

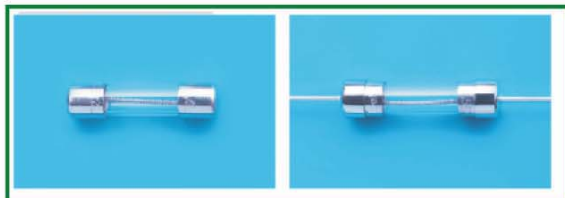
# Type 5VT / 5VTP

*Time-lag Fuse Series (High Surge-proof, Low Breaking Capacity)*

5 x 20mm Glass Tube  
RoHS 6 Compliant



5VT / 5VTP Series, 5 x 20mm Time-lag Fuse



## Description

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

## 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 |
| 1A to 6.3A    | 1      | 2    | 600    | 10  | 150     | 3   | 20   | 300 |       |     |
|               | hr.    | min. | ms     | sec | ms      | sec | ms   | ms  |       |     |

In clause 9.2, the test voltage for 5VTP ratings from 1A to 6.3A is 63VDC.

## Features

- Meet IEC standard 60127-2, Sheet 3
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS6 compliant
- Halogen Free
- Leadfree

## Applications

Provide individual protection for components or internal circuits.

- Power Supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = 

HALOGEN FREE = 

## Safety Agency Approvals

| SAFETY AGENCY                                                                       | SAFETY AGENCY CERTIFICATE NUMBER | AMPERE RANGE / VOLT @ I.R. ABILITY                     |
|-------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------|
|  | 800915                           | 1A - 6.3A / 250V AC @35A or 10 In whichever is greater |
|  | 40007745                         |                                                        |
|  | E20624                           |                                                        |
|  |                                  |                                                        |
|  | LR39772                          |                                                        |
|  | 2003010207030341                 |                                                        |

Specifications subject to change without notice

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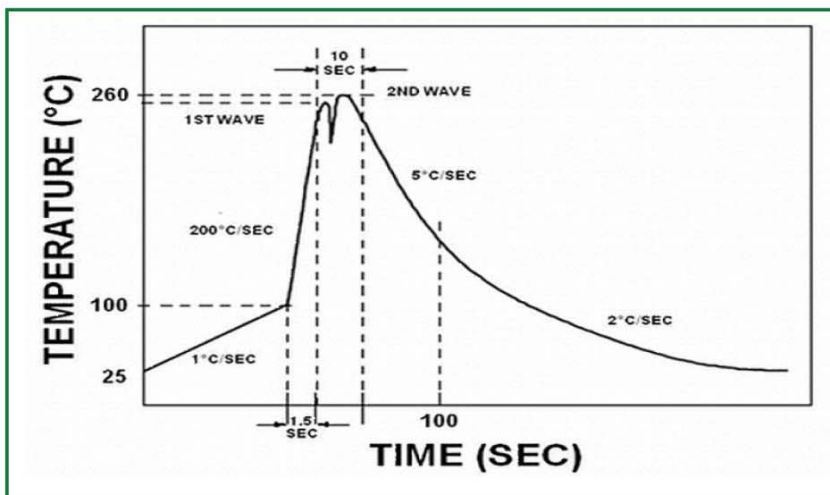
#### Electrical Specifications

| Catalog Number | Ampere Rating | Typical Cold Resistance (ohm) | Volt-drop @100% In (Volt) Max. | Voltage Rating (V) | Interrupting Rating                                | Melting I <sub>2</sub> T <10 m Sec (A <sup>2</sup> Sec) | Melting I <sub>2</sub> T @ 10 In (A <sup>2</sup> Sec) | Maximum Power Dissipation (W) | Agency Approvals |    |     |   |     |    |
|----------------|---------------|-------------------------------|--------------------------------|--------------------|----------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------|-------------------------------|------------------|----|-----|---|-----|----|
|                |               |                               |                                |                    |                                                    |                                                         |                                                       |                               | UL               | SE | CCC | S | DVE | CE |
| 5VT (P) 1-R    | 1A            | 0.111                         | 0.15                           | 250                | 1-6.3A/ 250V AC @35A or 10 In whichever is greater | 28                                                      | 29                                                    | 0.42                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 1.25-R | 1.25A         | 0.073                         | 0.13                           | 250                |                                                    | 42                                                      | 43                                                    | 0.42                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 1.6-R  | 1.6A          | 0.058                         | 0.13                           | 250                |                                                    | 62                                                      | 64                                                    | 0.51                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 2-R    | 2A            | 0.039                         | 0.12                           | 250                |                                                    | 92                                                      | 95                                                    | 0.61                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 2.5-R  | 2.5A          | 0.031                         | 0.12                           | 250                |                                                    | 137                                                     | 142                                                   | 0.74                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 3.15-R | 3.15A         | 0.023                         | 0.10                           | 250                |                                                    | 203                                                     | 211                                                   | 0.90                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 4-R    | 4A            | 0.017                         | 0.10                           | 250                |                                                    | 300                                                     | 313                                                   | 1.08                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 5-R    | 5A            | 0.012                         | 0.09                           | 250                |                                                    | 444                                                     | 465                                                   | 1.31                          | Y                | Y  | Y   | Y | Y   | Y  |
| 5VT (P) 6.3-R  | 6.3A          | 0.010                         | 0.09                           | 250                |                                                    | 658                                                     | 691                                                   | 1.58                          | Y                | Y  | Y   | Y | Y   | Y  |

Consult manufacturer for other ratings

#### 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.                            |



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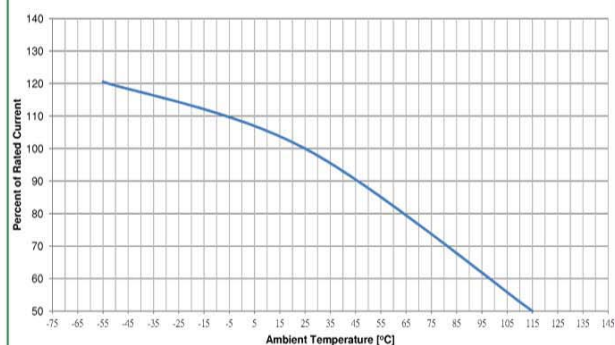
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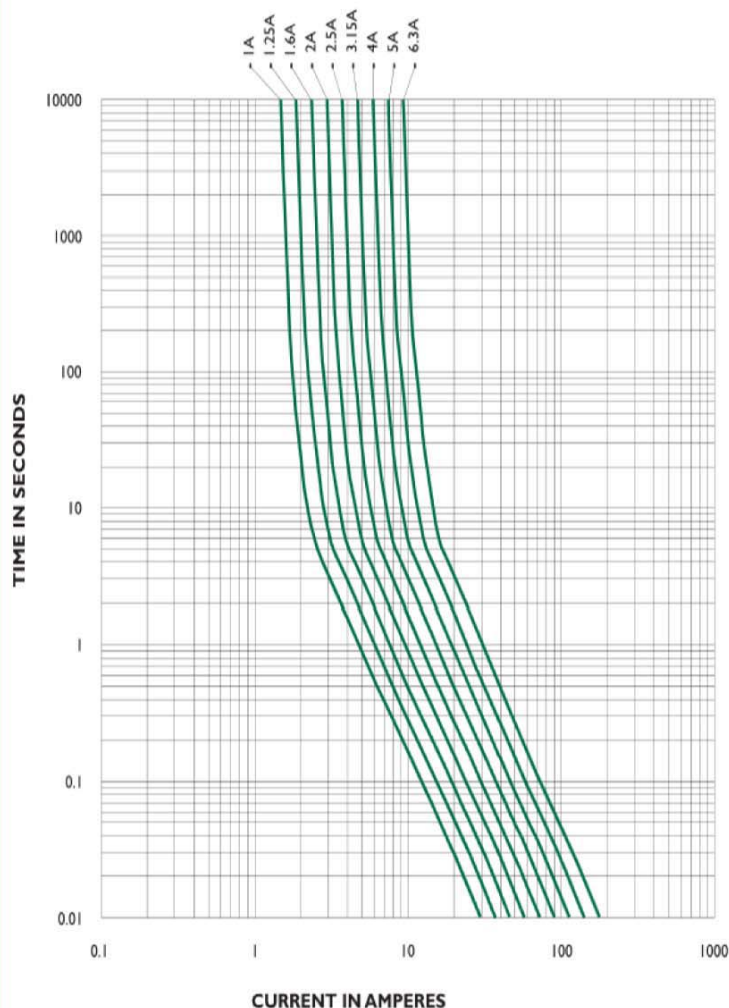
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Temperature Derating Curve



Average Time Current Curve

### 5VT / 5VTP - TIME CURRENT CHARACTERISTIC CURVE



### Environmental Specifications

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| Shock Resistance          | MIL-STD-202G, Method 213B, Test Condition I (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                                                                                      |

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## Physical Specifications

|                  |                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Materials</b> | Body : Glass                                                                                                                                        |
|                  | Cap : Nickel Plated Brass Caps                                                                                                                      |
|                  | Leads: Matte Tin Plated Copper                                                                                                                      |
| <b>Marking</b>   | On Fuse:                                                                                                                                            |
|                  | "bel", "T", "Current Rating", "L", "250V",                                                                                                          |
|                  | "Appropriate Safety Logos", "✓" (RoHS 6 compliant)                                                                                                  |
|                  | On label:                                                                                                                                           |
|                  | "bel", "5VT", or "5VTP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "✓", "e" (China RoHS compliant). |

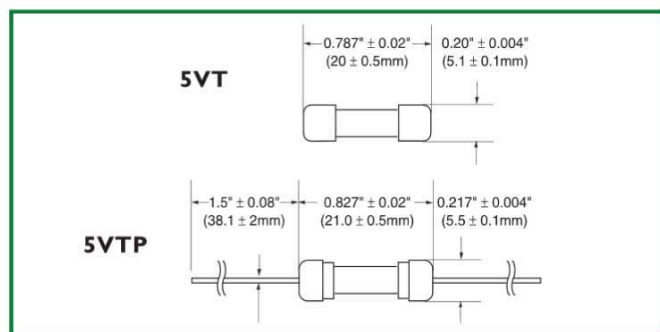
## Fuse FGNO Explanation

06XX-XXXX-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



## Ordering Information

|                                      |                                                                                                                        |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>FUSE TYPE</b>                     | 0654                                                                                                                   |
| <b>R</b>                             | R = RoHS Compliant                                                                                                     |
| <b>AMPERE RATING</b>                 | Refer to fuse FGNO explanation table                                                                                   |
| <b>SAFETY STANDARD CODE</b>          | 1 = IEC, 250V, 1A - 6.3A                                                                                               |
| <b>QUANTITY &amp; PACKAGING CODE</b> | 1 = Cartridge version, 1K /box<br>3 = Pigtail Version, 1K bulk pack.<br>6 = Pigtail version, Tape and Reel, 1500/reel. |

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

Specifications subject to change without notice

## 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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