

Type 5ST / 5STP

Time-lag Fuse Series (Low Breaking Capacity)

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

RoHS 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

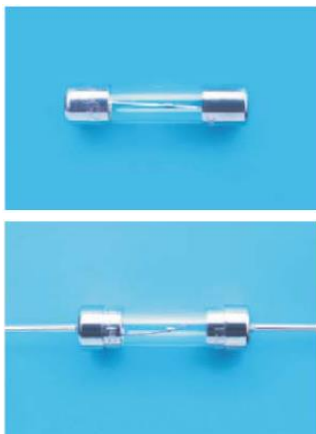
- Meet IEC standard 60127-2, sheet 3
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free

Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = 
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 compliant) |
| | On Label : |
| | "bel", "5ST" or "5STP", "T", "Current Rating", "L", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "✓", "RoHS", "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 | Ampere Rating/ Voltage Rating | Ampere Range / Volt @ I.R. ability* |
|---|---------------------------------------|-------------------------------|--|
|  | SE-S-2002330 | 63mA-10A /250V AC | 63mA-6.3A/250V AC @35A or 10 In whichever is greater |
|  | 40000507 | | |
|  | E20624 | | |
|  | LR39772 | | |
|  | Self-declaration No: 2020970207000129 | | |
| *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 I²T <10 mSec (A² Sec) | Melting I²T @ 10 In (A² 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

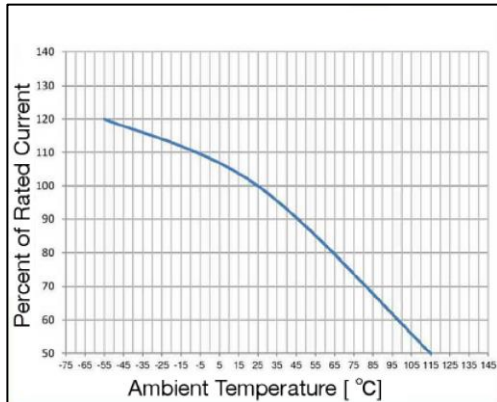


Specifications subject to change without notice

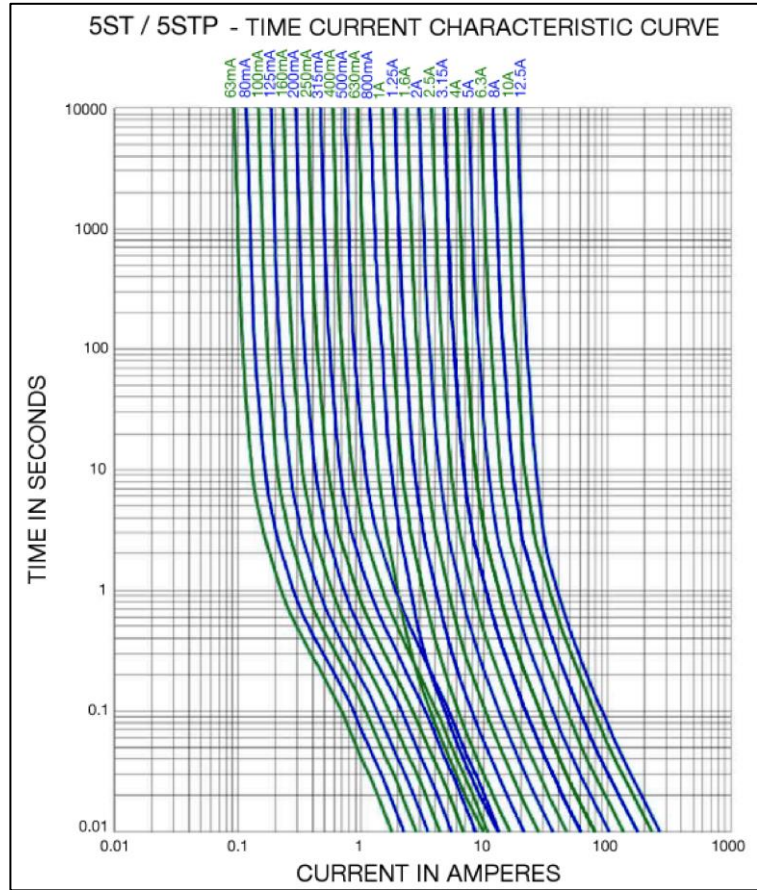
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Temperature Derating Curve

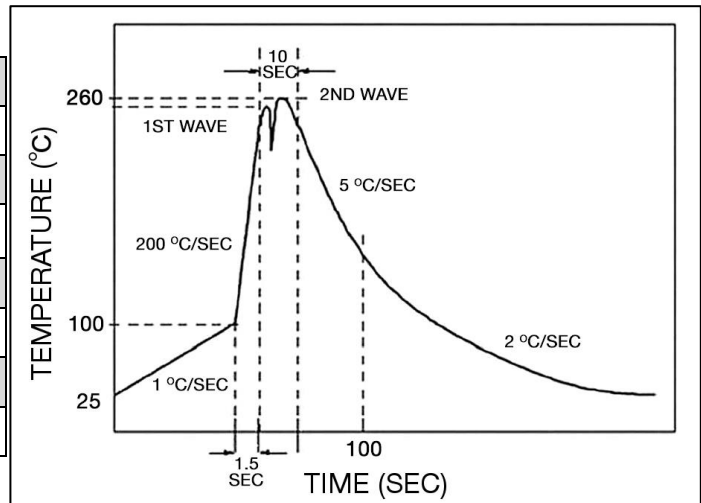


Average Time Current Curve



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_p | 260°C |
| Time within +0°C / -5°C of actual peak temperature | 10 seconds |
| Ramp-down rate | 5°C / second max. |



Fuse FGNO Explanation

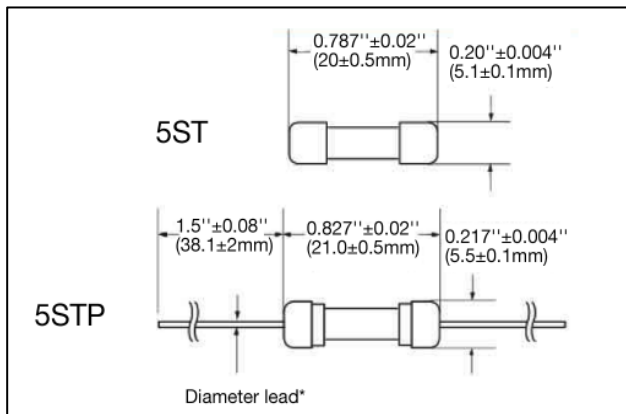
0652 R [XXXX] -XX

[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 |

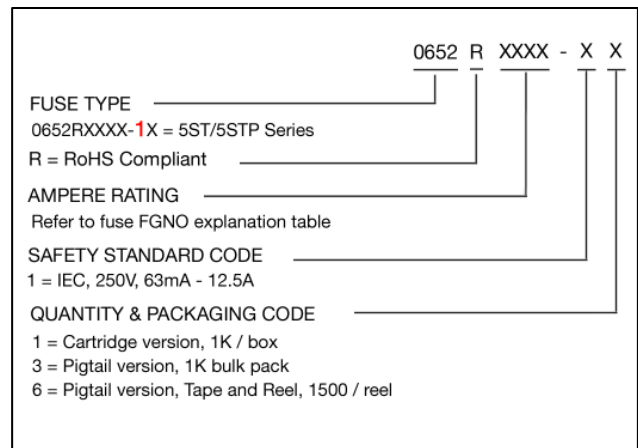
Mechanical Dimensions



*Ratings 6.3A and less have 0.032" ± 0.002" diameter lead;

*Ratings 8A and above have 0.039" ± 0.002" 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 | EIA-296-F | 1500 | 16 | 10mm Pitch and 63mm |



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