

# Type 5ET / 5ETP

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

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

RoHS 6 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 6 compliant
- Halogen Free
- Leadfree

### 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", "T", "Current Rating", "E", "250V",
	"Appropriate Safety Logos", "✓" (RoHS 6 compliant)
	On Label :
	"bel", "5ET" or "5ETP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "M", "G" (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 NUMBER	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
	1216132 1400794	1A - 12A / 250V AC	1A - 6.3A / 250V AC @ 150A 8A - 12A / 250V AC @ 150A
	40007746		
	E20624		
	LR39772		
	2003010207030342		
* 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 <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				
												
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

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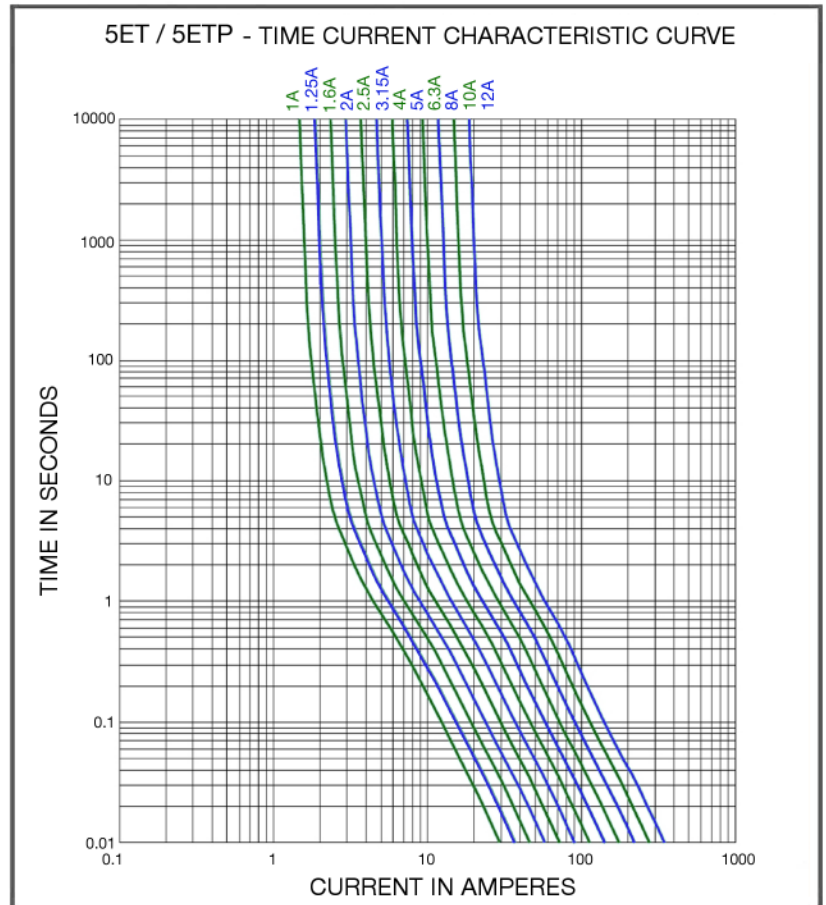
# Type 5ET / 5ETP

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

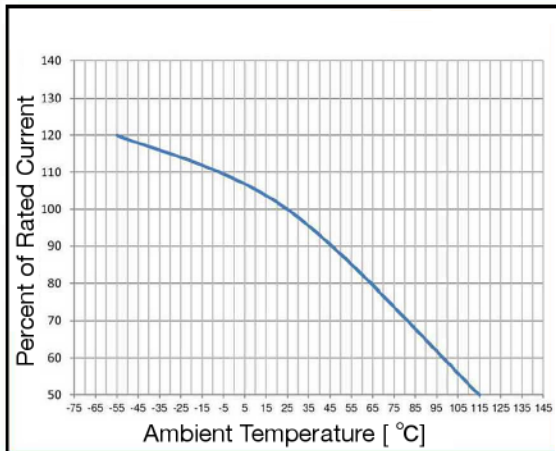
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## Average Time Current Curve

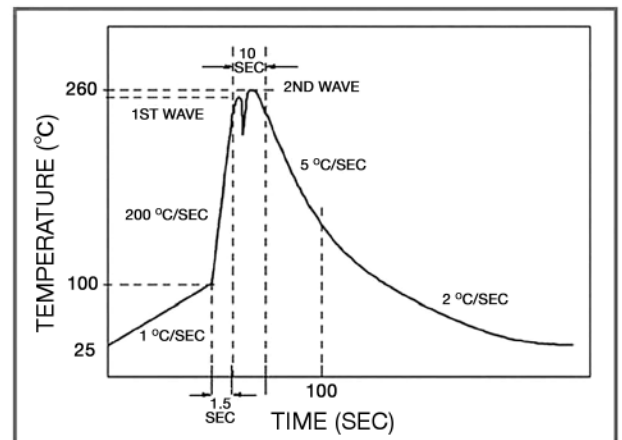


## Temperature Derating Curve



## 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 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.



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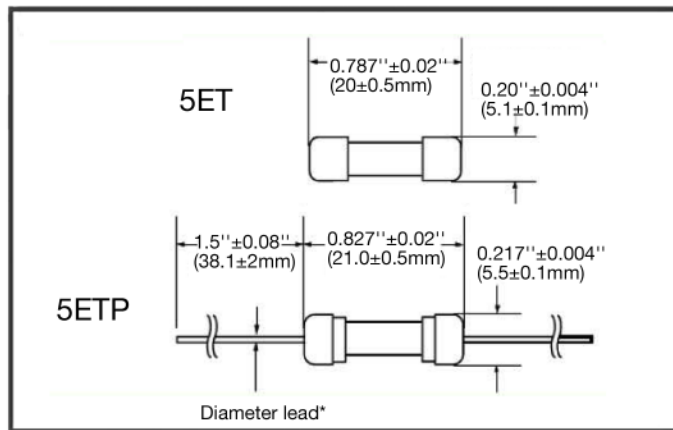
## Fuse FGNO Explanation

0655 R [XXXX] - XX

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

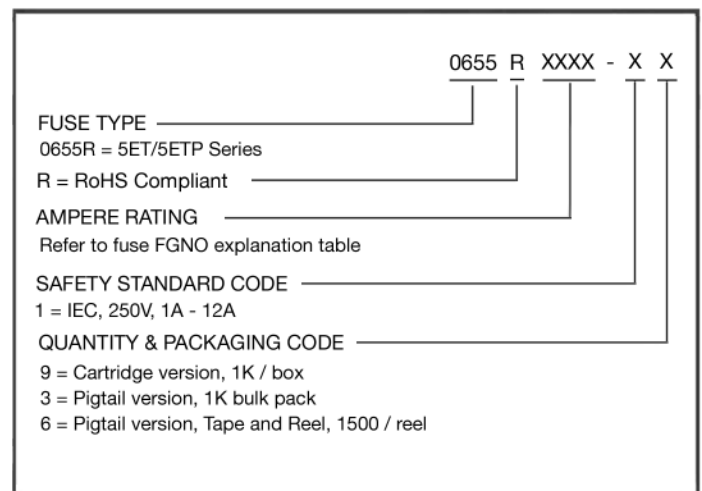
Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/4	1.25	1.25	1250
	1.60	1.6	1600
	2.0	2	2000
2-1/2	2.5	2.5	2500
	3.15	3.15	3150
	4.0	4	4000
	5.0	5	5000
	6.3	6.3	6300
	8.0	8	8000
		10	9100
		12	9120

## 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, 10 mm Pitch	EIA-296-F	1500	16	63

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