

Type 5HF / 5HFP

Quick - acting Fuse Series (High-Breaking Capacity)

HF  5HF/5HFP Series, 5x20mm Ceramic Tube Quick-acting Fuse

RoHS 6 Compliant

Description

5x20mm quick-acting, high breaking capacity, ceramic body cartridge fuse designed, approved and complied with IEC 60127-2, standard sheet 1.

Features

- High breaking capacity (250V ac @ 1500A)
- Meet IEC standard 60127-2, sheet 1
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 6 compliant
- Halogen Free
- Leadfree

Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = 
HALOGEN FREE = 









Physical Specifications

| | |
|-----------|---|
| Materials | Body : Ceramic |
| | Cap : Nickel Plated Brass Caps |
| | Leads : Matte Tin Plated Copper |
| Marking | On Fuse : |
| | "bel", "F", "Current Rating", "H", "250V", |
| | "Appropriate Safety Logos", "✓" (RoHS 6 compliant) |
| | On Label : |
| | "bel", "5HF" or "5HFP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "☑", "♻️" (China RoHS compliant). |

Electrical Characteristics (IEC-127-2 STANDARD SHEET 1) Safety Agency Approvals

| Rated Current | 1.5 In | | 2.1 In | | 2.75 In | | 4 In | | 10 In |
|----------------|--------|------|--------|-----|---------|------|------|-----|-------|
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MAX |
| 100mA to 3.15A | 1 | 30 | 10 | 2 | 3 | 300 | 20 | | |
| 4A to 6.3A | 1 | 30 | 10 | 3 | 3 | 300 | 20 | | |
| 8A to 12A | 1 | 30 | 40 | 20 | 10 | 1000 | 30 | | |
| | hr. | min. | ms | sec | ms | ms | ms | | |

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

| SAFETY AGENCY | SAFETY AGENCY CERTIFICATE NUMBER | VOLTAGE RATING (V) | AMPERE RANGE / VOLT @ I.R. ABILITY* | |
|---|--|--------------------|---|-------------------------------|
|  | 1410138 1400793 | 100mA-10A/250V AC | 1A - 6.3A / 250V AC @ 1500A 8A - 12A / 250V AC @ 1500A | |
|  | 40000506 | | 1A - 6.3A / 250V AC @ 1500A | |
|  | E20624 | | 100mA - 10A / 250V AC @ 1500A | |
|  | LR39772 | | | |
|  | JET1037-31003-1008 JET1037-31003-1009 | | | 1A - 5A / 250V AC @ 1500A |
|  | 2002010207021529 | | | 100mA - 10A / 250V AC @ 1500A |

* I.R. = INTERRUPTING RATING = SHORT CIRCUIT RATING (AMPS)

Specifications subject to change without notice



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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 (ohm) | Volt-drop @100% In (Volt) max. | Voltage and Interrupting Ratings | Melting I ² T <10 mSec (A ² Sec) | Melting I ² T @10 In (A ² Sec) | Maximum Power Dissipation (W) | Agency Approvals | | | | | |
|----------------|---------------|-------------------------------|--------------------------------|---|--|--|-------------------------------|------------------|-----|-----|---|-----|---|
| | | | | | | | | UL | CSA | CCC | S | ULC | P |
| 5HF (P) 100-R | 100mA | 3.85 | 0.55 | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.003 | 0.002 | 0.30 | Y | Y | Y | | | |
| 5HF (P) 125-R | 125mA | 2.52 | 0.51 | | 0.005 | 0.004 | 0.36 | Y | Y | Y | | | |
| 5HF (P) 160-R | 160mA | 1.59 | 0.44 | | 0.009 | 0.008 | 0.43 | Y | Y | Y | | | |
| 5HF (P) 200-R | 200mA | 1.22 | 0.40 | | 0.016 | 0.014 | 0.52 | Y | Y | Y | | | |
| 5HF (P) 250-R | 250mA | 0.90 | 0.38 | | 0.028 | 0.026 | 0.63 | Y | Y | Y | | | |
| 5HF (P) 315-R | 315mA | 0.67 | 0.37 | | 0.05 | 0.05 | 0.76 | Y | Y | Y | | | |
| 5HF (P) 400-R | 400mA | 0.46 | 0.34 | | 0.09 | 0.08 | 0.92 | Y | Y | Y | | | |
| 5HF (P) 500-R | 500mA | 0.34 | 0.32 | | 0.16 | 0.15 | 1.11 | Y | Y | Y | | | |
| 5HF (P) 630-R | 630mA | 0.225 | 0.29 | | 0.29 | 0.27 | 1.35 | Y | Y | Y | | | |
| 5HF (P) 800-R | 800mA | 0.192 | 0.23 | | 0.36 | 0.35 | 0.58 | Y | Y | Y | | | |
| 5HF (P) 1-R | 1A | 0.139 | 0.19 | | 0.65 | 0.63 | 0.69 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 1.25-R | 1.25A | 0.097 | 0.17 | | 1.2 | 1.2 | 0.81 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 1.6-R | 1.6A | 0.072 | 0.16 | | 2.1 | 2.1 | 0.96 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 2-R | 2A | 0.052 | 0.14 | | 3.8 | 3.8 | 1.1 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 2.5-R | 2.5A | 0.039 | 0.13 | | 6.8 | 6.8 | 1.3 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 3.15-R | 3.15A | 0.029 | 0.13 | | 12 | 12 | 1.6 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 4-R | 4A | 0.022 | 0.13 | | 22 | 22 | 1.9 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 5-R | 5A | 0.016 | 0.13 | | 39 | 40 | 2.2 | Y | Y | Y | Y | Y | Y |
| 5HF (P) 6.3-R | 6.3A | 0.011 | 0.10 | | 70 | 73 | 2.7 | Y | Y | Y | Y | Y | |
| 5HF (P) 8-R | 8A | 0.010 | 0.11 | | 126 | 131 | 3.1 | Y | Y | Y | Y | | |
| 5HF (P) 10-R | 10A | 0.007 | 0.10 | | 227 | 238 | 3.7 | Y | Y | Y | Y | | |
| 5HF (P) 12-R | 12A | 0.005 | 0.09 | | 408 | 430 | 4.4 | | | | Y | | |

Consult manufacturer for other ratings

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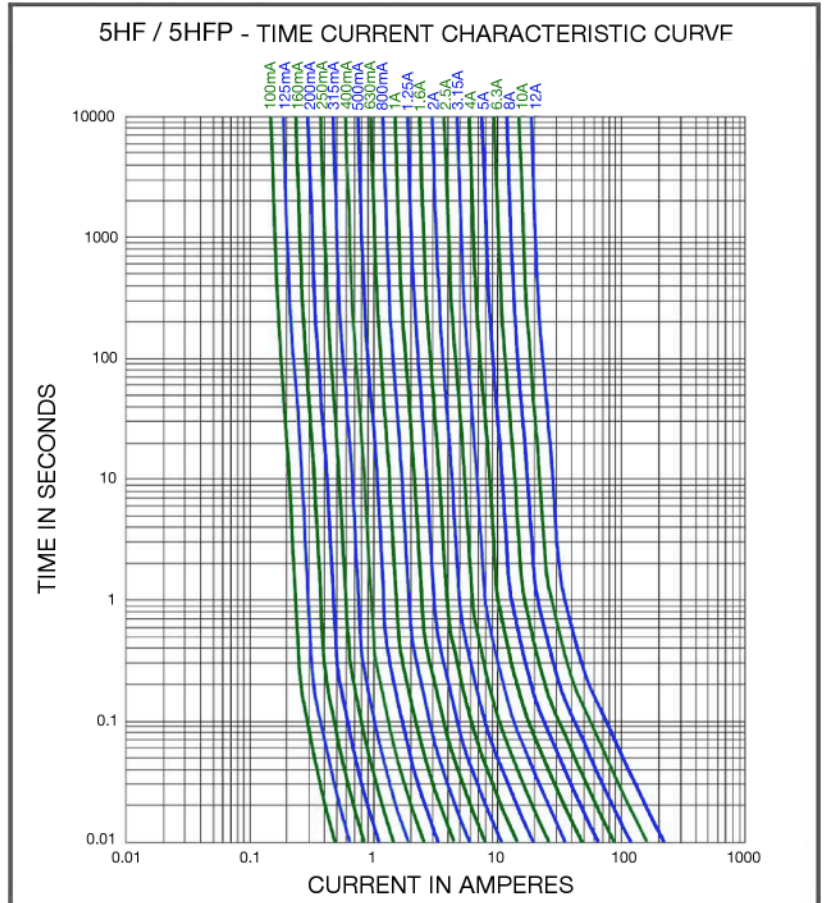
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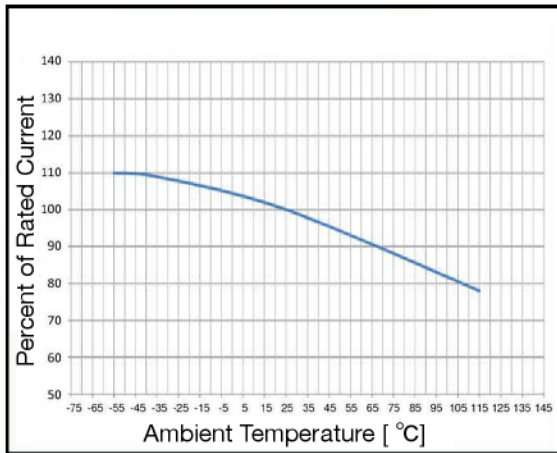
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Average Time Current Curve

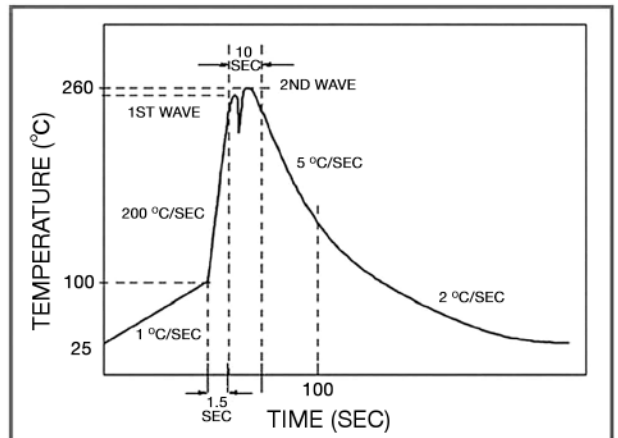


Temperature Derating Curve



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 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. |



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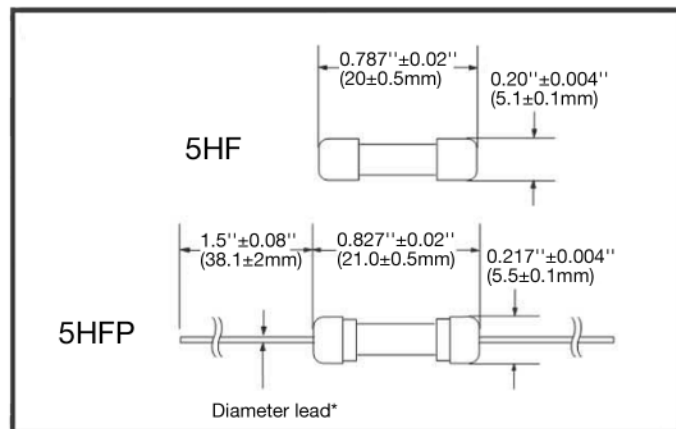
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Fuse FGNO Explanation 06XX X [XXXX] X XX, [XXXX]=Ampere Rating

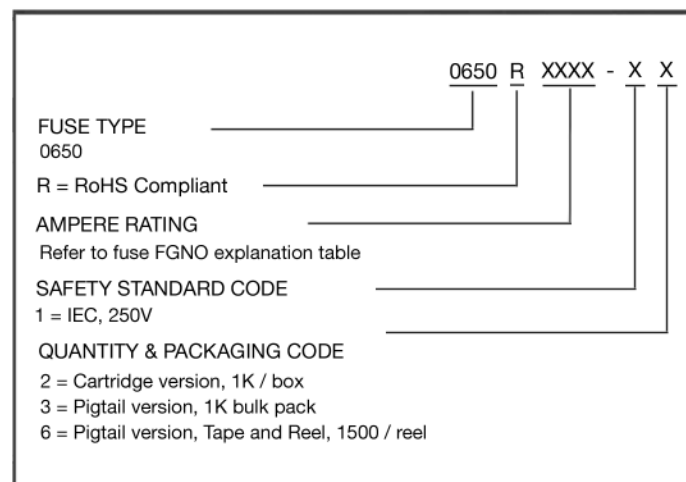
| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] | Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|----------|---------|------|----------------|
| 1/32 | 0.032 | 32 | 0032 | 1-1/4 | 1.25 | 1.25 | 1250 |
| 1/25 | .040 | 40 | 0040 | 1-1/2 | 1.50 | 1.5 | 1500 |
| 1/20 | .050 | 50 | 0050 | | 1.60 | 1.6 | 1600 |
| 1/16 | .063 | 63 | 0063 | | 2.0 | 2 | 2000 |
| 8/100 | .080 | 80 | 0080 | 2-1/4 | 2.25 | 2.25 | 2250 |
| 1/10 | .100 | 100 | 0100 | 2-1/2 | 2.5 | 2.5 | 2500 |
| 1/8 | .125 | 125 | 0125 | | 3.0 | 3 | 3000 |
| 15/100 | .150 | 150 | 0150 | | 3.15 | 3.15 | 3150 |
| | .160 | 160 | 0160 | 3-1/2 | 3.5 | 3.5 | 3500 |
| 2/10 | .200 | 200 | 0200 | | 4.0 | 4 | 4000 |
| 1/4 | .250 | 250 | 0250 | | 5.0 | 5 | 5000 |
| 3/10 | .300 | 300 | 0300 | | 6.0 | 6 | 6000 |
| | .315 | 315 | 0315 | | 6.3 | 6.3 | 6300 |
| 3/8 | .375 | 375 | 0375 | | 7.0 | 7 | 7000 |
| 4/10 | .400 | 400 | 0400 | 7-1/2 | 7.5 | 7.5 | 7500 |
| 1/2 | .500 | 500 | 0500 | | 8.0 | 8 | 8000 |
| 6/10 | .600 | 600 | 0600 | | | 10 | 9100 |
| | .630 | 630 | 0630 | | | 12 | 9120 |
| 7/10 | .700 | 700 | 0700 | | | 15 | 9150 |
| 3/4 | .750 | 750 | 0750 | | | 20 | 9200 |
| 8/10 | .800 | 800 | 0800 | | | 25 | 9250 |
| | | | | | | 30 | 9300 |

Mechanical Dimensions



*Ratings 6.3A and less have 0.032" diameter lead
*Ratings 8A and above have 0.040" diameter lead

Ordering Information



Packaging

| Packaging Option | Packaging Specification | Quantity | Packaging Code | Inside Tape Spacing |
|--------------------------|-------------------------|----------|----------------|---------------------|
| Bulk | N/A | 1000 | 12 | 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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