

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

|                      |                           |
|----------------------|---------------------------|
| <b>Part Number:</b>  | 5MF 80-R                  |
| <b>Manufacturer:</b> | Bel Fuse Inc.             |
| <b>Package:</b>      | Bulk                      |
| <b>Availability:</b> | Please confirm with sales |

#### Product Page:

<https://antrexco.com/product/details/bel-fuse-inc/5mf-80-r.html>

#### Request a Quote:

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### Contact Information

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Website: <https://antrexco.com>

### Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

#### Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

## Type 5MF / 5MFP

### Fast Blow Fuse Series

HF P6 5MF/5MFP Series, 5x20mm Glass Tube Fast Blow Fuse

RoHS Compliant

#### Description

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

#### Features

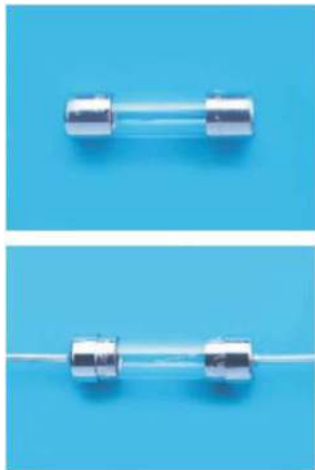
- Meet UL and CSA standard 248-14
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free

#### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = P6  
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 compliant )                                                |
|           | On Label :                                                                                                                                             |
|           | "bel", "5MF" or "5MFP", "Current Rating", "Voltage Rating", "Interrupting Rating",<br>"Appropriate Safety Logos" and "✓", "P6" (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 | Ampere Rating/<br>Voltage Rating | Ampere Range / Volt<br>@ I.R. ability*            |
|---------------|---------------------------|----------------------------------|---------------------------------------------------|
| UL            | E20624                    | 400mA-3A/250V<br>AC              | 400mA-3A/250V AC@200A<br>400mA-8A/125V AC@10,000A |
| CSA           | LR39772                   | 3.15A-8A/125V<br>AC              |                                                   |

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

# Type 5MF / 5MFP

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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 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 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                                                                    |                                                                                     |
|----------------|---------------|--------------------------------|-------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                |               |                                |                               |                                                                                         |                                                        |                                                      |                               |  |  |
| 5MF(P) 400-R   | 400mA         | 0.65                           | 0.74                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 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                                                                                   |
| 5MF(P) 1.25-R  | 1.25A         | 0.085                          | 0.21                          |                                                                                         | 1.5                                                    | 1.5                                                  | 0.31                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 1.5-R   | 1.5A          | 0.067                          | 0.17                          |                                                                                         | 2.6                                                    | 2.6                                                  | 0.36                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 2-R     | 2A            | 0.046                          | 0.16                          |                                                                                         | 4.4                                                    | 4.5                                                  | 0.44                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 2.5-R   | 2.5A          | 0.037                          | 0.16                          |                                                                                         | 7.6                                                    | 7.8                                                  | 0.52                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 3-R     | 3A            | 0.030                          | 0.17                          |                                                                                         | 13                                                     | 14                                                   | 0.59                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 3.5-R   | 3.5A          | 0.025                          | 0.15                          |                                                                                         | 17                                                     | 18                                                   | 0.65                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 4-R     | 4A            | 0.019                          | 0.14                          |                                                                                         | 22                                                     | 24                                                   | 0.72                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 5-R     | 5A            | 0.016                          | 0.15                          |                                                                                         | 38                                                     | 41                                                   | 0.84                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 6-R     | 6A            | 0.012                          | 0.13                          |                                                                                         | 65                                                     | 72                                                   | 0.96                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 7-R     | 7A            | 0.011                          | 0.13                          |                                                                                         | 88                                                     | 97                                                   | 1.10                          | Y                                                                                   | Y                                                                                   |
| 5MF(P) 8-R     | 8A            | 0.009                          | 0.13                          |                                                                                         | 113                                                    | 126                                                  | 1.23                          | Y                                                                                   | Y                                                                                   |

Consult manufacturer for other ratings



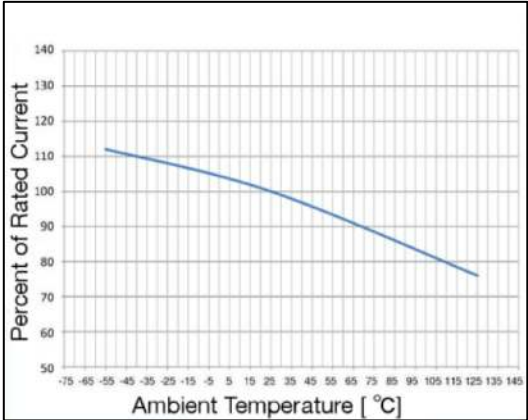
Specifications subject to change without notice

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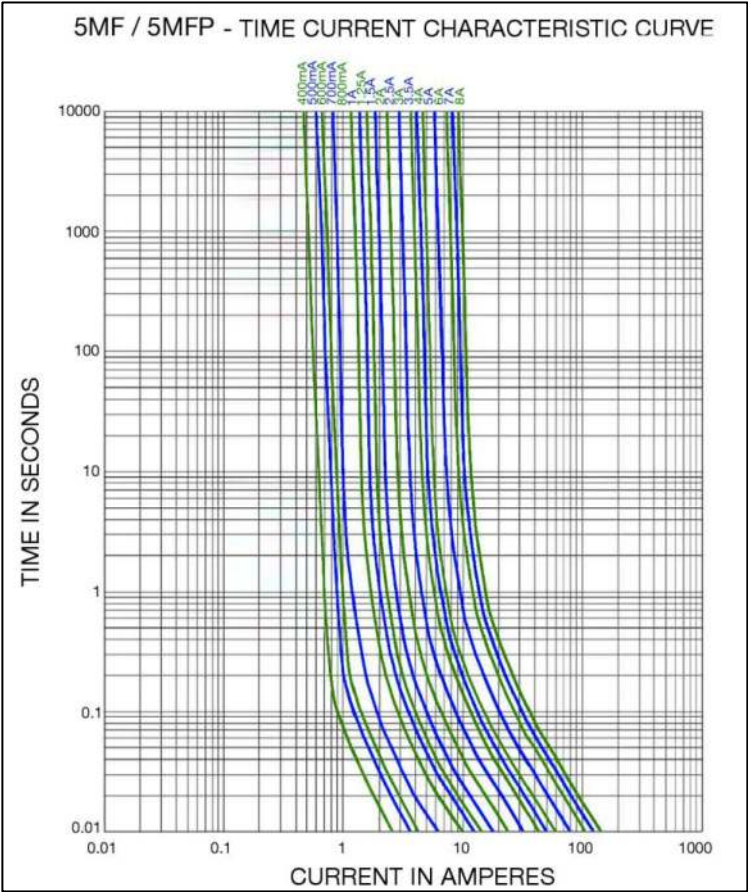
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Bel.US.CS@belf.com  
[belfuse.com/circuit-protection](http://belfuse.com/circuit-protection)

# Type 5MF / 5MFP

Temperature Derating Curve

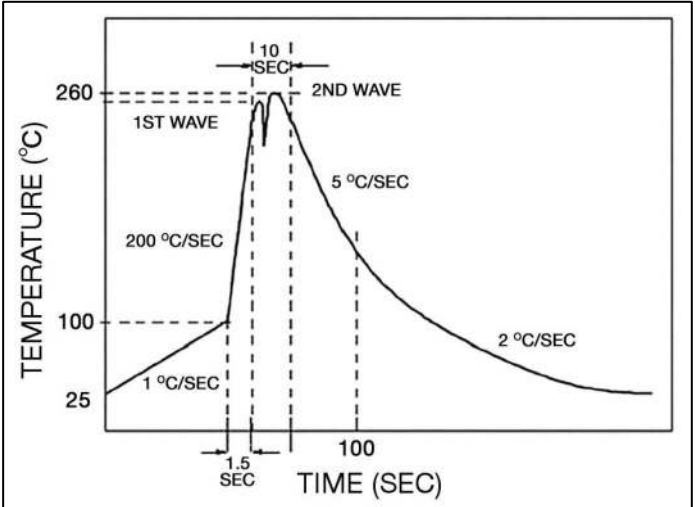


Average Time Current Curve



## 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

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## Fuse FGNO Explanation

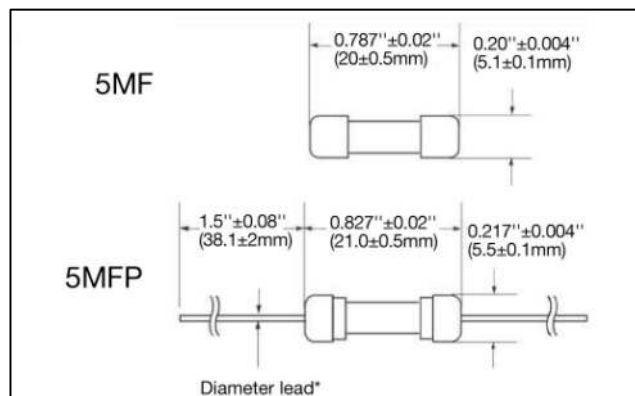
0651 R [XXXX] -XX

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

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 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           |

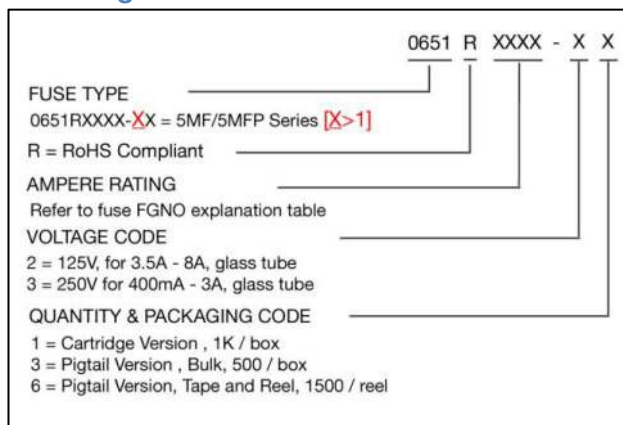
| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
|          | 1.0     | 1    | 1000           |
| 1-1/4    | 1.25    | 1.25 | 1250           |
| 1-1/2    | 1.50    | 1.5  | 1500           |
|          | 2.0     | 2    | 2000           |
| 2-1/2    | 2.5     | 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                     | 500      | 33 / 23        | N/A                 |
| Tape & Reel         | EIA-296-F               | 1500     | 73 / 26        | 10mm Pitch and 63mm |



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