



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Type SMM

Square Ceramic Surface Mount Medium Blow Fuse

HF Pb SMM Series - 3912 Size


RoHS 6 Compliant

Features

- Medium Blow
- Surface mount high current fuse
- Current rating from 10A to 30A
- Wide operating temperature range from -55 °C to 125 °C
- Tape & 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


LEAD FREE = 
HALOGEN 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	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
	E20624	10A - 30A / 250 VAC 72 VDC	10A - 30A / 250V @ 100A AC 125V @ 150A AC 72V @ 130A DC 65V @ 300A DC

* I.R. = INTERRUPTING RATING = SHORT CIRCUIT RATING (AMPS)

Physical Specifications

Materials	Body : Ceramic
	Terminations : Matte Tin plated Brass Caps
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).

Specifications subject to change without notice



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Environmental Specifications

Shock Resistance	MIL-STD-202G, Method 213B, Test Condition 1 (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
Moisture Sensitivity Level	1 (Peak Temperature at 240 °C for 30 seconds max)

Electrical Specifications

Catalog Number	Ampere Rating	Nominal Cold Resistance (ohm)	Nominal Volt-drop @100% In (Volt) max.	Voltage and Interrupting Ratings	Melting I ² T @10 In (A ² Sec) Min.	Nominal Power Dissipation (W)	Agency Approvals
SMM 10	10A	0.0056	0.18	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	50	1.8	Y
SMM 15	15A	0.0036	0.12		110	1.8	Y
SMM 20	20A	0.0025	0.09		270	1.8	Y
SMM 25	25A	0.0019	0.08		420	2.0	Y
SMM 30	30A	0.0013	0.07		1000	2.1	Y

Consult manufacturer for other ratings

Soldering Guidelines

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

When soldered to test boards using IR reflow in accordance with above 240 °C, SMM samples exhibited DCR change of + 10% to -20% from initial values , the fuse may emit solder.

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

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 0.1mm nominal thickness (3 oz. clad), 10mm wide and 100mm 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 SMM 30 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.

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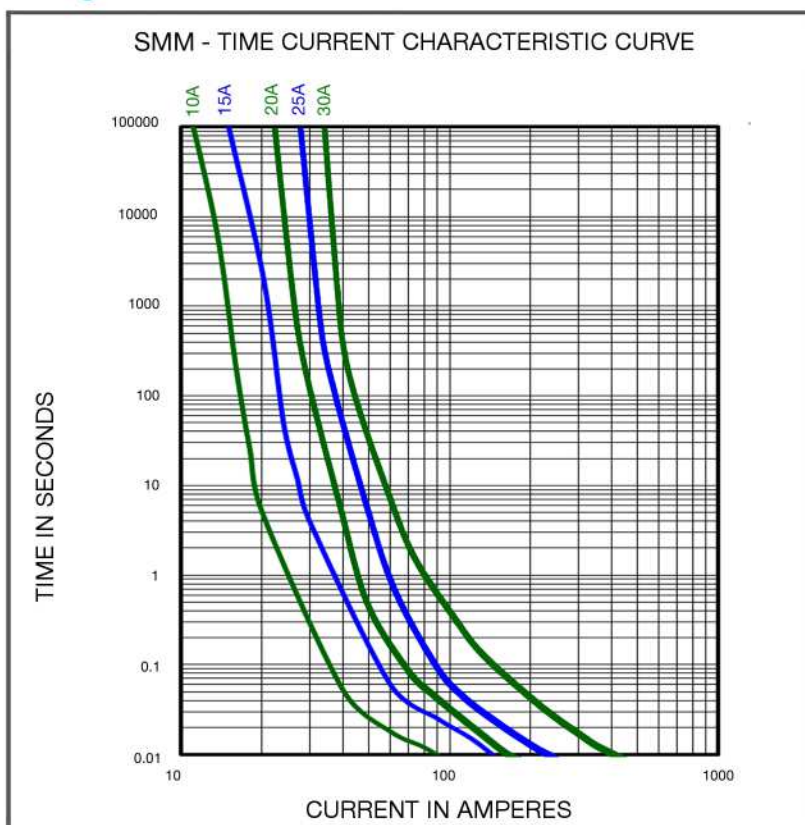
Type SMM

Square Ceramic Surface Mount Medium Blow Fuse

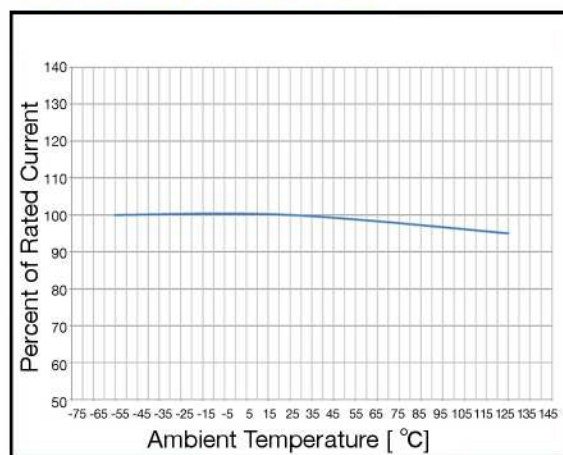
HF Pb SMM Series - 3912 Size

RoHS 6 Compliant

Average Time Current Curve



Temperature Derating Curve



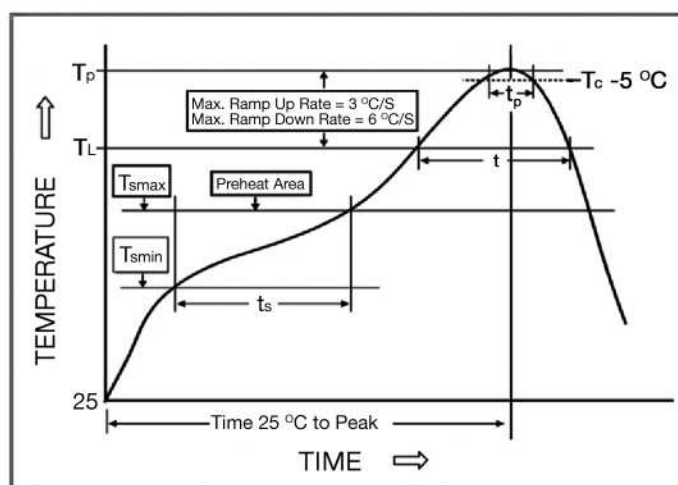
Soldering Parameters

IR Reflow Profile	
Preheat & Soak	
Temperature min (T_{smin})	150 °C
Temperature max (T_{smax})	200 °C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 seconds
Average ramp-up rate (T_{smax} to T_p)	3 °C/second max.
Liquidous temperature (T_L)	217 °C
Time at liquidous (t_L)	60 - 150 seconds
Peak temperature (T_p)	240 °C max
Time (t_p) within 5 °C of the specified classification temperature (T_c)	30 seconds
Average ramp-down rate (T_p to T_{smax})	6 °C/second max.
Time 25 °C to peak temperature	8 minutes max.

Soldering Guidelines

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

NOT Recommended for Wave solder / Direct immersion / Hand Solder



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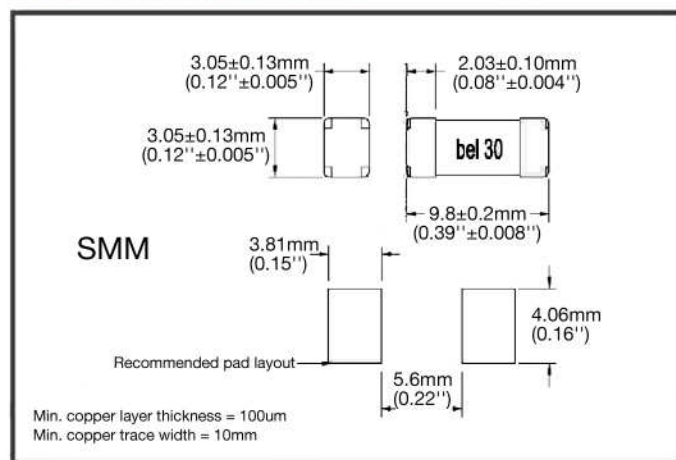
Fuse FGNO Explanation

0678 - [XXXX] - XX

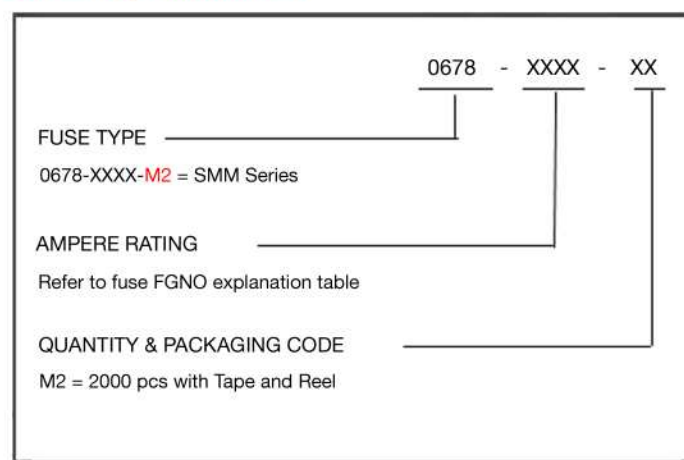
[XXXX]=Ampere Rating; XX=See Ordering Information as below

Amps	Bel FGNO[XXXX]
10	9100
12	9120
15	9150
20	9200
25	9250
30	9300

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-E	2000	0678-XXXX-M2

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