

62mA-400mA EOL – Last Buy Date is Jun 30, 2020
 No replacements for these ratings

Type GSA / GSAP

Slow Blow Fuse Series

HF **Pb** GSA/GSAP Series, 6x32mm Ceramic Tube Slow Blow Fuse

RoHS 2 Compliant

Description

6x32mm Slow Blow, ceramic tube body cartridge fuse designed, approved and complied with UL and CSA standard 248-14.

Features

- Meet UL and CSA standard 248-14
- Wide operating temperature range
- Bulk packing available
- RoHS 2 compliant
- Halogen Free
- Lead Free

Applications


Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = **Pb**
 HALOGEN FREE = **HF**








Physical Specifications

| | |
|-----------|--|
| Materials | Body : Ceramic |
| | Cap : Nickel Plated Brass Caps |
| | Leads : Matte Tin Plated Copper |
| Marking | On Fuse : |
| | "bel", "GSA", "Current Rating", "Voltage Rating", "Appropriate Safety Logos", "✓" (RoHS 2 compliant) |
| | On Label : |
| | "bel", "GSA" or "GSAP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and " ^{RoHS} ✓ ", "  "(China RoHS compliant). |

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

| Testing Current | Blow Time | |
|-----------------|-----------|---------|
| | Minimum | Maximum |
| 100% | 4 hrs. | N/A |
| 135% | N/A | 1 Hr. |
| 200% | 5 sec | 30 sec |

Safety Agency Approvals

| Safety Agency | Safety Agency Certificate | Voltage Rating (V) | Ampere Range / Volt @ I.R. ability* |
|--|--|----------------------|--|
|   | E20624 LR39772 | 63mA-15A/ 250V AC | 63mA-8A/125V AC @10,000A 63mA-1A/250V AC @35A >1A-3.5A/250V AC @100A >3.5A-8A/250V AC @200A |
|   | | | 10A-15A/125V AC @10,000A 10A-15A/250V AC @750A |
|  | JET1037-31003-1010 JET1037-31003-1011 JET1037-31003-1007 | | 1A-5A/125V AC @500A >5A-15A/125V AC @300A |

*I.R.= Interrupting Rating = Short Circuit Rating(Amps)

Type GSA / GSAP

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 B. (260+/-5°C, 10+/-1 sec) |
| Thermal Shock | MIL-STD-202G, Method 107G, Test Condition B (-65°C to +125°C). |
| Operating Temperature | -55°C to +125°C |
| Terminal Strength | IEC-68-2-21 |

Electrical Specifications

| Catalog Number | Ampere Rating | Typical Cold Resistance (ohms) | Volt-drop @100%In (Volt) max. | Voltage and Interrupting Ratings | Melting I ² T <10 mSec (A ² Sec) | Melting I ² T @10 In (A ² Sec) | Maximum Power Dissipation (W) | Agency Approvals | | | | | |
|----------------|---------------|--------------------------------|-------------------------------|---|--|--|-------------------------------|------------------|----|-------|----|----|---|
| | | | | | | | | UL US | SP | UL US | SP | CS | |
| GSA(P) 63-R | 63mA | 75.5 | 7.33 | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.087 | 0.098 | 0.71 | Y | Y | | | | |
| GSA(P) 80-R | 80mA | 48.4 | 6.27 | | 0.135 | 0.152 | 0.74 | Y | Y | | | | |
| GSA(P) 100-R | 100mA | 29.4 | 4.41 | | 0.209 | 0.238 | 0.55 | Y | Y | | | | |
| GSA(P) 125-R | 125mA | 17.5 | 3.45 | | 0.323 | 0.372 | 0.58 | Y | Y | | | | |
| GSA(P) 160-R | 160mA | 12.3 | 3.13 | | 0.499 | 0.581 | 0.60 | Y | Y | | | | |
| GSA(P) 200-R | 200mA | 7.1 | 2.13 | | 0.773 | 0.908 | 0.63 | Y | Y | | | | |
| GSA(P) 250-R | 250mA | 5.0 | 1.97 | | 1.2 | 1.4 | 0.66 | Y | Y | | | | |
| GSA(P) 300-R | 300mA | 3.17 | 1.52 | | 1.9 | 2.2 | 0.70 | Y | Y | | | | |
| GSA(P) 375-R | 375mA | 2.14 | 1.26 | | 2.6 | 3.2 | 0.73 | Y | Y | | | | |
| GSA(P) 500-R | 500mA | 1.38 | 1.07 | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 4.4 | 5.4 | 0.78 | Y | Y | | | | |
| GSA(P) 600-R | 600mA | 1.05 | 0.98 | | 6.9 | 8.5 | 0.82 | Y | Y | | | | |
| GSA(P) 700-R | 700mA | 0.648 | 0.69 | | 8.5 | 11 | 0.84 | Y | Y | | | | |
| GSA(P) 750-R | 750mA | 0.642 | 0.68 | | 10 | 12 | 0.85 | Y | Y | | | | |
| GSA(P) 1-R | 1A | 0.374 | 0.59 | | 16 | 21 | 0.91 | Y | Y | | | | Y |
| GSA(P) 1.25-R | 1.25A | 0.248 | 0.43 | | 25 | 32 | 0.96 | Y | Y | | | | Y |
| GSA(P) 1.6-R | 1.6A | 0.155 | 0.38 | | 39 | 50 | 1.01 | Y | Y | | | | Y |
| GSA(P) 2-R | 2A | 0.115 | 0.36 | | 61 | 79 | 1.06 | Y | Y | | | | Y |
| GSA(P) 2.5-R | 2.5A | 0.079 | 0.29 | | 94 | 123 | 1.12 | Y | Y | | | | Y |
| GSA(P) 3-R | 3A | 0.058 | 0.27 | | 146 | 192 | 1.18 | Y | Y | | | | Y |
| GSA(P) 4-R | 4A | 0.039 | 0.23 | | 226 | 300 | 1.24 | Y | Y | | | | Y |
| GSA(P) 5-R | 5A | 0.029 | 0.22 | | 349 | 469 | 1.31 | Y | Y | | | | Y |
| GSA(P) 6-R | 6A | 0.018 | 0.19 | | 286 | 455 | 1.61 | Y | Y | | | | Y |
| GSA(P) 7-R | 7A | 0.016 | 0.18 | | 372 | 592 | 1.81 | Y | Y | | | | Y |
| GSA(P) 8-R | 8A | 0.013 | 0.17 | | 483 | 769 | 1.95 | Y | Y | | | | Y |
| GSA(P) 10-R | 10A | 0.010 | 0.17 | 817 | 1300 | 2.26 | | | Y | Y | | Y | |
| GSA(P) 12-R | 12A | 0.008 | 0.15 | 1277 | 2031 | 2.56 | | | Y | Y | | Y | |
| GSA(P) 15-R | 15A | 0.006 | 0.15 | 2123 | 3377 | 2.96 | | | Y | Y | | Y | |

Consult manufacturer for other ratings

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Specifications subject to change without notice

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 Jersey City, NJ 07302 USA

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Type GSA / GSAP

Temperature Derating Curve



Average Time Current Curve



Soldering parameters

| 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 Tp | 260°C |
| Time within +0°C / -5°C of actual peak temperature | 10 seconds |
| Ramp-down rate | 5°C / second max. |



Type GSA / GSAP

Fuse FGNO Explanation

06X6 R [XXXX] -XX

0606R=GSA/0616R=GSAP; [XXXX]=Ampere Rating; XX=See Ordering Information as below

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 1/16 | 0.063 | 63 | 0063 |
| 8/100 | .080 | 80 | 0080 |
| 1/10 | .100 | 100 | 0100 |
| 1/8 | .125 | 125 | 0125 |
| | .160 | 160 | 0160 |
| 2/10 | .200 | 200 | 0200 |
| 1/4 | .250 | 250 | 0250 |
| 3/10 | .300 | 300 | 0300 |
| 3/8 | .375 | 375 | 0375 |
| 1/2 | .500 | 500 | 0500 |
| 6/10 | .600 | 600 | 0600 |
| 7/10 | .700 | 700 | 0700 |
| 3/4 | .750 | 750 | 0750 |

| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
| | 1.0 | 1 | 1000 |
| 1-1/4 | 1.25 | 1.25 | 1250 |
| | 1.60 | 1.6 | 1600 |
| | 2.0 | 2 | 2000 |
| 2-1/2 | 2.5 | 2.5 | 2500 |
| | 3.0 | 3 | 3000 |
| | 4.0 | 4 | 4000 |
| | 5.0 | 5 | 5000 |
| | 6.0 | 6 | 6000 |
| | 7.0 | 7 | 7000 |
| | 8.0 | 8 | 8000 |
| | | 10 | 9100 |
| | | 12 | 9120 |
| | | 15 | 9150 |

Mechanical Dimensions



*Diameter lead 0.032"±0.002" for 5A and less
 *Diameter lead 0.039"±0.002" for 6A and above

Ordering Information



Packaging

| Packaging Option | Packaging Specification | Quantity | Packaging Code | Inside Tape Spacing |
|---------------------|-------------------------|----------|----------------|---------------------|
| Bulk | N/A | 1000 | 33 | N/A |
| Bulk (Pigtail Type) | N/A | 1000 | 33 | N/A |



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