

Type 5ET / 5ETP

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

HF  5ET/5ETP Series, 5x20mm Glass Tube Time-lag Fuse

RoHS 2 Compliant

Description

5x20mm Time-lag fuse, high surge-proof, enhanced breaking capacity, glass tube body cartridge fuse designed, approved and complied with IEC 60127-2, standard sheet 6.



Features

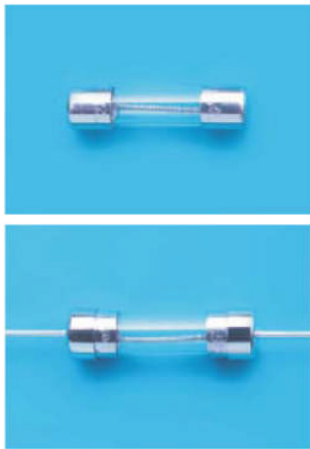
- Meet IEC standard 60127-2, sheet 6
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 2 compliant
- Halogen Free
- Leadfree

Applications



Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = 
HALOGEN FREE = 



Physical Specifications






| | |
|-----------|--|
| Materials | Body : Glass |
| | Cap : Nickel Plated Brass Caps |
| | Leads : Matte Tin Plated Copper |
| Marking | On Fuse : |
| | "bel", "T", "Current Rating", "E", "250V", "Appropriate Safety Logos", "✓" (RoHS 2 compliant) |
| | On Label : |
| | "bel", "5ET" or "5ETP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "  ", "  "(China RoHS compliant). |

Electrical Characteristics (IEC-127-2 STANDARD SHEET 6)

| 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 12A | 1 hr. | 2 min. | 600 ms | 10 sec | 150 ms | 3 sec | 20 ms | 300 ms | | |

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

Safety Agency Approvals






| Safety Agency | Safety Agency Certificate | Voltage Rating (V) | Ampere Range / Volt @ I.R. ability* |
|---|---------------------------|---------------------|---|
|  | 1720086 1400794 | 1A-12A / 250V AC | 1A-6.3A/250V AC@150A 8A-12A/250C AV@150A |
|  | 40007746 | | 1A-6.3A / 250V AC@150A |
|  | E20624 | | |
|  | LR39772 | | |
|  | 2003010207030342 | | |

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

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 (ohms) | 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 | | | | |
|----------------|---------------|--------------------------------|-------------------------------|---|--|--|-------------------------------|---|---|---|---|---|
| | | | | | | | |  |  |  |  |  |
| 5ET(P) 1-R | 1A | 0.111 | 0.15 | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 28 | 29 | 0.42 | Y | Y | Y | Y | Y |
| 5ET(P) 1.25-R | 1.25A | 0.073 | 0.13 | | 42 | 43 | 0.42 | Y | Y | Y | Y | Y |
| 5ET(P) 1.6-R | 1.6A | 0.058 | 0.13 | | 62 | 64 | 0.51 | Y | Y | Y | Y | Y |
| 5ET(P) 2-R | 2A | 0.039 | 0.12 | | 92 | 95 | 0.61 | Y | Y | Y | Y | Y |
| 5ET(P) 2.5-R | 2.5A | 0.031 | 0.12 | | 137 | 142 | 0.74 | Y | Y | Y | Y | Y |
| 5ET(P) 3.15-R | 3.15A | 0.023 | 0.10 | | 203 | 211 | 0.90 | Y | Y | Y | Y | Y |
| 5ET(P) 4-R | 4A | 0.017 | 0.10 | | 300 | 313 | 1.08 | Y | Y | Y | Y | Y |
| 5ET(P) 5-R | 5A | 0.012 | 0.09 | | 444 | 465 | 1.31 | Y | Y | Y | Y | Y |
| 5ET(P) 6.3-R | 6.3A | 0.010 | 0.09 | | 658 | 691 | 1.58 | Y | Y | Y | Y | Y |
| 5ET(P) 8-R | 8A | 0.007 | 0.09 | | 252 | 277 | 3.11 | | | | Y | |
| 5ET(P) 10-R | 10A | 0.006 | 0.08 | | 400 | 440 | 3.68 | | | | Y | |
| 5ET(P) 12-R | 12A | 0.005 | 0.08 | | 635 | 699 | 4.36 | | | | Y | |

Consult manufacturer for other ratings

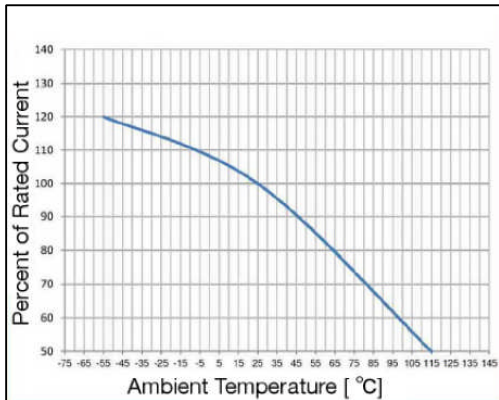


Specifications subject to change without notice

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Temperature Derating Curve

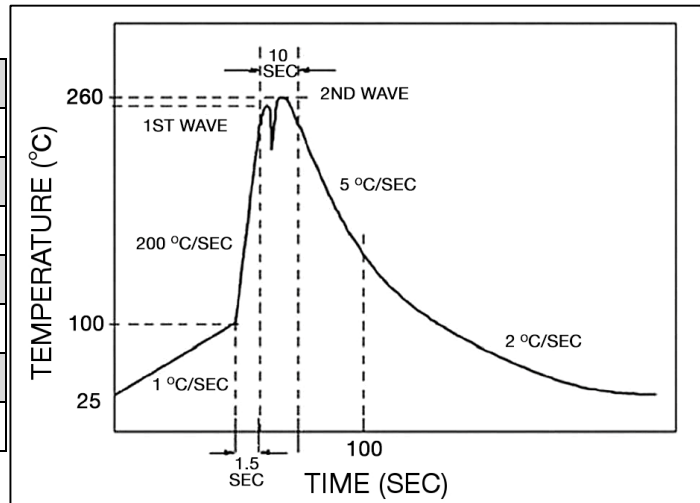


Average Time Current Curve



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 Max 4°C / second |
| Final preheat temperature | within 125°C of soldering temperature |
| Peak temperature T_p | 260°C |
| Time within +0°C / -5°C of actual peak temperature | 10 seconds |
| Ramp-down rate | 5°C / second max. |



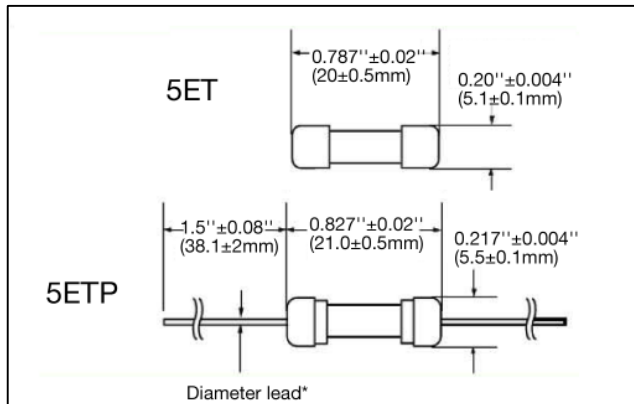
Fuse FGNO Explanation

0655 R [XXXX] -XX

0655R=5ET/5ETP; [XXXX]=Ampere Rating; XX=See Ordering Information as below

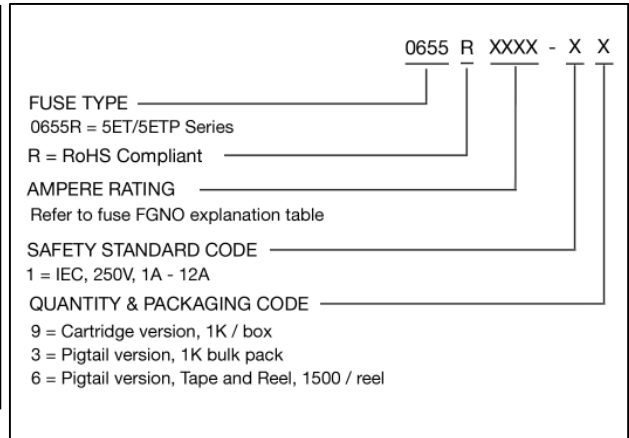
| Fraction | Decimal | Amps | Bel FGNO[XXXX] |
|----------|---------|------|----------------|
| | 1.0 | 1 | 1000 |
| 1-1/4 | 1.25 | 1.25 | 1250 |
| | 1.60 | 1.6 | 1600 |
| | 2.0 | 2 | 2000 |
| 2-1/2 | 2.5 | 2.5 | 2500 |
| | 3.15 | 3.15 | 3150 |
| | 4.0 | 4 | 4000 |
| | 5.0 | 5 | 5000 |
| | 6.3 | 6.3 | 6300 |
| | 8.0 | 8 | 8000 |
| | | 10 | 9100 |
| | | 12 | 9120 |

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 | 19 | N/A |
| Bulk (Pigtail Type) | N/A | 1000 | 13 | N/A |
| Tape & Reel, 10mm Pitch | EIA-296-F | 1500 | 16 | 63 |



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[5ET 8-R](#) [5ETP 10-R](#) [5ET 5-R](#) [5ETP 8-R](#) [5ET 1.6-R](#) [5ETP 2.5-R](#) [5ETP 3.15-R](#) [5ET 1-R](#) [5ET 12-R](#) [5ETP 1-R](#)
[5ETP 6.3-R](#) [5ETP 5-R](#) [5ETP 2-R](#) [5ETP 4-R](#)