

Type SMP
Surface Mount Power Cross Protection Fuse

RoHS 6 Compliant

HF  **SMP Series Fuse**



Description

SMP Surface mount Power Cross Protection Fuses are primarily intended for use in telecommunication circuit applications requiring low current protection with high surge tolerance.

These fuses will withstand transient surge currents generated by lightning in accordance with the attached table.



SMP fuse guard protected circuitry against sustained overload or short circuit conditions. Such sustained overloads may be generated by accidental contact between utility cables and phone lines (power line cross).

SMP fuse are intended for use in circuits which require compliance with the test requirements specified in UL/IEC 1950/60950 and Telcordia GR 1089, Issue 3.

Features

- Surface mount power cross protection fuse.
- Designed to allow compliance with Telcordia GR-1089-Core
- Designed to serve the requirements of a wide range of telecommunication and networking equipment.
- Product is RoHS6 Compliant

Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE	AMPERE RANGE / VOLT @ I.R.ABILITY
	E20624	500mA - 2A / 125V @100A DC and 600V @60A AC
		500mA - 2A / 125V @100A DC and 600V @60A AC

Specifications Subject to change without notice.

Type SMP

Surface Mount Power Cross Protection Fuse

RoHS 6 Compliant

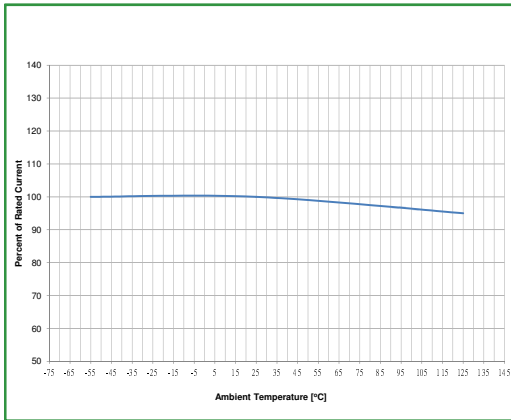


SMP May2012C

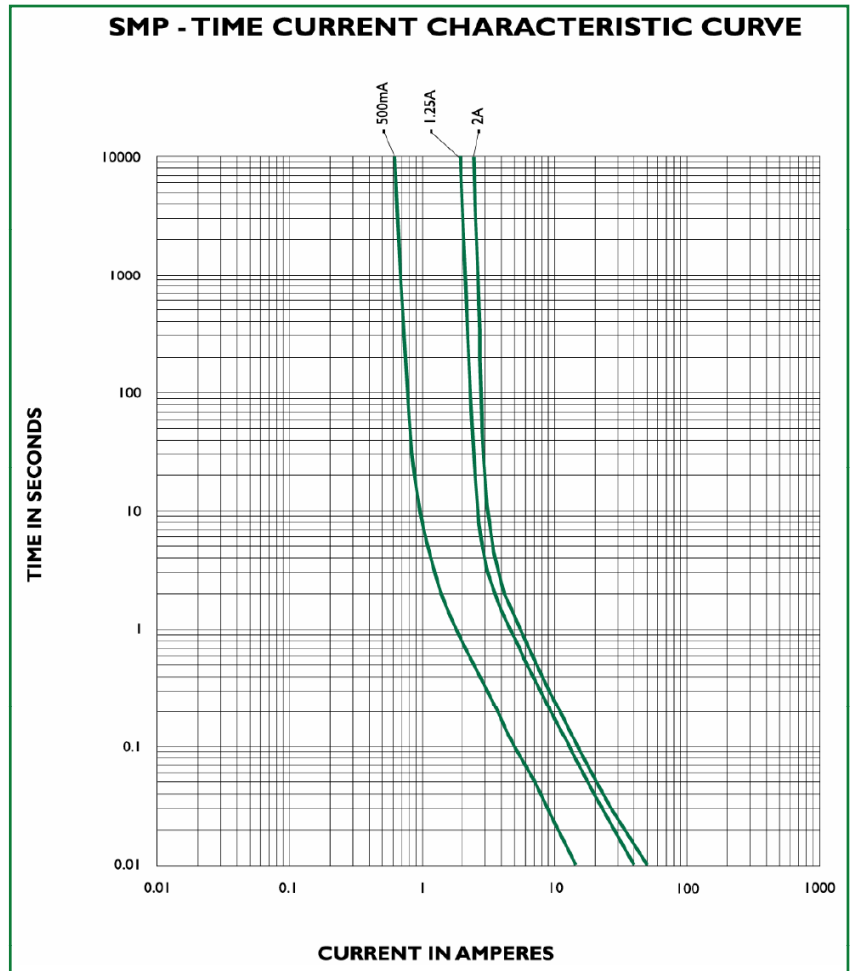
Electrical Specifications

Catalog Number	Ampere Rating (A)	Typical Cold Resistance (ohm)	Volt-drop @100% In (volt) Max.	Max. Voltage Rating (V)	Interrupting Rating	Melting I ² T <10 m Sec (A ² Sec)	Melting I ² T @ 10 In (A ² Sec)	Maximum Power Dissipation (W)	Agency Approvals	
									UL US	CE
SMP 500	500mA	0.320	0.25	600	600V @ 60A AC and 125V @100ADC	2.0	2.3	0.20	Y	Y
SMP 1.25	1.25A	0.079	0.16	600		14.0	17.0	0.40	Y	Y
SMP 2	2A	0.063	0.22	600		33.0	37.0	0.52	Y	Y

Temperature Derating Curve



Average Time Current Curve



Lightning Surge Withstand Capabilities

Max. Rise / Min. Decay (us)	Repetitions		Minimum Peak Voltage (V)	Minimum Withstand Peak Current (A)		
	Total	Each Polarity		SMP 500	SMP 1.25	SMP 2
10/1000	50	25	600	25	115	120
10/360	50	25	1000	30	125	150
10/1000	50	25	1000	25	110	120
2/10	20	10	2500	120	500	600
10/360	10	5	1000	30	125	150
2/10	2	1	5000	120	500	600
8/20	2	1	5000	75	300	350

Specifications Subject to change without notice.

AC Power fault Tests

GR-1089 1st Level Test	Voltage (Vrms)	Short Circuit Current (A)	Applications	Durations	Time For Fuse To Open		
					SMP 500	SMP 1.25	SMP 2
1	50	0.33	1	15 minutes	Will not open	Will not open	Will not open
2	100	0.17	1	15 minutes	Will not open	Will not open	Will not open
3	200,400,600	1	60	1 Sec	Will not open	Will not open	Will not open
4	1000	1	60	1 Sec	Will not open	Will not open	Will not open
5	Diagram	N/A For Fuses	60	5 Sec	N/A	N/A	N/A
6	600	0.5	1	30 Sec	Will not open	Will not open	Will not open
7	440	2.2	5	2 Sec	Will open	Will not open	Will not open
8	600	3	5	1.1 Sec	Will open	Will not open	Will not open
9	1000	5	5	0.4 Sec	Will open	Will not open	Will not open

CORPORATE OFFICE

Bel Fuse Inc.
206 Van Vorst Street
Jersey City, NJ 07302
Tel 201-432-0463
Fax 201-432-9542
E-Mail: belfuse@belf.com
Website: www.belfuse.com

FAR EAST OFFICE

Bel Fuse Ltd.
8/F Luk Hop Industrial Building
8 Luk Hop Street
San Po Kong
Kowloon, Hong Kong
Tel 852-2328-5515
Fax 852-2352-3706

EUROPE OFFICE

Bel Fuse Europe Ltd.
Preston Technology Management Centre
Marsh Lane, Suite F15
Preston, Lancashire, PR1 8UQ
United Kingdom
Tel 44-1772-556601
Fax 44-1772-561008

EUROPE

Bel Stewart GmbH
Industriestrasse 20
61381 Friedrichsdorf
Germany
Tel 49-6172-9552-0
Fax 49-6172-9552-40

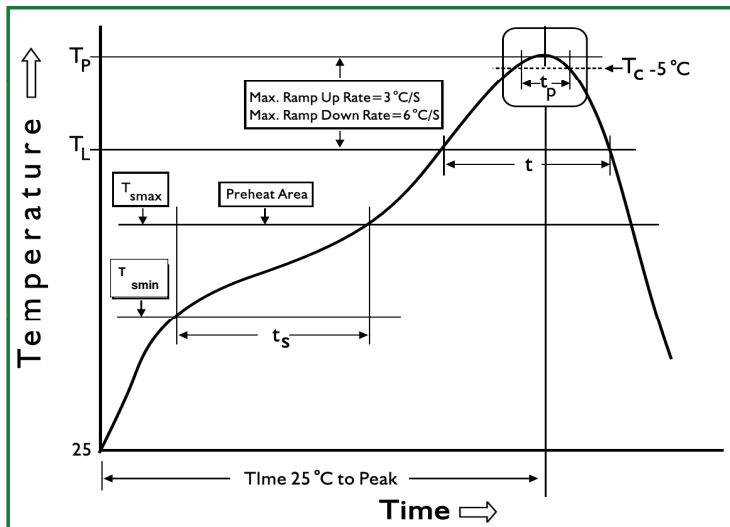
AC Current Limiting Protector Tests / Fusing Coordination Tests

Voltage (Vac)	Current (A)	Duration	Time For Fuse To Open		
			SMP 500	SMP 1.25	SMP 2
600V	2.2	Up to 15 minutes	1.0 Sec Max.	900 Sec Max.	Will not open
600V	2.6		0.8 Sec Max.	50 Sec Max.	2000 Sec Max.
600V	3		0.5 Sec Max.	10 Sec Max.	100 Sec Max.
600V	3.75		0.3 Sec Max.	5 Sec Max.	10 Sec Max.
600V	5		0.2 Sec Max.	2 Sec Max.	3 Sec Max.
600V	7		0.08 Sec Max.	1 Sec Max.	2 Sec Max.
600V	10		0.04 Sec Max.	0.5 Sec Max.	0.7 Sec Max.
600V	12.5		0.01 Sec Max.	0.2 Sec Max.	0.3 Sec Max.
600V	20		0.005 Sec Max.	0.07 Sec Max.	0.1 Sec Max.
600V	25		0.004 Sec Max.	0.04 Sec Max.	0.07 Sec Max.
600V	30		0.003 Sec Max.	0.02 Sec Max.	0.05 Sec Max.

Specifications Subject to change without notice.

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 5σ of Peak TP	20 - 30 seconds.
Ramp-down rate	6°C / second max.



Type SMP



Surface Mount Power Cross Protection Fuse

RoHS 6 Compliant



SMP May2012D

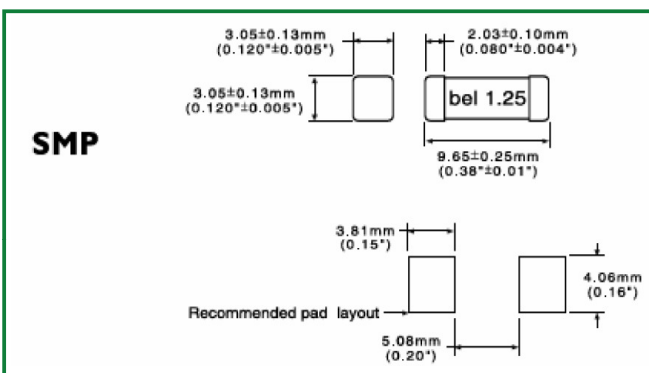
Physical Specifications

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

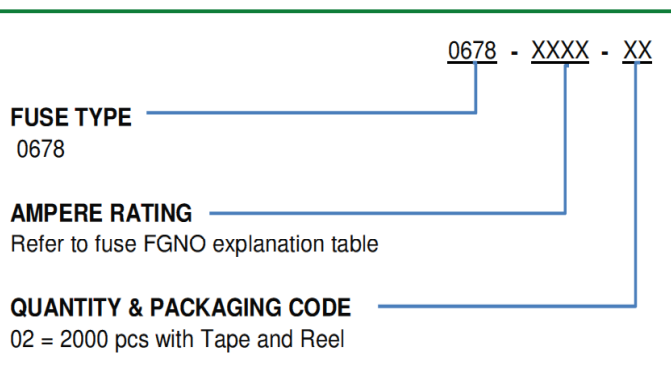
Environmental Specifications

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, Test Condition J.(235 °C, 30 sec)
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-02

Specifications Subject to change without notice.

CORPORATE OFFICE

Bel Fuse Inc.
206 Van Vorst Street
Jersey City, NJ 07302
Tel 201-432-0463
Fax 201-432-9542
E-Mail: belfuse@belf.com
Website: www.belfuse.com

FAR EAST OFFICE

Bel Fuse Ltd.
8/F Luk Hop Industrial Building
8 Luk Hop Street
San Po Kong
Kowloon, Hong Kong
Tel 852-2328-5515
Fax 852-2352-3706

EUROPE OFFICE

Bel Fuse Europe Ltd.
Preston Technology Management Centre
Marsh Lane, Suite F15
Preston, Lancashire, PR1 8UQ
United Kingdom
Tel 44-1772-556601
Fax 44-1772-561008

EUROPE

Bel Stewart GmbH
Industriestrasse 20
61381 Friedrichsdorf
Germany
Tel 49-6172-9552-0
Fax 49-6172-9552-40