

# Type GSA

## Slow Blow Fuse Series

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

RoHS 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
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- 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 compliant)
	On Label :
	"bel", "GSA", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "✓", "RoHS", "e" (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	Ampere Rating/ Voltage Rating	Ampere Range / Volt @ I.R. ability*
<b>UL</b> US <b>SP</b>	E20624 LR39772	500mA-15A/ 250V AC	500mA-8A/125V AC@10,000A 500mA-1A/250V AC@35A >1A-3.5A/250V AC@100A >3.5A-8A/250V AC@200A
<b>UL</b> US <b>SP</b>			10A-15A/125V AC@10,000A 10A-15A/250V AC@750A
<b>PSE</b>	JET1037-31003-1010 JET1037-31003-1011		1A-5A/125V AC@500A
	JET1037-31003-1007		>5A-15A/125V AC@300A

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

## 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				
												
GSA 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 600-R	600mA	1.05	0.98		6.9	8.5	0.82	Y	Y			
GSA 700-R	700mA	0.648	0.69		8.5	11	0.84	Y	Y			
GSA 750-R	750mA	0.642	0.68		10	12	0.85	Y	Y			
GSA 1-R	1A	0.374	0.59		16	21	0.91	Y	Y			Y
GSA 1.25-R	1.25A	0.248	0.43		25	32	0.96	Y	Y			Y
GSA 1.6-R	1.6A	0.155	0.38		39	50	1.01	Y	Y			Y
GSA 2-R	2A	0.115	0.36		61	79	1.06	Y	Y			Y
GSA 2.5-R	2.5A	0.079	0.29		94	123	1.12	Y	Y			Y
GSA 3-R	3A	0.058	0.27		146	192	1.18	Y	Y			Y
GSA 4-R	4A	0.039	0.23		226	300	1.24	Y	Y			Y
GSA 5-R	5A	0.029	0.22		349	469	1.31	Y	Y			Y
GSA 6-R	6A	0.018	0.19		286	455	1.61	Y	Y			Y
GSA 7-R	7A	0.016	0.18		372	592	1.81	Y	Y			Y
GSA 8-R	8A	0.013	0.17		483	769	1.95	Y	Y			Y
GSA 10-R	10A	0.010	0.17		817	1300	2.26			Y	Y	Y
GSA 12-R	12A	0.008	0.15		1277	2031	2.56			Y	Y	Y
GSA 15-R	15A	0.006	0.15		2123	3377	2.96			Y	Y	Y

Consult manufacturer for other ratings

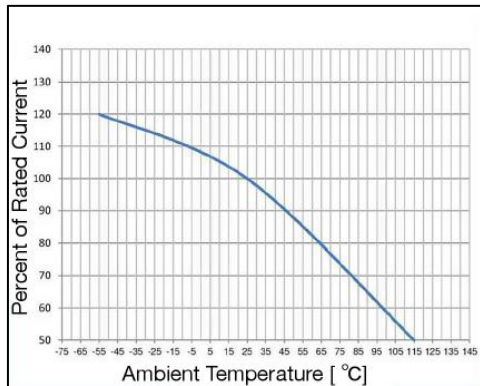


Specifications subject to change without notice

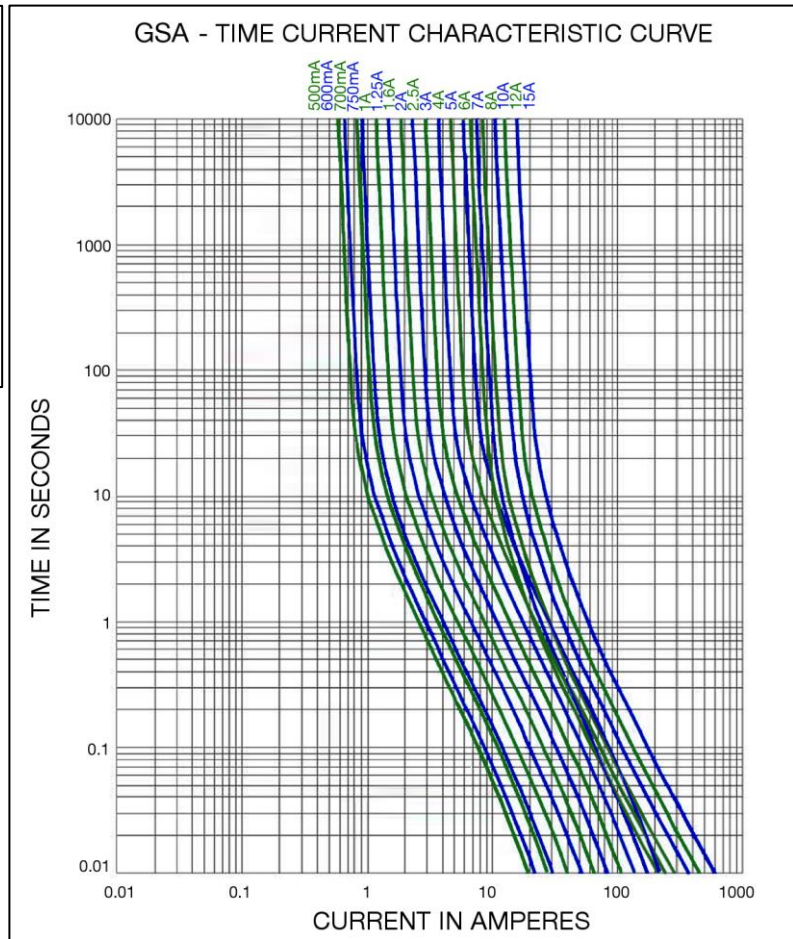
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## Temperature Derating Curve

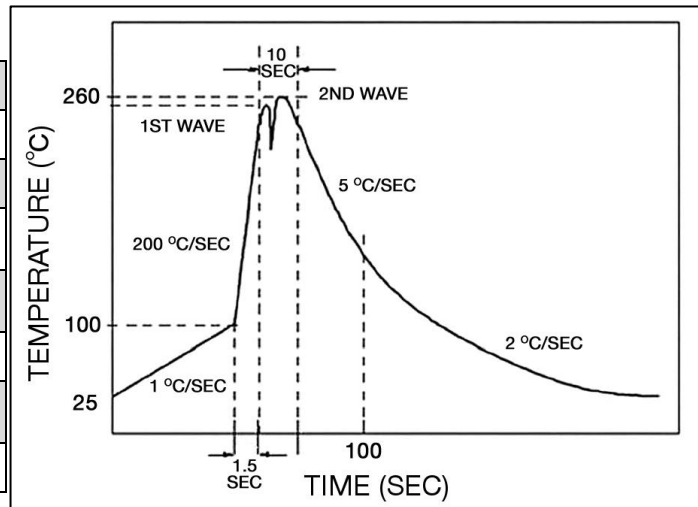


## Average Time Current Curve



## 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.



## Fuse FGNO Explanation

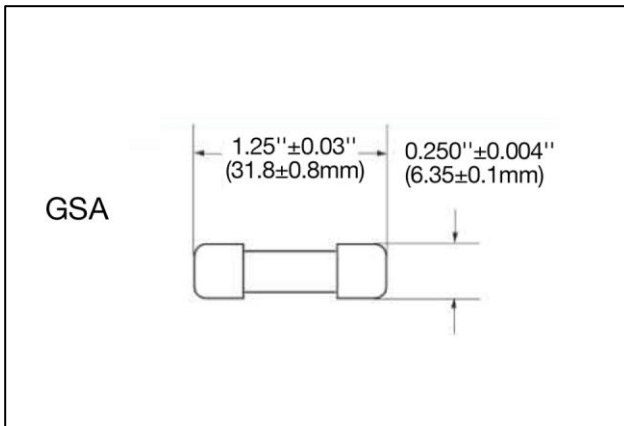
06X6 R [XXXX] -XX

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

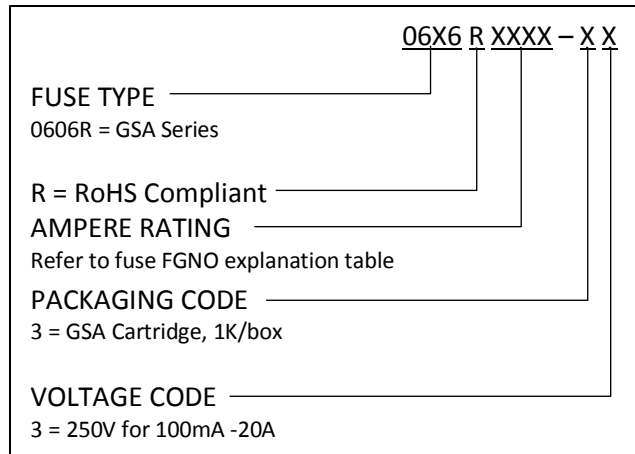
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/2	.500	500	0500
6/10	.600	600	0600
7/10	.700	700	0700
3/4	.750	750	0750

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



## Ordering Information



## Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	33	N/A