

80mA-300mA EOL – Last Buy Date is Jun 30, 2020  
 No replacements for these ratings

# Type 5MF / 5MFP

## Fast Blow Fuse Series

**HF** **Pb** 5MF/5MFP Series, 5x20mm Glass Tube Fast Blow Fuse

RoHS 2 Compliant

### Description

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

### Features

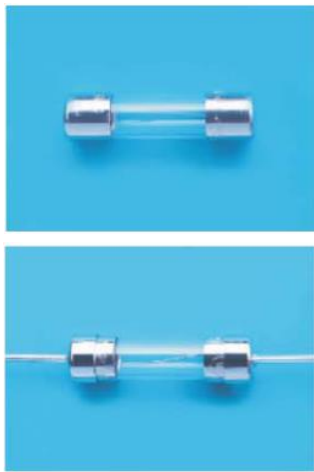
- Meet UL and CSA standard 248-14
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 2 compliant
- Halogen Free
- Lead Free

### 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", "5MF", "Current Rating", "Voltage Rating",<br>"Appropriate Safety Logos", "✓" ( RoHS 2 compliant )   |
|           | On Label :  |
|           | "bel", "5MF" or "5MFP", "Current Rating", "Voltage Rating", "Interrupting Rating",<br>"Appropriate Safety Logos" and "✓", "E" (China RoHS compliant). |

### Electrical Characteristics (UL/CSA STD.248-14)

| Testing Current | Blow Time |         |
|-----------------|-----------|---------|
|                 | Minimum   | Maximum |
| 100%            | 4 Hrs.    | N/A     |
| 135%            | N/A       | 1 Hr.   |
| 200%            | N/A       | 5 sec   |

### Safety Agency Approvals

| Safety Agency | Safety Agency Certificate | Voltage Rating (V) | Ampere Range / Volt @ I.R. ability*              |
|---------------|---------------------------|--------------------|--|
| <b>UL US</b>  | E20624                    | 80mA-3A/250V AC    | 80mA-3A/250V AC@200A<br>80mA-8A/125V AC @10,000A |
| <b>SF</b>     | LR39772                   |                    |  |
| <b>PS E</b>   | JET1037-31003-1010        | 3.15A-8A/125V AC   | 1A-5A/125V AC@500A<br>>5A-15A/125V AC@300A       |
|               | JET1037-31003-1011        |                    |  |
|               | JET1037-31003-1007        |                    |  |

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

# Type 5MF / 5MFP

## 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 A (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 I²T <10 mSec (A² Sec) | Melting I²T @10 In (A² Sec) | Maximum Power Dissipation (W) | Agency Approvals |    |    |
|----------------|---------------|--------------------------------|-------------------------------|---|-------------------------------|-----------------------------|-------------------------------|------------------|----|----|
|                |               |                                |                               |   |                               |                             |                               | UL US            | SP | PF |
| 5MF(P) 80-R    | 80mA          | 42.5                           | 5.10                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.0004                        | 0.0004                      | 0.32                          | Y                | Y  |    |
| 5MF(P) 100-R   | 100mA         | 6.95                           | 2.63                          |   | 0.0009                        | 0.0008                      | 0.35                          | Y                | Y  |    |
| 5MF(P) 125-R   | 125mA         | 6.92                           | 3.65                          |   | 0.0017                        | 0.0015                      | 0.60                          | Y                | Y  |    |
| 5MF(P) 200-R   | 200mA         | 2.97                           | 2.58                          |   | 0.007                         | 0.006                       | 0.72                          | Y                | Y  |    |
| 5MF(P) 250-R   | 250mA         | 1.47                           | 0.99                          |   | 0.016                         | 0.014                       | 0.25                          | Y                | Y  |    |
| 5MF(P) 300-R   | 300mA         | 1.18                           | 1.07                          |   | 0.020                         | 0.019                       | 0.39                          | Y                | Y  |    |
| 5MF(P) 350-R   | 350mA         | 0.92                           | 1.06                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.038                         | 0.032                       | 0.36                          | Y                | Y  |    |
| 5MF(P) 400-R   | 400mA         | 0.65                           | 0.74                          |   | 0.080                         | 0.084                       | 0.20                          | Y                | Y  |    |
| 5MF(P) 500-R   | 500mA         | 0.49                           | 0.78                          |   | 0.122                         | 0.118                       | 0.33                          | Y                | Y  |    |
| 5MF(P) 600-R   | 600mA         | 0.394                          | 0.77                          |   | 0.195                         | 0.195                       | 0.44                          | Y                | Y  |    |
| 5MF(P) 700-R   | 700mA         | 0.305                          | 0.73                          |   | 0.265                         | 0.267                       | 0.65                          | Y                | Y  |    |
| 5MF(P) 800-R   | 800mA         | 0.243                          | 0.61                          |   | 0.40                          | 0.40                        | 0.54                          | Y                | Y  |    |
| 5MF(P) 1-R     | 1A            | 0.118                          | 0.22                          |   | 0.88                          | 0.85                        | 0.26                          | Y                | Y  | Y  |
| 5MF(P) 1.25-R  | 1.25A         | 0.085                          | 0.21                          |   | 1.5                           | 1.5                         | 0.31                          | Y                | Y  | Y  |
| 5MF(P) 1.5-R   | 1.5A          | 0.067                          | 0.17                          |   | 2.6                           | 2.6                         | 0.36                          | Y                | Y  | Y  |
| 5MF(P) 2-R     | 2A            | 0.046                          | 0.16                          |   | 4.4                           | 4.5                         | 0.44                          | Y                | Y  | Y  |
| 5MF(P) 2.5-R   | 2.5A          | 0.037                          | 0.16                          |   | 7.6                           | 7.8                         | 0.52                          | Y                | Y  | Y  |
| 5MF(P) 3-R     | 3A            | 0.030                          | 0.17                          |   | 13                            | 14                          | 0.59                          | Y                | Y  | Y  |
| 5MF(P) 3.5-R   | 3.5A          | 0.025                          | 0.15                          |   | 17                            | 18                          | 0.65                          | Y                | Y  | Y  |
| 5MF(P) 4-R     | 4A            | 0.019                          | 0.14                          |   | 22                            | 24                          | 0.72                          | Y                | Y  | Y  |
| 5MF(P) 5-R     | 5A            | 0.016                          | 0.15                          |   | 38                            | 41                          | 0.84                          | Y                | Y  | Y  |
| 5MF(P) 6-R     | 6A            | 0.012                          | 0.13                          |   | 65                            | 72                          | 0.96                          | Y                | Y  | Y  |
| 5MF(P) 7-R     | 7A            | 0.011                          | 0.13                          |   | 88                            | 97                          | 1.10                          | Y                | Y  | Y  |
| 5MF(P) 8-R     | 8A            | 0.009                          | 0.13                          |   | 113                           | 126                         | 1.23                          | Y                | Y  | Y  |

Consult manufacturer for other ratings

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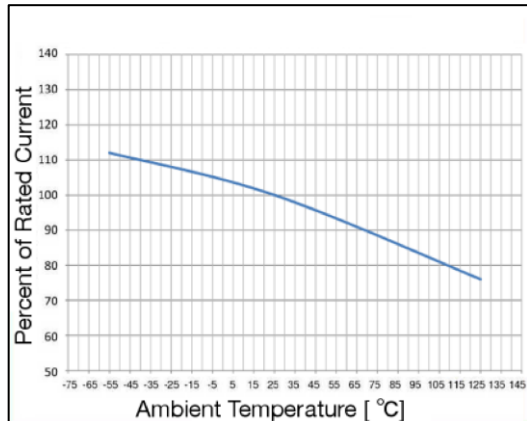
Specifications subject to change without notice

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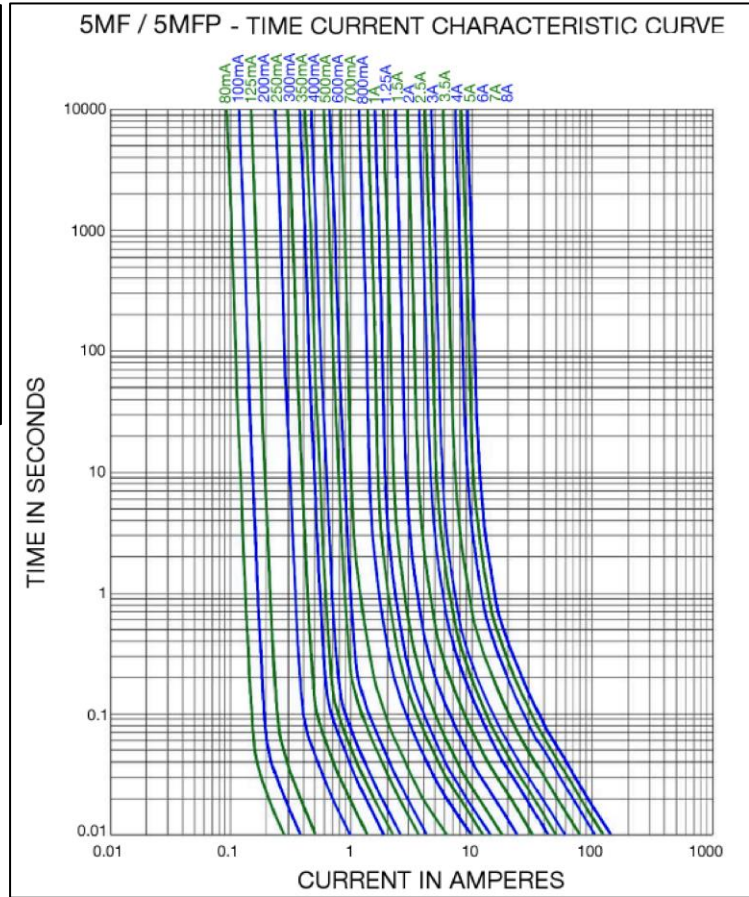
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[belfuse.com/circuit-protection](http://belfuse.com/circuit-protection)

# Type 5MF / 5MFP

## Temperature Derating Curve

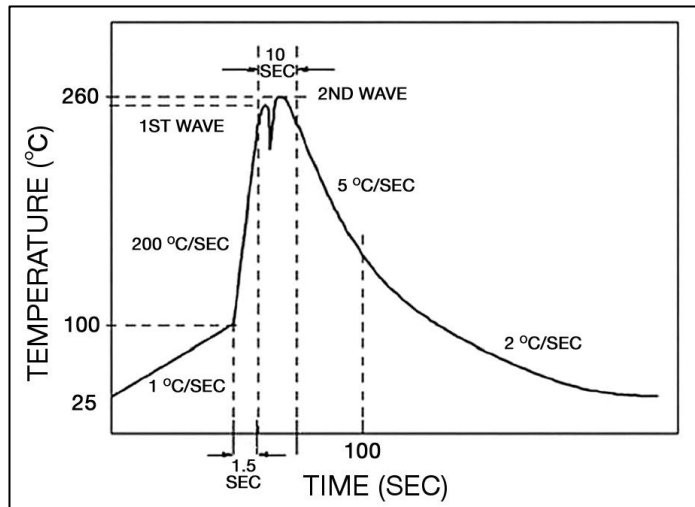


## Average Time Current Curve



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



# Type 5MF / 5MFP

## Fuse FGNO Explanation

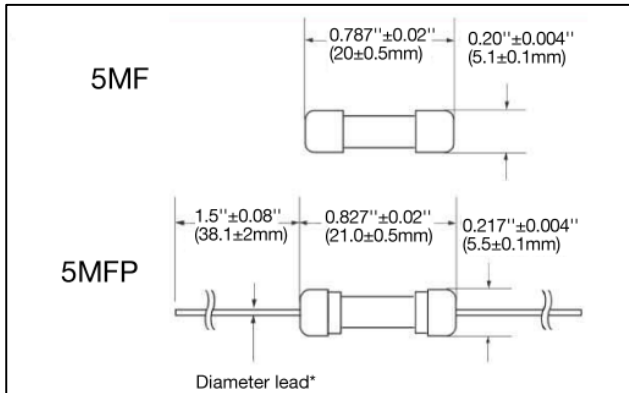
0651 R [XXXX] -XX

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

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 8/100    | 0.080   | 80        | 0080           |
| 1/10     | .100    | 100       | 0100           |
| 1/8      | .125    | 125       | 0125           |
| 2/10     | .200    | 200       | 0200           |
| 1/4      | .250    | 250       | 0250           |
| 3/10     | .300    | 300       | 0300           |
|          | .350    | 350       | 0350           |
| 4/10     | .400    | 400       | 0400           |
| 1/2      | .500    | 500       | 0500           |
| 6/10     | .600    | 600       | 0600           |
| 7/10     | .700    | 700       | 0700           |
| 8/10     | .800    | 800       | 0800           |

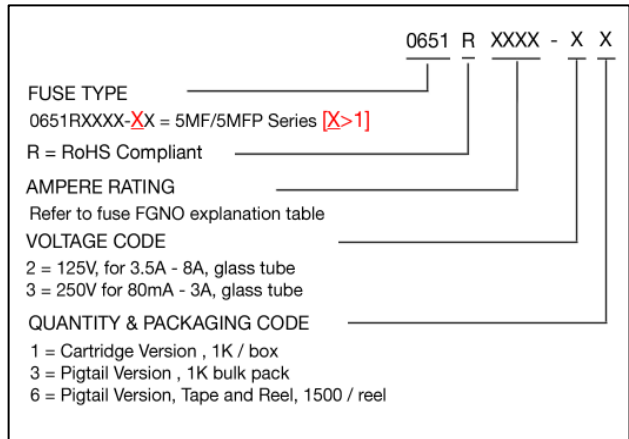
| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
|          | 1.0     | 1    | 1000           |
| 1-1/4    | 1.25    | 1.25 | 1250           |
| 1-1/2    | 1.50    | 1.5  | 1500           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 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           |
|          | 8.0     | 8    | 8000           |

## 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     | 31 / 21        | N/A                 |
| Bulk (Pigtail Type) | N/A                     | 1000     | 33 / 23        | N/A                 |
| Tape & Reel         | EIA-296-F               | 1500     | 73 / 26        | 10mm Pitch and 63mm |

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