

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* |
|---------------|---------------------------|---|--|
| SF | LR39772 | | 100mA - 7A / 125V @50A AC |
| UL | 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 |
| cUL | 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 " RoHS ", " CE "(China RoHS compliant). |

Specifications subject to change without notice



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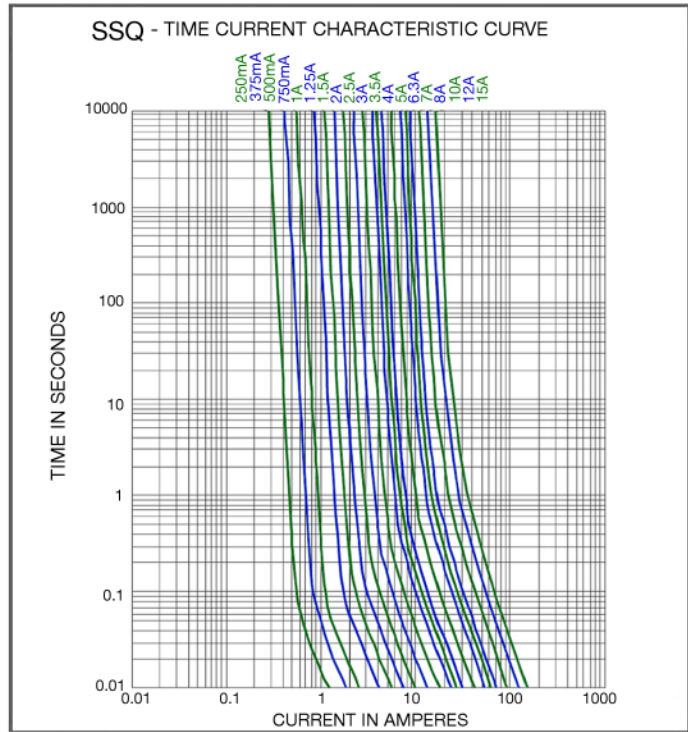
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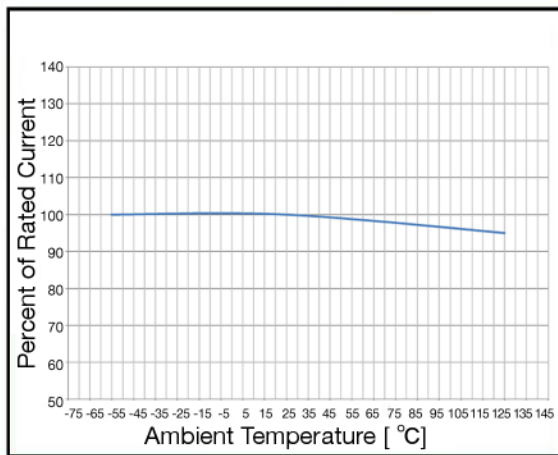
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Average Time Current Curve



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 ² T <10 m Sec (A ² Sec) | Melting I ² T @10 In (A ² 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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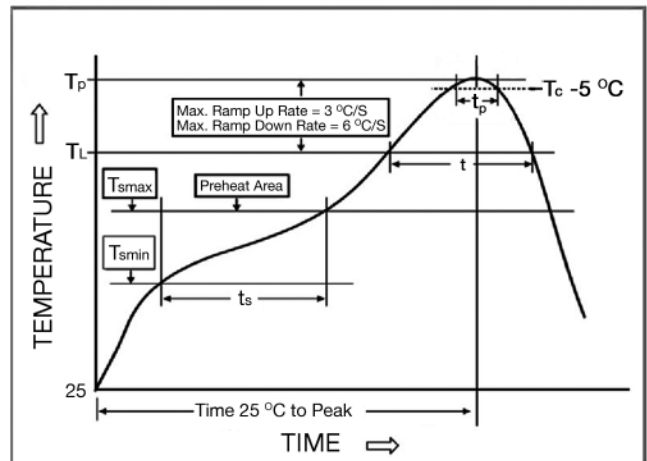
RoHS 6 Compliant

Environmental Specifications

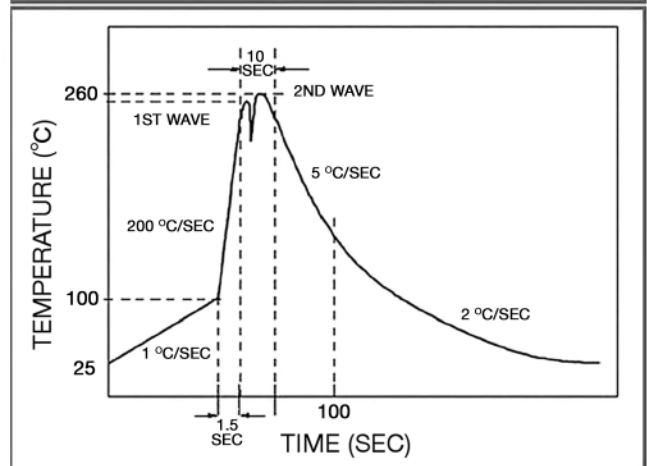
| | |
|----------------------------|--|
| Shock Resistance | MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform) |
| Vibration Resistance | MIL-STD-202G, Method 201A(10-55 Hz,0.06 inch, total excursion). |
| Salt Spray Resistance | MIL-STD-202G, Method 101E, 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) | |
|---|------------------|
| Preheat & Soak | |
| Temperature min (T _{sm}) | 150 °C |
| Temperature max (T _{sm} max) | 200 °C |
| Time (T _{sm} to T _{sm} max) (ts) | 60 - 120 seconds |
| Average ramp-up rate (T _{sm} max to T _p) | 3 °C/second max. |
| Liquidous temperature (TL) | 217 °C |
| Time at liquidous (tL) | 60 - 150 seconds |
| Peak temperature (T _p) | 260 °C max |
| Time (tp) within 5 °C of the specified classification temperature (T _c) | 30 seconds |
| Average ramp-down rate (T _p to T _{sm} max) | 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 _p | 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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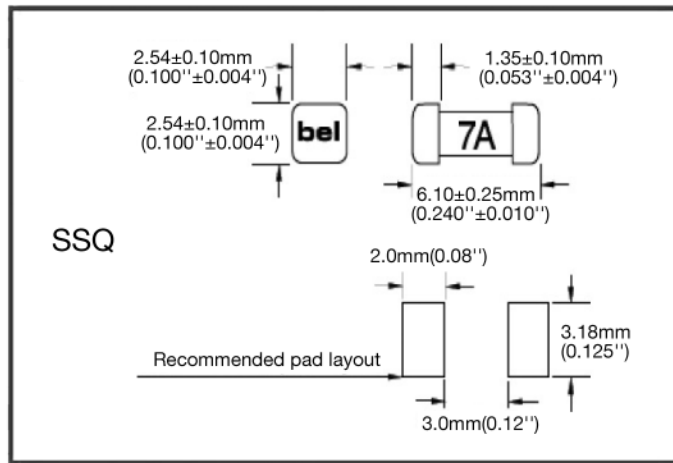
Fuse FGNO Explanation

0679 - [XXXX] - XX

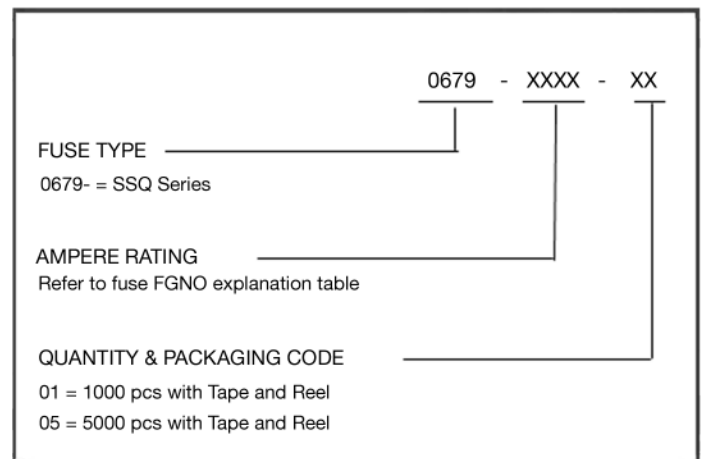
0679=SSQ; [XXXX]=Ampere Rating; XX=See Ordering Information as below

| 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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