



defining a degree of excellence

## Type SMP

### Surface Mount Power Cross Protection Fuse

SMPD0104



**SMP** Surface Mount Power Cross Protection Fuses are primarily intended for use in telecommunication circuit applications requiring low current protection with high surge tolerance. They are typically used to replace heat coil type devices. They are designed to be placed between the line input and the surge arresting components (mov, gas tube, zenor diode, air gaps, etc.)

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 used in circuits to obtain compliance with the test requirements specified in UL 1950/60950 and Bellcore GR 1089.

#### Electrical Characteristics (UL STD. 248-14)

Testing current	Blow Time	
	Minimum	Maximum
100%	4 hrs.	N/A
200%	3 sec	60 sec
500%	100 msec	1.5 sec
1000%	30 msec	300 msec

#### Approvals

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

#### Environmental Specification

##### Soldering Techniques & Compatibility

Reflow: Industrial standard, 240°C peak

##### Shock

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

##### Vibration

MIL-STD-202, Method 201 (10-55 Hz, 0.06 inch, total excursion)

##### Salt Spray

MIL-STD-202, Method 101, Test condition B (48 hrs)

##### Insulation Resistance

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

##### Solderability

MIL-STD-202, Method 208

##### Resistance to solder Heat

MIL-STD-202, Method 210, Test Condition J (235°C, 30 sec)

Catalog Number	Ampere Rating	Voltage Rating	Typical Cold Resistance (ohm)	Volt-drop @100% In (Volt) max.	Melting IPT < 10 mSec (A <sup>2</sup> Sec)	Melting IPT @ 10 In (A <sup>2</sup> Sec)	Peak Surge Current (Amp) 50 Pulses 1,000V 10 uS x 1000 uS	Peak Surge Current (Amp) 10 Pulses 1,000V 10 uS x 1000 uS	Maximum Power Dissipation (W)
SMP 500	500mA	600V	0.350	0.28	1.4	1.8	25	35	0.25
SMP 1.25	1.25A	600V	0.090	0.18	14	17	100	N/A	0.40

Consult manufacturer for other ratings

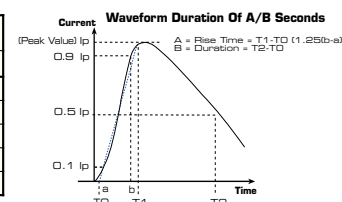
#### SMP 1.25 Surge Withstand Ratings

Voltage	Peak Surge Current	Maximum Rise/Duration Time	Repetitions
1000V	100A	10 uS x 1000 uS	100 Pulses (50 Each Polarity)
2500V	500A	2 uS x 10 uS	40 Pulses (20 Each Polarity)
5000V	500A	2 uS x 10 uS	4 Pulses (2 Each Polarity)

#### Power Cross (Telecom) Rating (Fuse Rated 0.1-1.5A)

Overload Current	Voltage	Clearing Time Limit	
		1.25A	500mA
200% Fuse Rating	600V	max. 60 sec	max. 60 sec
2.2A	600V	max. 15 min	max. 2 min
7A	600V	max. 1 sec	max. 100msec
40A	600V	max. 50 msec	max. 30 msec
60A	600V	max. 20 msec	max. 20 msec

#### Double-exponential Impulse Waveform



#### Thermal Shock

MIL-STD-202, Method 107, 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

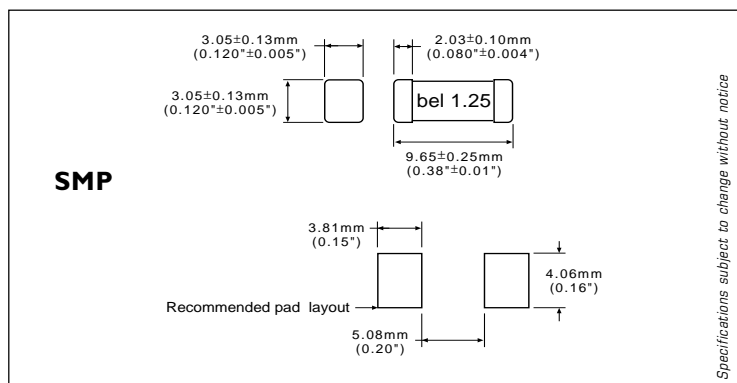
On fuse: "bel", "Current Rating"

On label: Above info; "Type", "Voltage Rating", "Appropriate Safety Logos"  
Interrupting Rating plus "CE"

##### Packaging

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

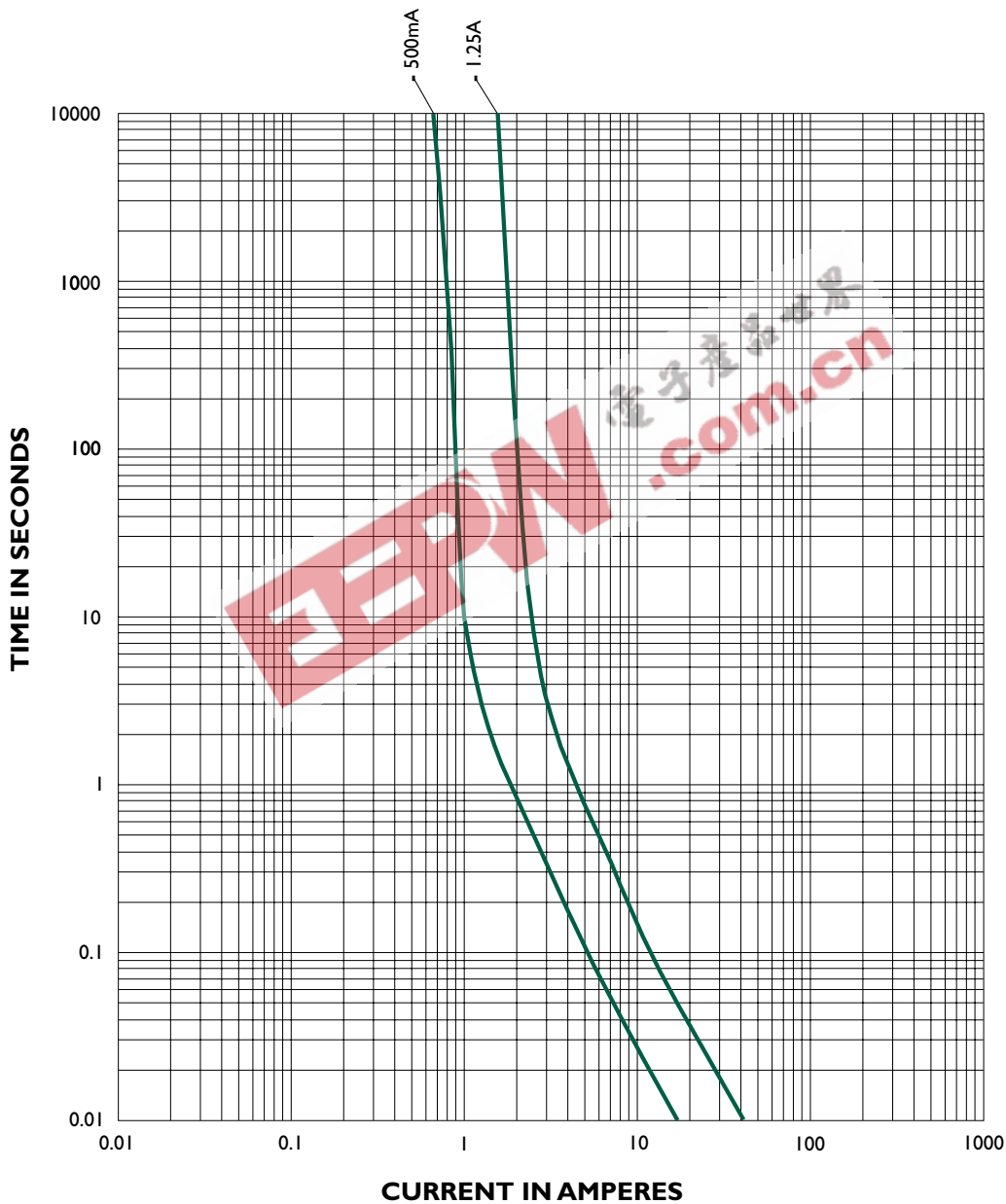
#### Mechanical Dimensions



ORDERING INFORMATION SEE PAGES 67 & 68

**Type SMP**  
Surface Mount Power Cross Protection Fuse

**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  
 Website: 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 8UD  
 Lancashire, U.K  
 Tel: 44-1772-556601  
 Fax: 44-1772-888366