions



Ordering Information



Packaging

Packaging Tape & Reel	Packaging Specification	Quantity	Quantity & Packaging Code
16 mm wide tape with 13 inches Diameter reel	EIA Standard 481-D	2000	0678-XXXX-M2

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