

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** 5STP 100-R  
**Manufacturer:** Bel Fuse Inc.  
**Package:** Bulk  
**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/bel-fuse-inc/5stp-100-r.html>

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## Contact Information

Email: [info@antrexco.com](mailto:info@antrexco.com)

WhatsApp: +86-186-8066-5326

Website: <https://antrexco.com>

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**Note:**

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

# Type 5ST / 5STP

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

HF Pb 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

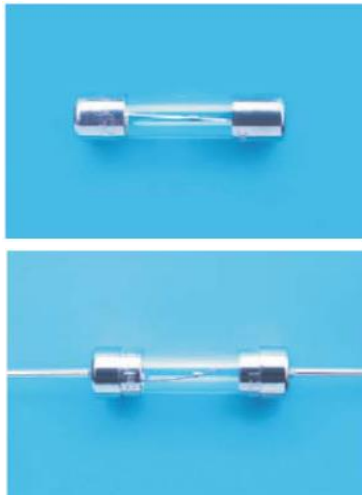
- Meet IEC standard 60127-2, sheet 3
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = Pb  
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 compliant)                                                                                                                      |
|           | On Label :                                                                                                                                                            |
|           | "bel", "5ST" or "5STP", "T", "Current Rating", "L", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "✓", "RoHS", "CE" (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                                                       | SE-S-2002330                          | 63mA-10A / 250V AC             | 63mA-6.3A/250V AC@35A or 10 In whichever is greater |
| UL                                                       | 40000507                              |                                |                                                     |
| UL                                                       | E20624                                |                                | 63mA-10A/250V AC@35A or 10 In whichever is greater  |
| UL                                                       | LR39772                               |                                | 63mA-6.3A/250V AC@35A or 10 In whichever is greater |
| CCC                                                      | Self-declaration No: 2020970207000129 |                                |                                                     |
| *I.R. = Interrupting Rating = Short Circuit Rating(Amps) |                                       |                                |                                                     |

# Type 5ST / 5STP

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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 (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

No replacement for the 63mA through 400mA

The replacement series is the 0652C/0652P

# Type 5ST / 5STP

## 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<br>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.                            |



# Type 5ST / 5STP

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## 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           |

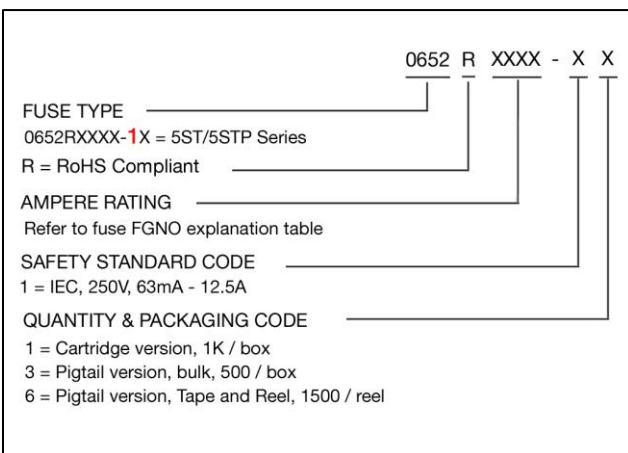
| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
|          | 1.0     | 1    | 1000           |
| 1-1/4    | 1.25    | 1.25 | 1250           |
|          | 1.60    | 1.6  | 1600           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 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                     | 500      | 13             | N/A                 |
| Tape & Reel         | EIA-296-F               | 1500     | 16             | 10mm Pitch and 63mm |