Type GSA / GSAP

Slow Blow Fuse Series

HF Pb GSA/GSAP Series, 6x32mm Ceramic Tube Slow Blow Fuse — RoHS 6 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 and Tape & Reel packing available
- RoHS 6 compliant
- Halogen Free
- Leadfree

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 6 compliant)
	On Label :
	"bel","GSA"or"GSAP","Current Rating","Voltage Rating","Interrupting Rating", " Appropriate Safety Logos" and " ", " 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 NUMBER	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
c UL us, SP	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
c US, SP			10A - 15A / 125V AC @ 10,000A 10A - 15A / 250V AC @ 750A
PS E	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)

Specifications subject to change without notice

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a bel group

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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 (ohm)	Volt-drop @100% In (Volt) max.	Voltage and Interrupting Ratings	Melting I²T <10 mSec (A² Sec)	Melting I²T @10 In (A² Sec)	Maximum Power Dissipation (W)	Agency Approvals				
								c UL us		c SA us		
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		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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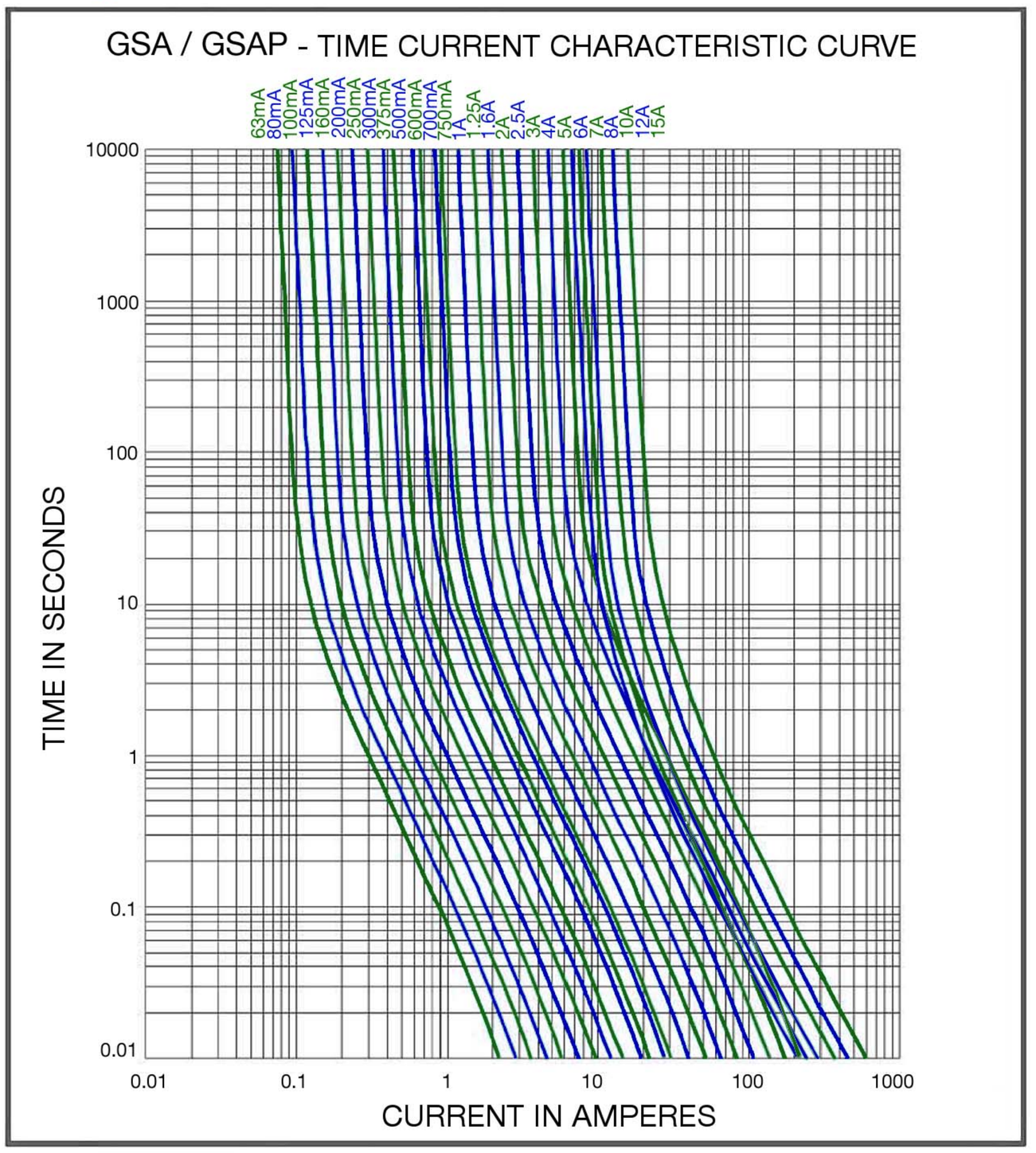
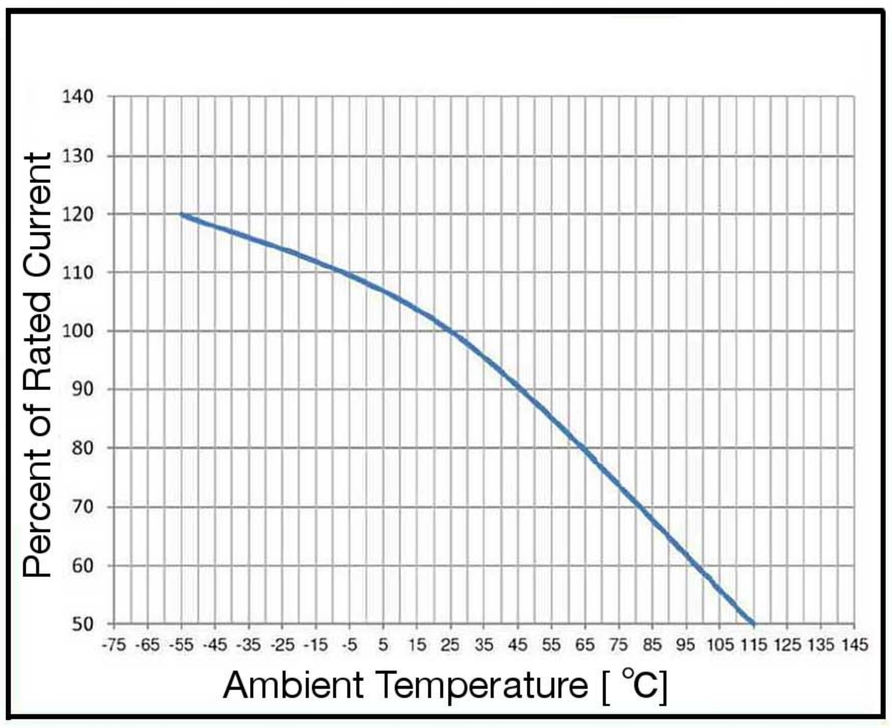
Average Time Current Curve

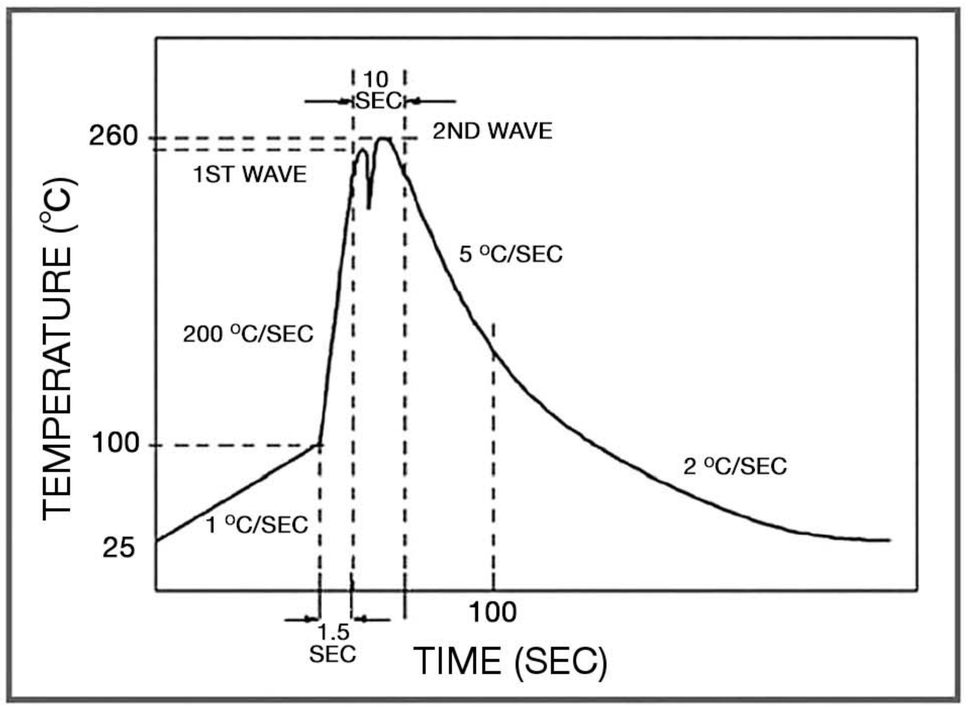


Temperature Derating Curve



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.



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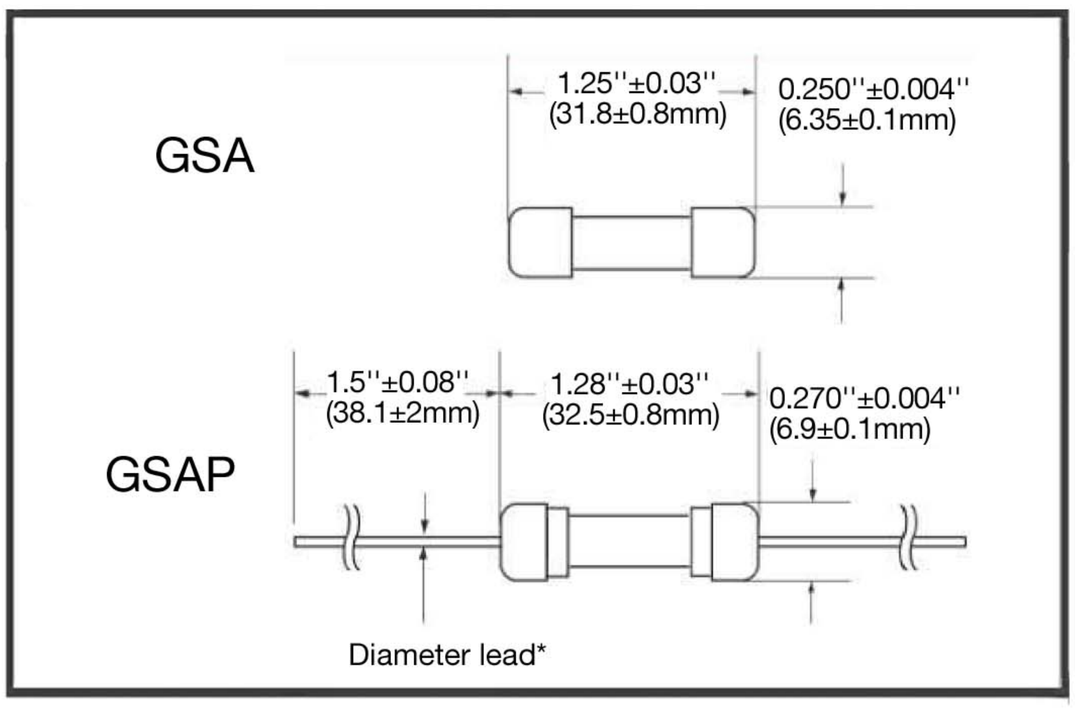
Fuse FGNO Explanation
06XX X [XXXX] X XX, [XXXX]=Ampere Rating

Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/32	0.032	32	0032
1/25	.040	40	0040
1/20	.050	50	0050
1/16	.063	63	0063
8/100	.080	80	0080
1/10	.100	100	0100
1/8	.125	125	0125
15/100	.150	150	0150
	.160	160	0160
2/10	.200	200	0200
1/4	.250	250	0250
3/10	.300	300	0300
	.315	315	0315
3/8	.375	375	0375
4/10	.400	400	0400
1/2	.500	500	0500
6/10	.600	600	0600
	.630	630	0630
7/10	.700	700	0700
3/4	.750	750	0750
8/10	.800	800	0800

Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/4	1.25	1.25	1250
1-1/2	1.50	1.5	1500
	1.60	1.6	1600
	2.0	2	2000
2-1/4	2.25	2.25	2250
2-1/2	2.5	2.5	2500
	3.0	3	3000
	3.15	3.15	3150
3-1/2	3.5	3.5	3500
	4.0	4	4000
	5.0	5	5000
	6.0	6	6000
	6.3	6.3	6300
	7.0	7	7000
7-1/2	7.5	7.5	7500
	8.0	8	8000
		10	9100
		12	9120
		15	9150
		20	9200
		25	9250
		30	9300

Mechanical Dimensions



*Diameter lead 0.040'' for all ratings

Ordering Information

06XX R XXXX - X X

FUSE TYPE
0606 = GSA
0616 = GSAP

R = RoHS Compliant

AMPERE RATING
Refer to fuse FGNO explanation table

PACKAGING CODE
3 = GSA Cartridge , 1K / box
3 = GSAP, Pigtail, Bulk, 1K / box
7 = GSAP, Pigtail, T&R, 1K / reel

VOLTAGE CODE
3 = 250V for 100mA - 20A

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
Tape & Reel, 10mm Pitch	EIA-296-F	1000	73	73

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