



# Type SMP

RoHS 6 Compliant

## Surface Mount Power Cross Protection Fuse

SMPD0808



**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** fuses 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.

Catalog Number	Ampere Rating	Voltage Rating	Typical Cold Resistance (ohm)	Volt-drop @100% I <sub>n</sub> (Volt) max.	Melting I <sup>2</sup> T < 10 mSec (A <sup>2</sup> Sec)	Melting I <sup>2</sup> T @ 10 In (A <sup>2</sup> Sec)	Maximum Power Dissipation (W)
SMP 500	500mA	600V	0.350	0.23	2.0	2.3	0.20
SMP 1.25	1.25A	600V	0.075	0.18	14.0	17.0	0.40
SMP 2	2A	600V	0.056	0.16	33.0	37.0	0.52

Consult manufacturer for other ratings

### 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

Test Methods Per GR -1089/ TIA-968-A (FCC PT.68)

**Approvals** Amp Rating: 500mA - 2A



Safety Agency Approvals	Interrupting Rating	Power Factor	Intended Application
Recognized File no. E20624	60A@ 600V AC	Resistive	Telecom Protection
	100A@ 125V DC	Resistive	General Purpose

### RoHS 6 Compliant Product

RoHS Reflow Compatible reference: 240°C, 30 sec max

### Environmental Specification

#### Soldering Process Window

IR Reflow : 240°C, 30 sec max  
(Not Recommended For Wave Solder / Direct Immersion)

#### Shock Resistance

MIL-STD-202, 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)

#### 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, Test Condition J (235°C, 30 sec)

#### Thermal Shock Resistance

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

#### Operating Temperature

-55°C to +125°C

### Physical specification

#### Materials

Ceramic Body / Tin Plated Brass Caps  
Lead Free Solder

#### Marking

On fuse: "bel", "Current Rating"  
On label: "bel", "SMP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "M", "e" (China RoHS compliant)

#### Packaging

2000 fuses in 13 inches dia. Reel, 16mm wide tape, 8mm pitch, per EIA standard 481

### AC Power Fault Tests

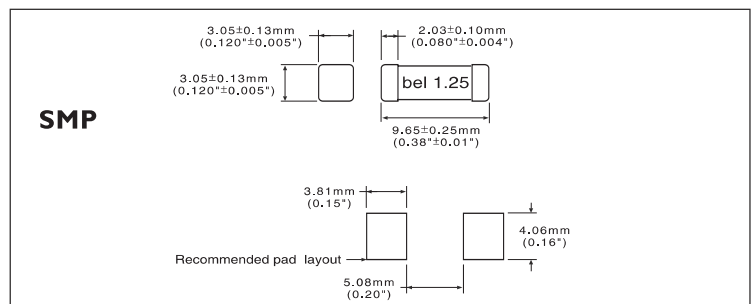
GR-1089 1st Level Test	Voltage (Vrms)	Short Circuit Current (A)	Applications	Durations	Time For Fuse To Open		
					SMP 500	SMP 1.25	SMP 2
1	50	0.33	1	15 minutes	Will not open	Will not open	Will not open
2	100	0.17	1	15 minutes	Will not open	Will not open	Will not open
3	200, 400, 600	1	60	1 Sec	Will 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

### 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		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

### Mechanical Dimensions



ORDERING INFORMATION SEE LAST 2 PAGES

# Type SMP

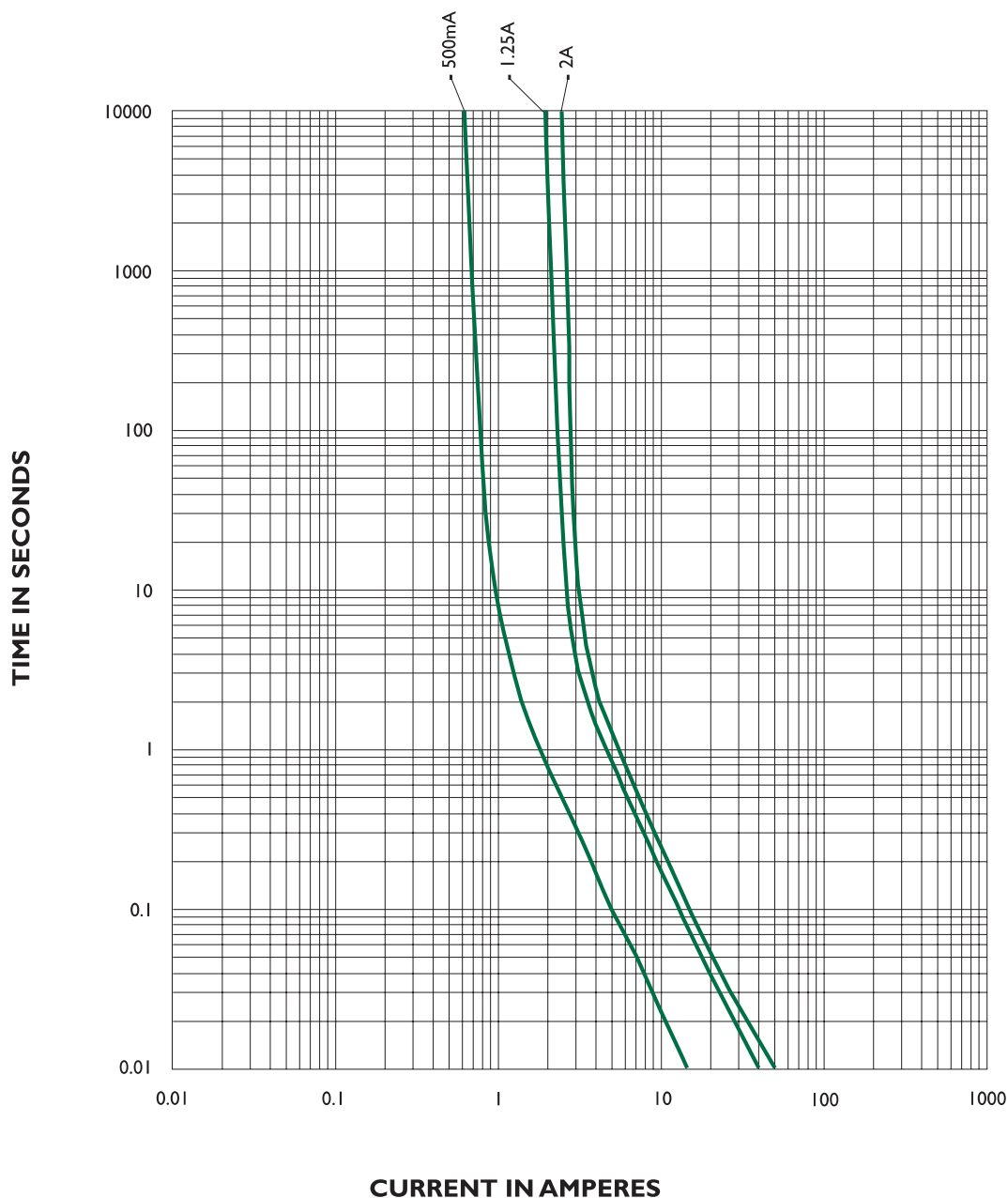
Surface Mount Power Cross Protection Fuse

RoHS 6 Compliant



SMPC0808

## SMP - TIME CURRENT CHARACTERISTIC CURVE



Specifications subject to change without notice

NOTE - see important information under "User Guide" on P.08

### Corporate Office

#### Bel Fuse Inc.

206 Van Vorst Street, Jersey City, NJ 07302  
Tel: 201-432-0463  
Fax: 201-432-9542  
E-Mail: [belfuse@belfuse.com](mailto:belfuse@belfuse.com)  
Website: [www.belfuse.com](http://www.belfuse.com)

### Far East Office

#### Bel Fuse Ltd.

8F/8 Luk Hop Street,  
San Po Kong  
Kowloon, Hong Kong  
Tel: 852-2328-5515  
Fax: 852-2352-3706

### European Office

#### Bel Fuse Europe Ltd.

Preston Technology Management Centre  
Marsh Lane, Preston PR1 8UG  
Lancashire, U.K.  
Tel: 44-1772-556601  
Fax: 44-1772-888366