



**THE DATASHEET OF**  
**0679-2000-05**



Not recommended for new applications. Please see 0679L

# Type SSQ

## Square Ceramic Surface Mount Quick Acting Fuse

**HF** **Pb** SSQ Series - 2410 Size

RoHS 6 Compliant

### Features

- Quick Acting
- Small size, 2410 SMD
- Wide range of current rating from 100mA to 15A
- Wide operating temperature range
- Tape & Reel for auto-insert SMD process
- Compatible with 260 °C, IR Pb-free solder process
- RoHS 6 compliant (MSL = 1)
- Halogen Free
- Leadfree

### Applications

- Notebook
- LCD monitor
- PC computer
- Office electronic equipment
- Industrial equipment
- Medical equipment
- POE, POE+
- LCD / LED monitor
- Power supply
- LCD / LED TV

LEAD FREE = **Pb**

HALOGEN FREE = **HF**



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

Testing Current	Blow Time	
	Minimum	Maximum
100%	4 Hrs.	N/A
200%	N/A	5 Sec

### Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
<b>SF</b>	LR39772		100mA - 7A / 125V @50A AC
<b>UL</b>	E20624	100mA - 7A / 125V AC 125V DC 7.1A - 12A / 125V AC 86V DC 15A / 86V DC	100mA - 7A / 125V @ 50A AC 86V @ 10,000A DC 125V @ 300A DC 7.1A - 12A / 125V @ 50A AC 86V @ 10,000A DC
<b>cUL</b>	E20624		15A / 86V @ 10,000A DC

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

### Physical Specifications

Materials	Body : Ceramic
	Terminations : Palladium plated Brass Caps
Marking	On Fuse :
	"Current Rating" in black color, "bel" stamped in end caps.
	On Label :
	"bel", "SSQ", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and " <b>RE</b> ", " <b>CE</b> "(China RoHS compliant).

Specifications subject to change without notice



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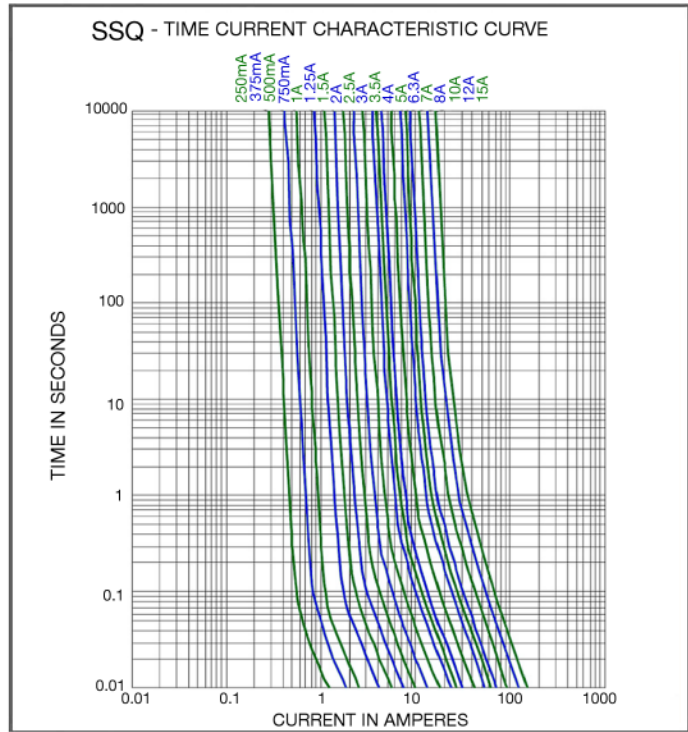
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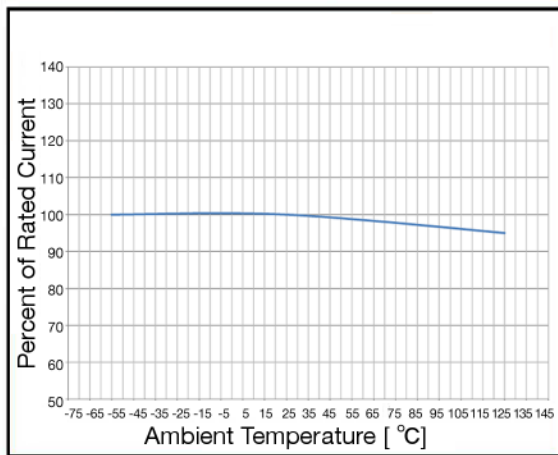
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Average Time Current Curve



Temperature Derating Curve



### Electrical Specifications

Catalog Number	Ampere Rating (A)	Typical Cold Resistance (ohm)	Volt-drop @100% In (Volt) max.	Voltage and Interrupting Ratings	Melting I <sup>2</sup> T <10 m Sec (A <sup>2</sup> Sec)	Melting I <sup>2</sup> T @10 In (A <sup>2</sup> Sec)	Maximum Power Dissipation (W)	Agency Approvals		
								UL	SP	RU
SSQ 250	250mA	0.560	0.30	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.02	0.01	0.07	Y	Y	
SSQ 375	375mA	0.335	0.27		0.04	0.03	0.09	Y	Y	
SSQ 500	500mA	0.235	0.26		0.07	0.06	0.11	Y	Y	
SSQ 750	750mA	0.131	0.19		0.11	0.07	0.13	Y	Y	
SSQ 1	1A	0.081	0.14		0.19	0.14	0.17	Y	Y	
SSQ 1.25	1.25A	0.065	0.14		0.33	0.24	0.20	Y	Y	
SSQ 1.5	1.5A	0.056	0.14		0.57	0.41	0.23	Y	Y	
SSQ 2	2A	0.039	0.13		1.0	0.8	0.30	Y	Y	
SSQ 2.5	2.5A	0.031	0.13		1.7	1.4	0.36	Y	Y	
SSQ 3	3A	0.025	0.13		3.0	2.4	0.43	Y	Y	
SSQ 3.5	3.5A	0.024	0.13		3.9	3.3	0.47	Y	Y	
SSQ 4	4A	0.019	0.13		5.1	4.4	0.51	Y	Y	
SSQ 5	5A	0.013	0.12		8.8	7.8	0.62	Y	Y	
SSQ 6.3	6.3A	0.011	0.12		15	14	0.74	Y	Y	
SSQ 7	7A	0.009	0.110		20	19	0.81	Y	Y	
SSQ 8	8A	0.008	0.110		26	25	0.89	Y		
SSQ 10	10A	0.007	0.110		46	44	1.07	Y		
SSQ 12	12A	0.005	0.100		70	69	1.24	Y		
SSQ15	15A	0.004	0.100		121	124	1.54			Y

Consult manufacturer for other ratings

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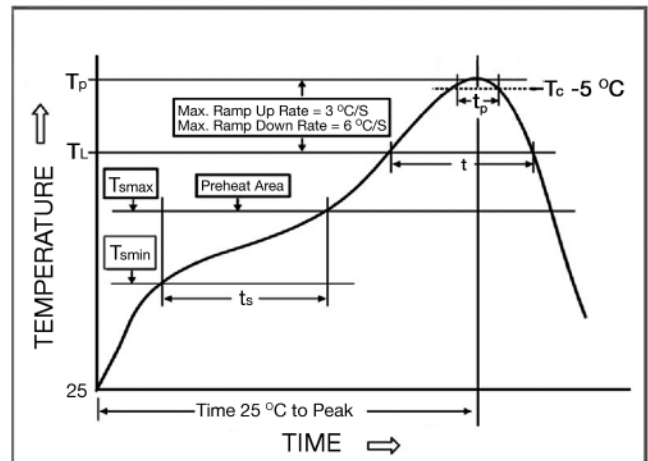
RoHS 6 Compliant

### Environmental Specifications

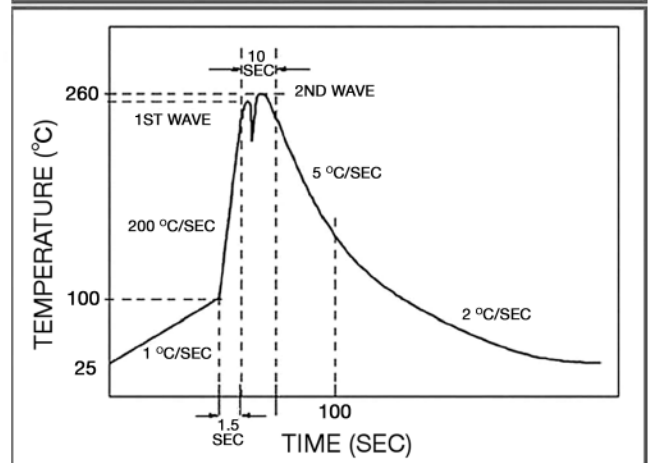
Shock Resistance	MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform)
Vibration Resistance	MIL-STD-202G, Method 201A(10-55 Hz,0.06 inch, total excursion).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test Condition B(48 hrs).
Insulation Resistance	MIL-STD-202G, 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, Test Condition C.Top Side(260 °C, 20 sec) MIL-STD-202G, Method 210F, Test Condition D.Bottom Side(260 °C,10 sec)
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 (According to IPC J-Std-020)

### Soldering Parameters

IR Reflow Profile (IPC/JEDEC J-STD-020D)	
<b>Preheat &amp; Soak</b>	
Temperature min (T <sub>sm</sub> )	150 °C
Temperature max (T <sub>sm</sub> )	200 °C
Time (T <sub>sm</sub> to T <sub>sm</sub> ) (ts)	60 - 120 seconds
Average ramp-up rate (T <sub>sm</sub> to T <sub>p</sub> )	3 °C/second max.
Liquidous temperature (T <sub>L</sub> )	217 °C
Time at liquidous (t <sub>L</sub> )	60 - 150 seconds
Peak temperature (T <sub>p</sub> )	260 °C max
Time (t <sub>p</sub> ) within 5 °C of the specified classification temperature (T <sub>c</sub> )	30 seconds
Average ramp-down rate (T <sub>p</sub> to T <sub>sm</sub> )	6 °C/second max.
Time 25 °C to peak temperature	8 minutes max.



Lead-free Wave Soldering Profile	
Wave Soldering Parameter	
Average ramp-up rate	200 °C / second
Heating rate during preheat	typical 1 - 2 °C / second Max 4 °C / second
Final preheat temperature	within 125 °C of soldering temperature
Peak temperature T <sub>p</sub>	260 °C
Time within +0 °C / -5 °C of actual peak temperature	10 seconds
Ramp-down rate	5 °C / second max.



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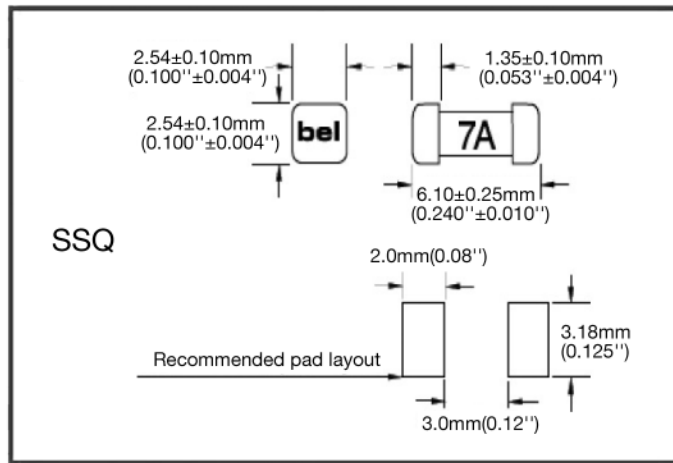
### Fuse FGNO Explanation

0679 - [XXXX] - XX

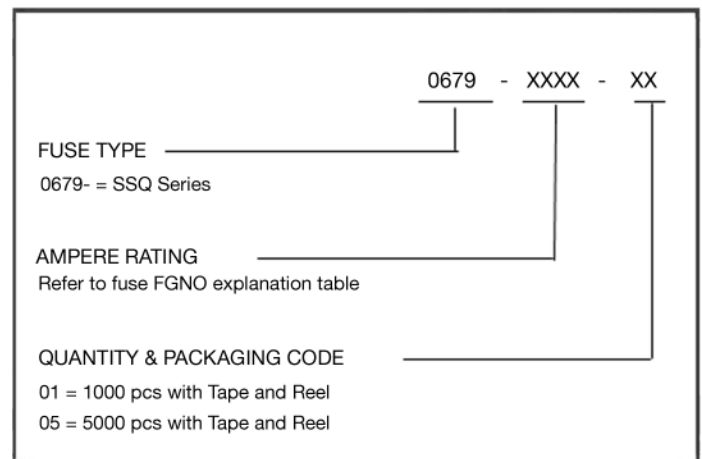
0679=SSQ; [XXXX]=Ampere Rating; XX=See Ordering Information as below

Fraction	Decimal	Milliamps	Bel FGNO[XXXX]	Fraction	Decimal	Amps	Bel FGNO[XXXX]
1/4	0.250	250	0250		1.0	1	1000
3/8	.375	375	0375	1-1/4	1.25	1.25	1250
1/2	.500	500	0500	1-1/2	1.50	1.5	1500
3/4	.750	750	0750		2.0	2	2000
				2-1/2	2.5	2.5	2500
					3.0	3	3000
				3-1/2	3.5	3.5	3500
					4.0	4	4000
					5.0	5	5000
					6.3	6.3	6300
					7.0	7	7000
					8.0	8	8000
						10	9100
						12	9120
						15	9150

### Mechanical Dimensions



### Ordering Information



### Packaging

Packaging Tape & Reel	Packaging Specification	Quantity	Quantity & Packaging Code
12 mm wide tape with 13 inches Diameter reel	EIA Standard 481-E	5000	05
12 mm wide tape with 7 inches Diameter reel	EIA Standard 481-E	1000	01

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- [Bel Fuse Inc. Information](#)

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- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management