

EOL – Last Buy Date is Jun 30, 2020  
No replacements for these Series

## Type 5MT / 5MTP Medium Blow Fuse Series

HF Pb 5MT/5MTP Series, 5x20mm Glass Tube Medium Blow Fuse

RoHS 2 Compliant

### Description

5x20mm Medium Blow, glass tube body cartridge fuse designed, approved and complied with UL and CSA standard 248-14.

### Features

- Meet UL and CSA standard 248-14
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 2 compliant
- Halogen Free
- Lead Free

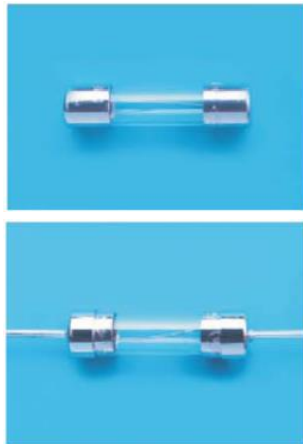
### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = Pb

HALOGEN FREE = HF



### Physical Specifications

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| Materials | Body : Glass                                                                       |
|           | Cap: Nickel Plated Brass Caps                                                      |
|           | Leads: Matte Tin Plated Copper                                                     |
| Marking   | On Fuse :                                                                          |
|           | "bel", "5MT", "Current Rating", "Voltage Rating",                                  |
|           | "Appropriate Safety Logos", "✓" ( RoHS 2 compliant)                                |
|           | On Label :                                                                         |
|           | "bel", "5MT" or "5MTP", "Current Rating", "Voltage Rating", "Interrupting Rating", |
|           | "Appropriate Safety Logos" and "✓", "RoHS", "E" (China RoHS compliant).            |

### Electrical Characteristics (UL/CSA STD,248-14) Safety Agency Approvals

| Testing Current | Blow Time |         |
|-----------------|-----------|---------|
|                 | Minimum   | Maximum |
| 100%            | 4 Hrs.    | N/A     |
| 135%            | N/A       | 1 Hr.   |
| 200%            | N/A       | 15 sec  |
| 1000%           | 10 mSec   | N/A     |

| Safety Agency | Safety Agency Certificate | Voltage Rating (V) | Ampere Range / Volt @ I.R. ability* |
|---------------|---------------------------|--------------------|-------------------------------------|
| UL US         | E20624                    | 100mA-3A/250V AC   | 100mA-800mA/250V AC@35A             |
| SP            | LR39772                   |                    | 1A-3A/250V AC@100A                  |
| PSE           | JET1037-31003-1010        | 3.15A-7A/125V AC   | 100mA-5A/125V AC@10,000A            |
|               | JET1037-31003-1011        |                    | 1A-5A/125V AC@500A                  |
|               | JET1037-31003-1007        |                    | >5A-15A/125V AC@300A                |

\*I.R.= Interrupting Rating = Short Circuit Rating(Amps)

## Type 5MT / 5MTP

## Environmental Specifications

|                           |                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------|
| Shock Resistance          | MIL-STD-202G, Method 213B, Test Condition 1<br>(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 A<br>(After Opening) 10,000 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

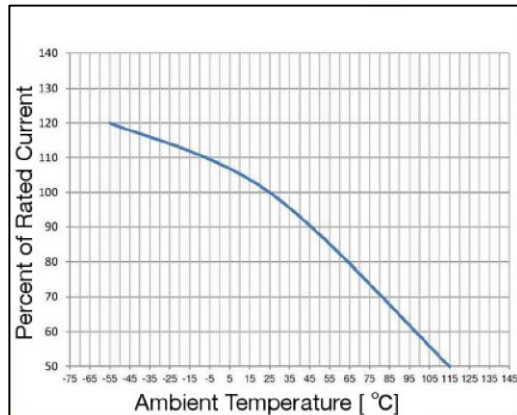
| Catalog Number | Ampere Rating | Typical Cold Resistance (ohms) | Volt-drop @100%In (Volt) max. | Voltage and Interrupting Ratings                                                        | Melting I <sup>2</sup> T <10 mSec (A <sup>2</sup> Sec) | Melting I <sup>2</sup> T @10 In (A <sup>2</sup> Sec) | Maximum Power Dissipation (W) | Agency Approvals                                                                    |                                                                                     |                                                                                     |
|----------------|---------------|--------------------------------|-------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                |               |                                |                               |                                                                                         |                                                        |                                                      |                               |  |  |  |
| 5MT(P) 100-R   | 100mA         | 11.9                           | 2.02                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.02                                                   | 0.04                                                 | 0.30                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 125-R   | 125mA         | 7.92                           | 1.77                          |                                                                                         | 0.04                                                   | 0.07                                                 | 0.32                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 160-R   | 160mA         | 4.82                           | 1.33                          |                                                                                         | 0.06                                                   | 0.11                                                 | 0.34                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 200-R   | 200mA         | 3.11                           | 1.13                          |                                                                                         | 0.11                                                   | 0.18                                                 | 0.36                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 250-R   | 250mA         | 2.12                           | 0.94                          |                                                                                         | 0.18                                                   | 0.30                                                 | 0.38                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 300-R   | 300mA         | 1.51                           | 0.80                          |                                                                                         | 0.31                                                   | 0.50                                                 | 0.37                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 375-R   | 375mA         | 1.07                           | 0.73                          |                                                                                         | 0.47                                                   | 0.75                                                 | 0.40                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 500-R   | 500mA         | 0.61                           | 0.57                          |                                                                                         | 0.88                                                   | 1.40                                                 | 0.43                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 600-R   | 600mA         | 0.430                          | 0.44                          |                                                                                         | 1.5                                                    | 2.3                                                  | 0.45                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 700-R   | 700mA         | 0.340                          | 0.42                          |                                                                                         | 2.2                                                    | 2.5                                                  | 0.48                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 750-R   | 750mA         | 0.290                          | 0.39                          |                                                                                         | 2.3                                                    | 3.5                                                  | 0.49                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 800-R   | 800mA         | 0.261                          | 0.36                          |                                                                                         | 3.8                                                    | 4.2                                                  | 0.49                          | Y                                                                                   | Y                                                                                   |                                                                                     |
| 5MT(P) 1-R     | 1A            | 0.183                          | 0.33                          |                                                                                         | 4.2                                                    | 6.4                                                  | 0.49                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 1.25-R  | 1.25A         | 0.124                          | 0.28                          |                                                                                         | 7.2                                                    | 11                                                   | 0.52                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 1.6-R   | 1.6A          | 0.081                          | 0.23                          |                                                                                         | 12                                                     | 18                                                   | 0.55                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 2-R     | 2A            | 0.061                          | 0.22                          |                                                                                         | 20                                                     | 29                                                   | 0.59                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 2.5-R   | 2.5A          | 0.043                          | 0.19                          |                                                                                         | 35                                                     | 49                                                   | 0.65                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 3-R     | 3A            | 0.036                          | 0.19                          |                                                                                         | 58                                                     | 82                                                   | 0.74                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 3.5-R   | 3.5A          | 0.029                          | 0.18                          |                                                                                         | 76                                                     | 105                                                  | 0.84                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 4-R     | 4A            | 0.025                          | 0.18                          |                                                                                         | 99                                                     | 136                                                  | 0.91                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 5-R     | 5A            | 0.019                          | 0.17                          |                                                                                         | 167                                                    | 226                                                  | 1.10                          | Y                                                                                   | Y                                                                                   | Y                                                                                   |
| 5MT(P) 6-R     | 6A            | 0.014                          | 0.16                          |                                                                                         | 315                                                    | 428                                                  | 1.30                          |                                                                                     |                                                                                     | Y                                                                                   |
| 5MT(P) 7-R     | 7A            | 0.012                          | 0.15                          |                                                                                         | 750                                                    | 1059                                                 | 2.10                          |                                                                                     |                                                                                     | Y                                                                                   |

Consult manufacturer for other ratings

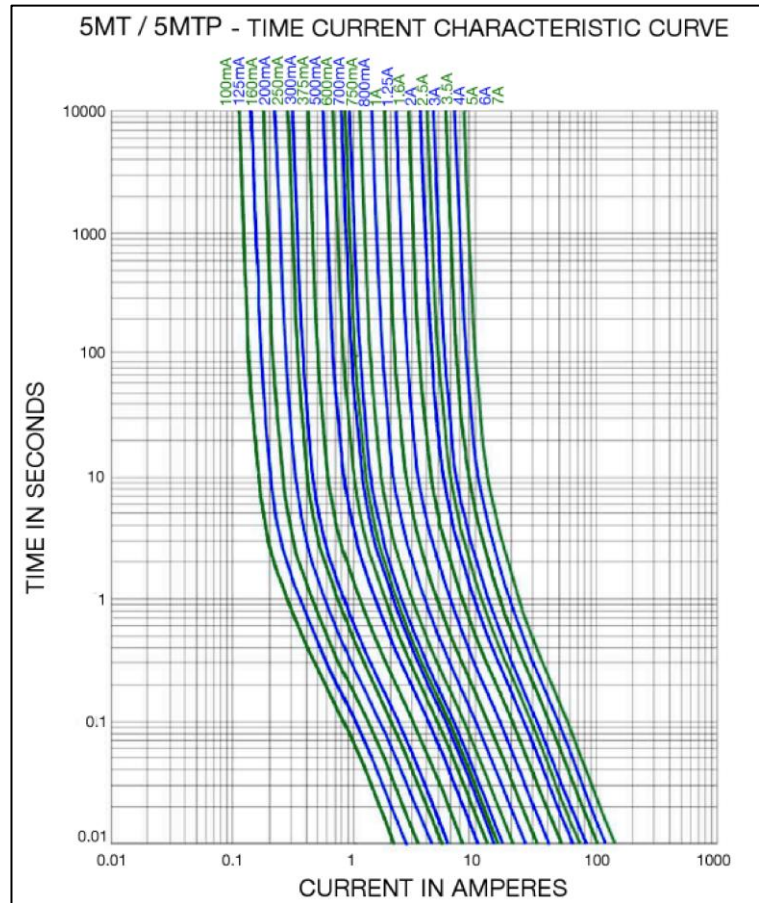
# Type 5MT / 5MTP

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## Temperature Derating Curve

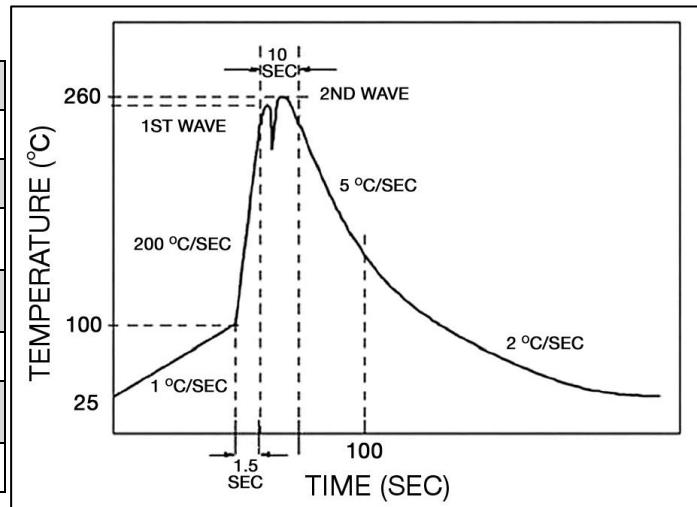


## Average Time Current Curve



## 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<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 5MT / 5MTP

## Fuse FGNO Explanation

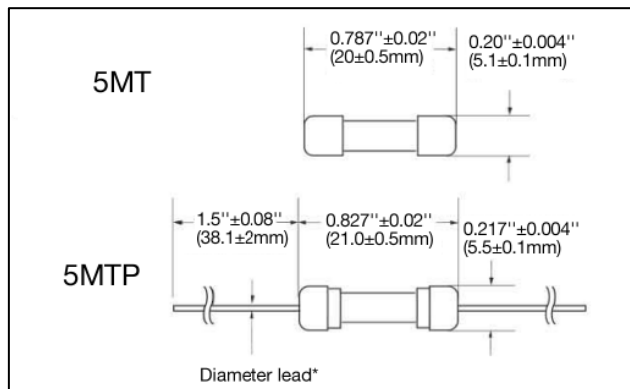
0652 R [XXXX] -XX

[XXXX]=Ampere Rating; XX=See Ordering Information as below

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 1/10     | 0.100   | 100       | 0100           |
| 1/8      | .125    | 125       | 0125           |
|          | .160    | 160       | 0160           |
| 2/10     | .200    | 200       | 0200           |
| 1/4      | .250    | 250       | 0250           |
| 3/10     | .300    | 300       | 0300           |
| 3/8      | .375    | 375       | 0375           |
| 1/2      | .500    | 500       | 0500           |
| 6/10     | .600    | 600       | 0600           |
| 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           |
|          | 1.60    | 1.6  | 1600           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 2.5  | 2500           |
|          | 3.0     | 3    | 3000           |
| 3-1/2    | 3.5     | 3.5  | 3500           |
|          | 4.0     | 4    | 4000           |
|          | 5.0     | 5    | 5000           |
|          | 6.0     | 6    | 6000           |
|          | 7.0     | 7    | 7000           |

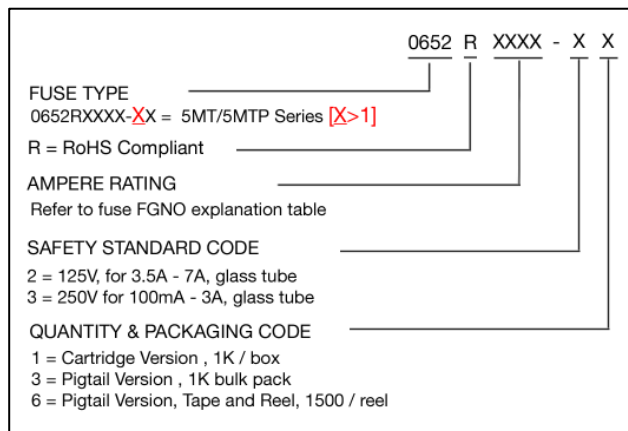
## Mechanical Dimensions



\*Ratings 5A and less have 0.032" ± 0.002" diameter lead;

\*Ratings 6A 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     | 33 / 21        | N/A                 |
| Bulk (Pigtail Type) | N/A                     | 1000     | 33 / 23        | N/A                 |
| Tape & Reel         | EIA-296-F               | 1500     | 36 / 26        | 10mm Pitch and 63mm |

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