

# Type SMM

## Square Ceramic Surface Mount Medium Blow Fuse

SMMD Sept., 2010



Catalog Number	Ampere Rating	Typical Cold Resistance (ohm)	Volt-drop @100% In (Volt) max.	Melting I <sup>2</sup> t @10In (A <sup>2</sup> Sec) min.	Maximum Power Dissipation (W)
SMM 20	20A	0.0025	0.09	270	1.8
SMM 25	25A	0.0019	0.08	420	2.0
SMM 30	30A	0.0013	0.07	1000	2.1

Consult manufacturer for other ratings

### Electrical Characteristics

Testing Current	Blow Time	
	Minimum	Maximum
100%	4 hrs	N/A
200%	N/A	60 sec

### Approvals



Safety Agency Approvals	Amp range / I.R. ability @ Volt
UL Recognized File No. E20624	20A - 30A / 100A@ 250V AC resistive 150A@125V AC resistive 300A@ 65V DC resistive

### 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**

### Environmental Specification

#### Shock Resistance

MIL-STD-202G, Method 213B, Test Condition I (100 G's peak for 6 milliseconds).

#### 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).

#### Thermal Shock Resistance

MIL-STD-202G, Method 107G, Test Condition B (-65°C to +125°C)

#### Insulation Resistance:

MIL-STD-202G, Method 302, Test Condition A  
(After Opening) 10,000 ohms minimum

#### Solderability:

MIL-STD-202G, Method 208H

#### Soldering Heat Resistance:

MIL-STD-202G, Method 210F

#### Operating Temperature

-55°C to +85°C Max.

### 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.

### Physical Specification

#### Materials

Ceramic Body / Matte Tin Plated Brass Caps

#### Marking

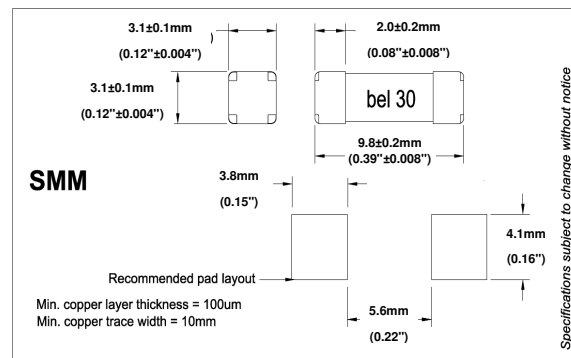
On fuse:  
"bel", "Current Rating" in black

On label:  
"bel", "SMM", Current Rating, Voltage Rating, Interrupting Rating, Safety Logo and "RoHS" (China RoHS compliant)

#### Packaging

2,000 fuses in 13 inches dia. reel, 16mm wide tape, 8mm pitch, per EIA Standard 481

### Mechanical Dimensions



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3812 Size  
RoHS6 Compliant  
HF Pb



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### SMM - TIME CURRENT CHARACTERISTIC CURVE

