

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",<br>"Appropriate Safety Logos", "✓" ( RoHS 2 compliant )                                                                                                                                                    |
|           | On Label :                                                                                                                                                                                                                                                   |
|           | "bel", "GSA" or "GSAP", "Current Rating", "Voltage Rating", "Interrupting Rating",<br>"Appropriate Safety Logos" and " <sup>RoHS</sup> ✓ ", "  "(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*                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------|
| <br> | E20624<br>LR39772                        | 63mA-15A/<br>250V AC | 63mA-8A/125V AC @10,000A<br>63mA-1A/250V AC @35A<br>>1A-3.5A/250V AC @100A<br>>3.5A-8A/250V AC @200A |
| <br> |                                          |                      | 10A-15A/125V AC @10,000A<br>10A-15A/250V AC @750A                                                    |
|                                                                                         | JET1037-31003-1010<br>JET1037-31003-1011 |                      | 1A-5A/125V AC @500A                                                                                  |
|                                                                                                                                                                            | JET1037-31003-1007                       |                      | >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 <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) | 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

**EOL—**  
 Last Buy Date is  
 Jun 30, 2020



Specifications subject to change without notice

Bel Fuse Inc.  
 206 Van Vorst Street  
 Jersey City, NJ 07302 USA

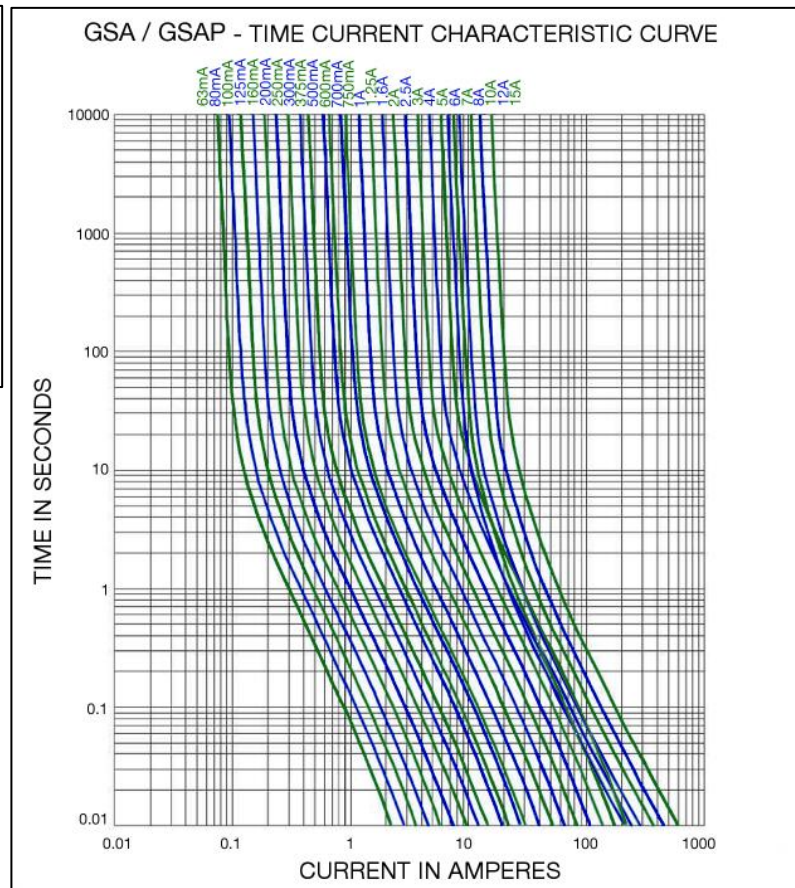
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[belfuse.com/circuit-protection](http://belfuse.com/circuit-protection)

# Type GSA / GSAP

## Temperature Derating Curve

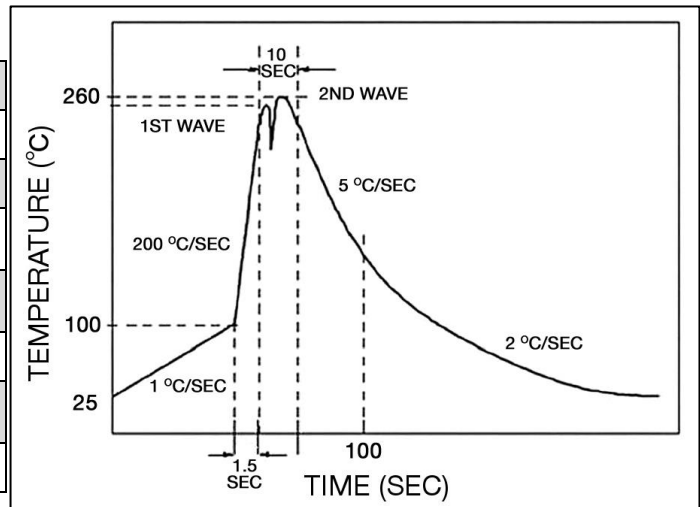


## Average Time Current Curve



## 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<br>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.                            |



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# 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           |

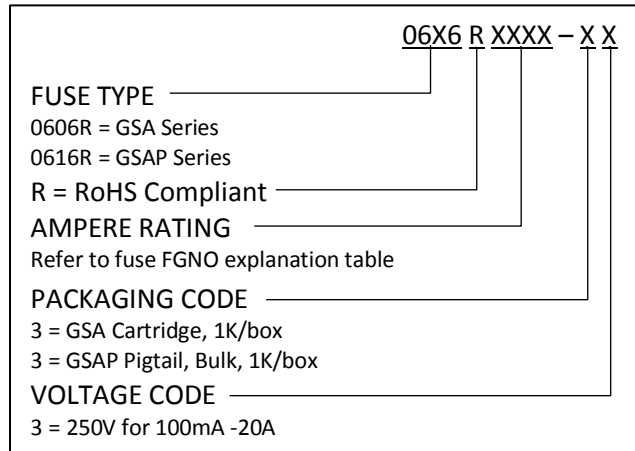
| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
|          | 1.0     | 1    | 1000           |
| 1-1/4    | 1.25    | 1.25 | 1250           |
|          | 1.60    | 1.6  | 1600           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 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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- Защита от снятия компонента с производства.



#### Как с нами связаться

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