

# Type 5ST / 5STP

## Time - lag Fuse Series (Low Breaking Capacity)

HF <sup>Pb</sup> 5ST/5STP Series, 5x20mm Glass Tube Time - lag Fuse

RoHS 6 Compliant

### Description

5x20mm Time lag, low breaking capacity, glass tube body cartridge fuse designed, approved and complied with IEC 60127-2, standard sheet 3.

### Features

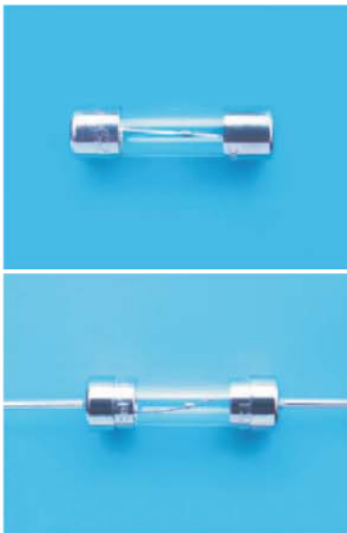
- Meet IEC standard 60127-2, sheet 3
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 6 compliant
- Halogen Free
- Leadfree

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = <sup>Pb</sup>  
HALOGEN FREE = HF



### Physical Specifications

Materials	Body : Glass
	Cap : Nickel Plated Brass Caps
	Leads : Matte Tin Plated Copper
Marking	On Fuse :
	"bel", "T", "Current Rating", "L", "250V",
	"Appropriate Safety Logos", "✓" (RoHS 6 compliant)
	On Label :
	"bel", "5ST" or "5STP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "M", "G" (China RoHS compliant).

### Electrical Characteristics (IEC-127-2 STANDARD SHEET 3)

Rated Current	1.5 In		2.1 In		2.75 In		4 In		10 In	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
63mA to 100mA	1	2	200	10	40	3	10	300		
125mA to 12.5A	1	2	600	10	150	3	20	300		
	hr.	min.	ms	sec	ms	sec	ms	ms		

In clause 9.2, the test voltage for 5STP ratings from 63mA to 6.3A is 63VDC.

### Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE NUMBER	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
	1513392	63mA - 10A / 250V AC	63mA - 6.3A / 250V AC @ 35A or 10 In whichever is greater
	40000507		
	E20624		63mA - 10A / 250V AC @ 35A or 10 In whichever is greater
	LR39772		
	2003010207030316		63mA - 6.3A / 250V AC @ 35A or 10 In whichever is greater

\* I.R. = INTERRUPTING RATING = SHORT CIRCUIT RATING (AMPS)

Specifications subject to change without notice



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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 B (After Opening) 100, 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 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	CSA	CCC	S	CE
5ST(P) 63-R	63mA	19.5	1.90	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.008	0.021	0.28	Y	Y	Y	Y	Y
5ST(P) 80-R	80mA	13.2	1.68		0.015	0.036	0.29	Y	Y	Y	Y	Y
5ST(P) 100-R	100mA	11.0	1.63		0.03	0.06	0.30	Y	Y	Y	Y	Y
5ST(P) 125-R	125mA	7.02	1.29		0.05	0.11	0.30	Y	Y	Y	Y	Y
5ST(P) 160-R	160mA	4.10	0.92		0.08	0.19	0.31	Y	Y	Y	Y	Y
5ST(P) 200-R	200mA	2.60	0.77		0.15	0.33	0.32	Y	Y	Y	Y	Y
5ST(P) 250-R	250mA	1.70	0.64		0.26	0.58	0.32	Y	Y	Y	Y	Y
5ST(P) 315-R	315mA	1.30	0.57		0.46	1.01	0.33	Y	Y	Y	Y	Y
5ST(P) 400-R	400mA	0.72	0.41		0.81	1.76	0.34	Y	Y	Y	Y	Y
5ST(P) 500-R	500mA	0.57	0.47		1.4	3.1	0.34	Y	Y	Y	Y	Y
5ST(P) 630-R	630mA	0.18	0.14		0.9	1.5	0.18	Y	Y	Y	Y	Y
5ST(P) 800-R	800mA	0.14	0.14		1.6	2.5	0.20	Y	Y	Y	Y	Y
5ST(P) 1-R	1A	0.10	0.13		2.4	3.3	0.17	Y	Y	Y	Y	Y
5ST(P) 1.25-R	1.25A	0.052	0.08		4.1	5.5	0.19	Y	Y	Y	Y	Y
5ST(P) 1.6-R	1.6A	0.036	0.08		6.9	8.9	0.23	Y	Y	Y	Y	Y
5ST(P) 2-R	2A	0.028	0.08		12	15	0.26	Y	Y	Y	Y	Y
5ST(P) 2.5-R	2.5A	0.023	0.08		20	24	0.31	Y	Y	Y	Y	Y
5ST(P) 3.15-R	3.15A	0.017	0.08		33	39	0.36	Y	Y	Y	Y	Y
5ST(P) 4-R	4A	0.013	0.07		56	64	0.42	Y	Y	Y	Y	Y
5ST(P) 5-R	5A	0.0096	0.07		95	105	0.49	Y	Y	Y	Y	Y
5ST(P) 6.3-R	6.3A	0.0073	0.07		160	173	0.57	Y	Y	Y	Y	Y
5ST(P) 8-R	8A	0.0062	0.07		260	282	0.80	Y	Y			
5ST(P) 10-R	10A	0.0052	0.07		439	461	1.00	Y	Y			
5ST(P) 12.5-R	12.5A	0.0041	0.07		490	679	1.70					

Consult manufacturer for other ratings

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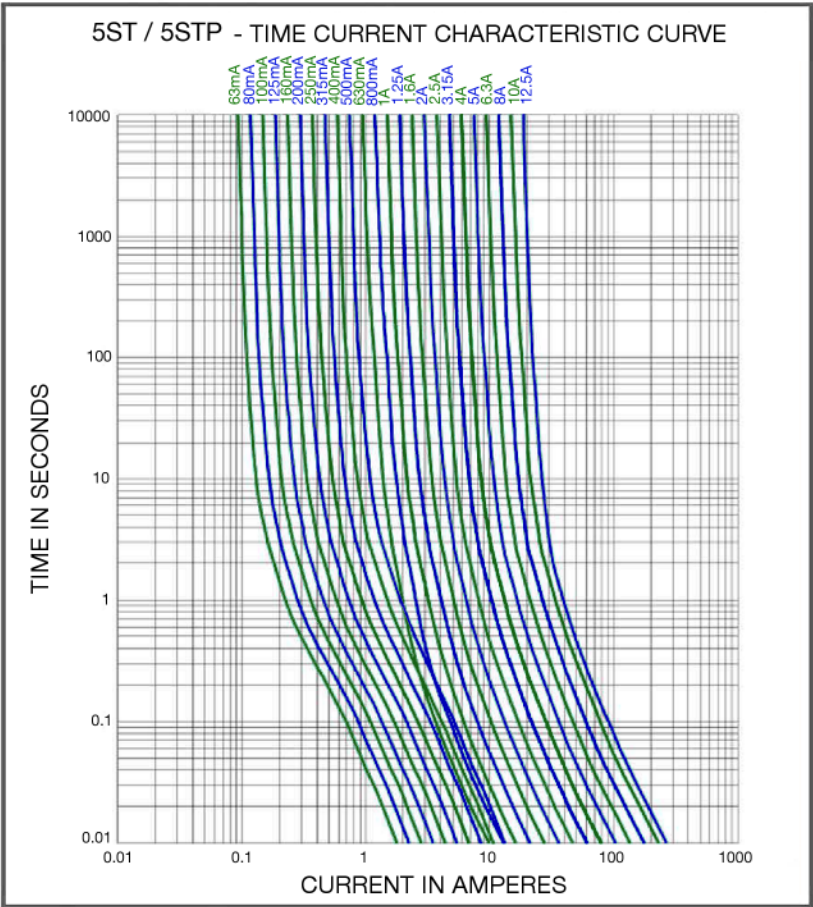
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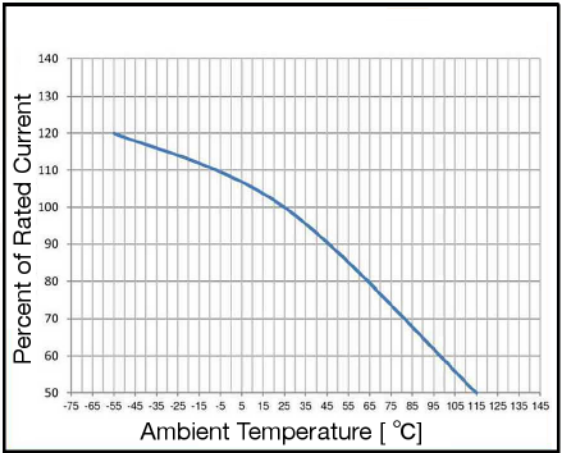
HF Pb 5ST/5STP Series, 5x20mm Glass Tube Time - lag Fuse

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### Average Time Current Curve

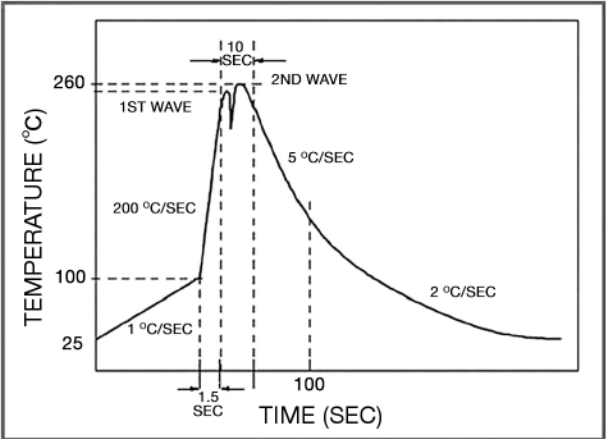


### Temperature Derating Curve



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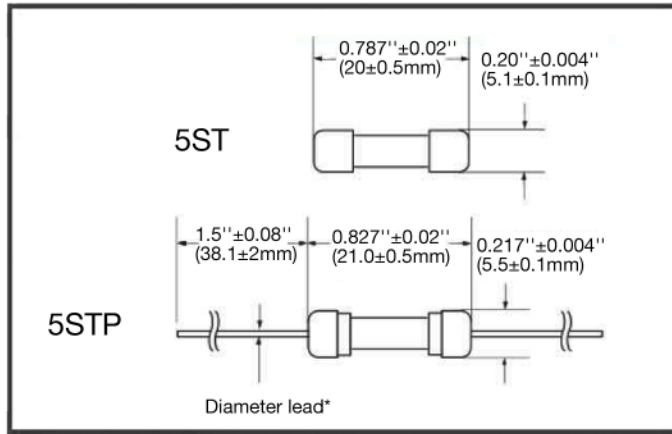
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### Fuse FGNO Explanation 06XX X [XXXX] X XX, [XXXX]=Ampere Rating

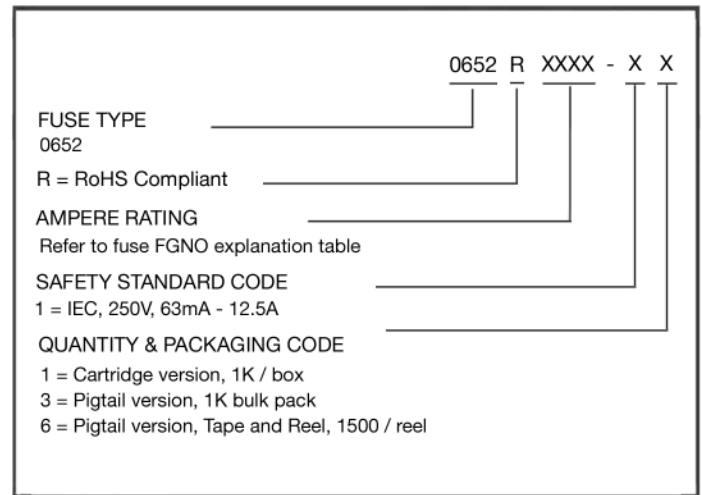
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]	Fraction	Decimal	Amps	Bel FGNO[XXXX]
1/32	0.032	32	0032		1.0	1	1000
1/25	.040	40	0040	1-1/4	1.25	1.25	1250
1/20	.050	50	0050	1-1/2	1.50	1.5	1500
1/16	.063	63	0063		1.60	1.6	1600
8/100	.080	80	0080		2.0	2	2000
1/10	.100	100	0100	2-1/4	2.25	2.25	2250
1/8	.125	125	0125	2-1/2	2.5	2.5	2500
15/100	.150	150	0150		3.0	3	3000
	.160	160	0160		3.15	3.15	3150
2/10	.200	200	0200	3-1/2	3.5	3.5	3500
1/4	.250	250	0250		4.0	4	4000
3/10	.300	300	0300		5.0	5	5000
	.315	315	0315		6.0	6	6000
3/8	.375	375	0375		6.3	6.3	6300
4/10	.400	400	0400		7.0	7	7000
1/2	.500	500	0500	7-1/2	7.5	7.5	7500
6/10	.600	600	0600		8.0	8	8000
	.630	630	0630			10	9100
7/10	.700	700	0700			12	9120
3/4	.750	750	0750			15	9150
8/10	.800	800	0800			20	9200
						25	9250
						30	9300

### Mechanical Dimensions



\*Ratings 6.3A and less have 0.032" diameter lead  
\*Ratings 8A and above have 0.040" diameter lead

### Ordering Information



### Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	11	N/A
Bulk ( Pigtail Type )	N/A	1000	13	N/A
Tape & Reel, 10 mm Pitch	EIA-296-F	1500	16	63

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