

# Type 5ST / 5STP

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

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

RoHS 2 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

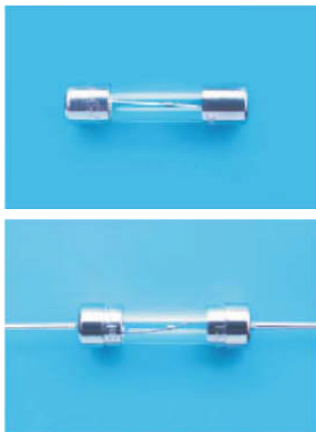
- Meet IEC standard 60127-2, sheet 3
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 2 compliant
- Halogen Free
- Lead Free

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE =   
 HALOGEN FREE = 



### 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 2 compliant)
	On Label :
	"bel", "5ST" or "5STP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "✓", "e" (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	Voltage Rating (V)	Ampere Range / Volt @ I.R. ability*
	15133392	63mA-10A /250V AC	63mA-6.3A/250V AC @35A or 10 In whichever is greater
	40000507		
	E20624		63mA-6.3A/250V AC @35A or 10 In whichever is greater
	LR39772		
	2003010207030316		
*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 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 (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				
												
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	0.32	Y	Y	Y	Y	Y
5ST(P) 80-R	80mA	13.2	1.68		0.015	0.036	0.49	Y	Y	Y	Y	Y
5ST(P) 100-R	100mA	11.0	1.63		0.03	0.06	0.51	Y	Y	Y	Y	Y
5ST(P) 125-R	125mA	7.02	1.29		0.05	0.11	0.51	Y	Y	Y	Y	Y
5ST(P) 160-R	160mA	4.10	0.92		0.08	0.19	0.61	Y	Y	Y	Y	Y
5ST(P) 200-R	200mA	2.60	0.77		0.15	0.33	0.56	Y	Y	Y	Y	Y
5ST(P) 250-R	250mA	1.70	0.64		0.26	0.58	0.56	Y	Y	Y	Y	Y
5ST(P) 315-R	315mA	1.30	0.57		0.46	1.01	0.75	Y	Y	Y	Y	Y
5ST(P) 400-R	400mA	0.72	0.41		0.81	1.76	0.76	Y	Y	Y	Y	Y
5ST(P) 500-R	500mA	0.57	0.47		1.4	3.1	0.76	Y	Y	Y	Y	Y
5ST(P) 630-R	630mA	0.18	0.14		0.9	1.5	0.24	Y	Y	Y	Y	Y
5ST(P) 800-R	800mA	0.14	0.14		1.6	2.5	0.30	Y	Y	Y	Y	Y
5ST(P) 1-R	1A	0.10	0.13		2.4	3.3	0.32	Y	Y	Y	Y	Y
5ST(P) 1.25-R	1.25A	0.052	0.08		4.1	5.5	0.33	Y	Y	Y	Y	Y
5ST(P) 1.6-R	1.6A	0.036	0.08		6.9	8.9	0.35	Y	Y	Y	Y	Y
5ST(P) 2-R	2A	0.028	0.08		12	15	0.45	Y	Y	Y	Y	Y
5ST(P) 2.5-R	2.5A	0.023	0.08		20	24	0.58	Y	Y	Y	Y	Y
5ST(P) 3.15-R	3.15A	0.017	0.08		33	39	0.76	Y	Y	Y	Y	Y
5ST(P) 4-R	4A	0.013	0.07		56	64	0.80	Y	Y	Y	Y	Y
5ST(P) 5-R	5A	0.0096	0.07		95	105	0.89	Y	Y	Y	Y	Y
5ST(P) 6.3-R	6.3A	0.0073	0.07		160	173	1.15	Y	Y	Y	Y	Y
5ST(P) 8-R	8A	0.0062	0.07		260	282	2.00	Y	Y			
5ST(P) 10-R	10A	0.0052	0.07		439	461	2.70	Y	Y			
5ST(P) 12.5-R	12.5A	0.0041	0.07		490	679	3.85					

Consult manufacturer for other ratings

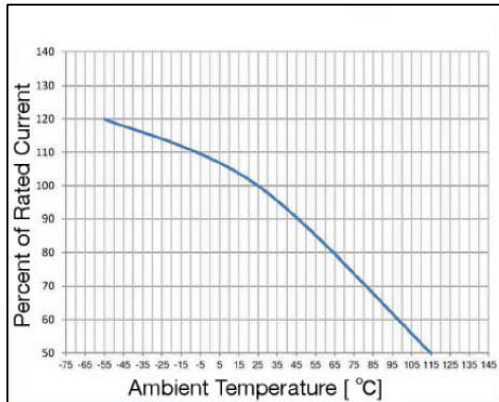


Specifications subject to change without notice

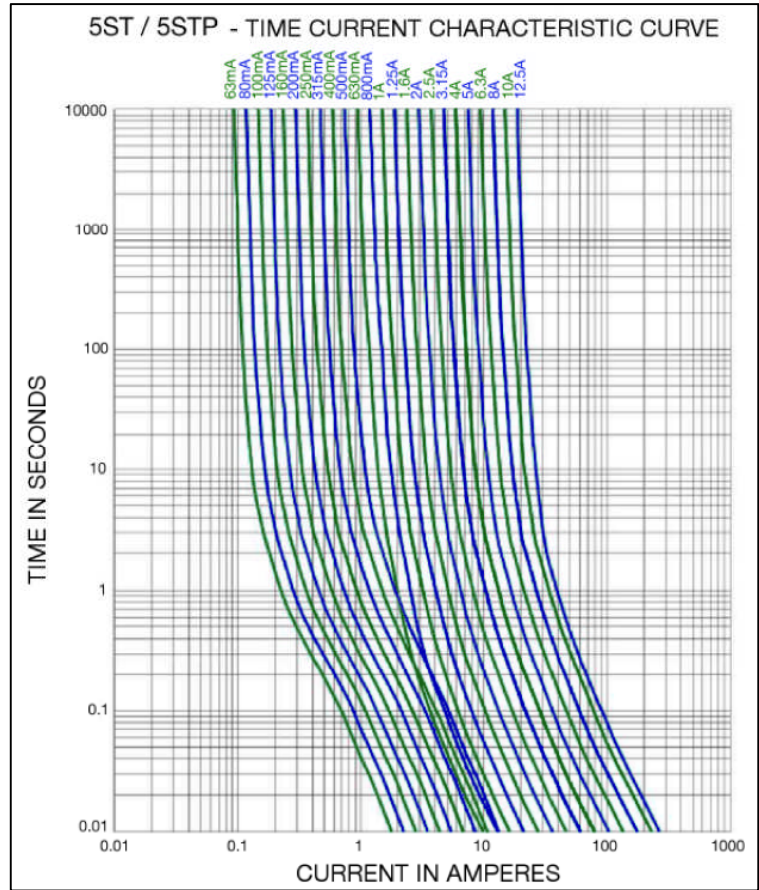
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## Temperature Derating Curve

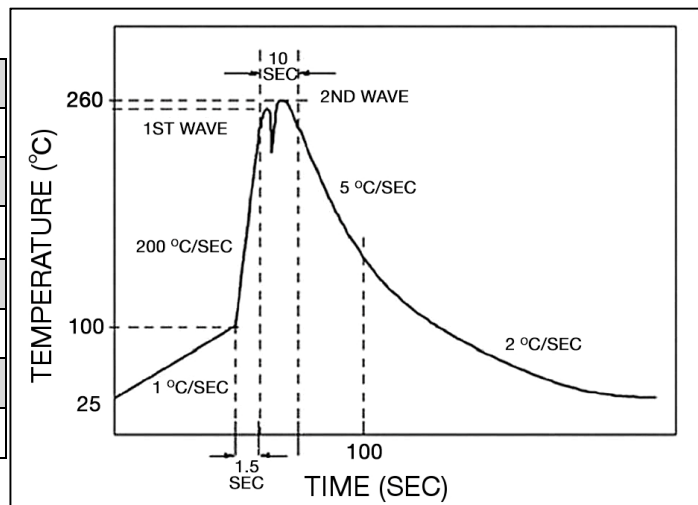


## Average Time Current Curve



## 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 T <sub>p</sub>	260°C
Time within +0°C / -5°C of actual peak temperature	10 seconds
Ramp-down rate	5°C / second max.



## Fuse FGNO Explanation

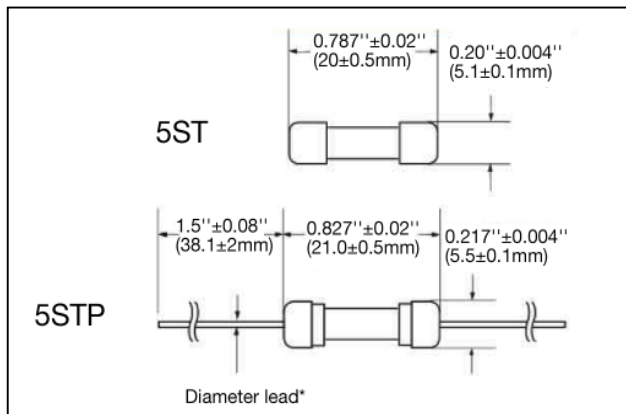
0652 R [XXXX] -XX

[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
	.315	315	0315
4/10	.400	400	0400
1/2	.500	500	0500
	.630	630	0630
8/10	.800	800	0800

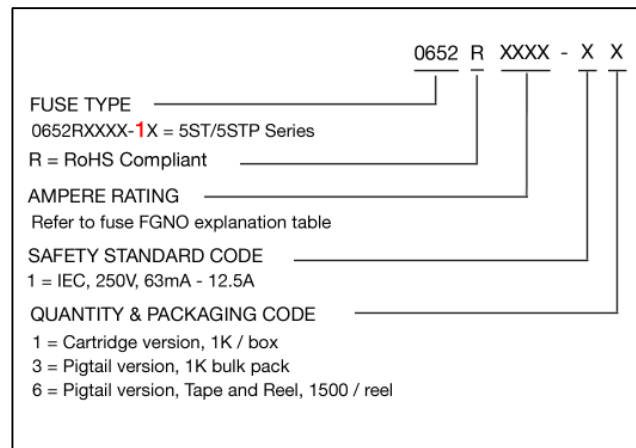
Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/4	1.25	1.25	1250
	1.60	1.6	1600
	2.0	2	2000
2-1/2	2.5	2.5	2500
	3.15	3.15	3150
	4.0	4	4000
	5.0	5	5000
	6.3	6.3	6300
	8.0	8	8000
		10	9100
		12.5	9125

## 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, 10mm Pitch	EIA-296-F	1500	16	63



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