

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 ² T <10 mSec (A ² Sec)	Melting I ² T @10 In (A ² Sec)	Maximum Power Dissipation (W)	Agency Approvals				
								UL US	CSA	CCC	S	DE
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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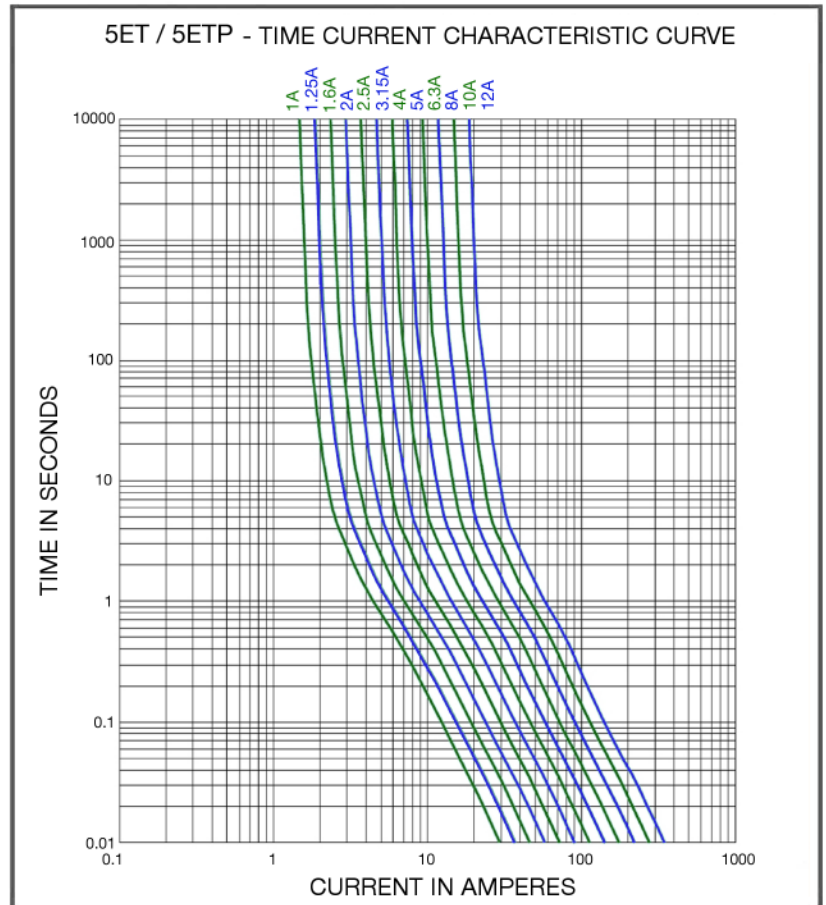
Type 5ET / 5ETP

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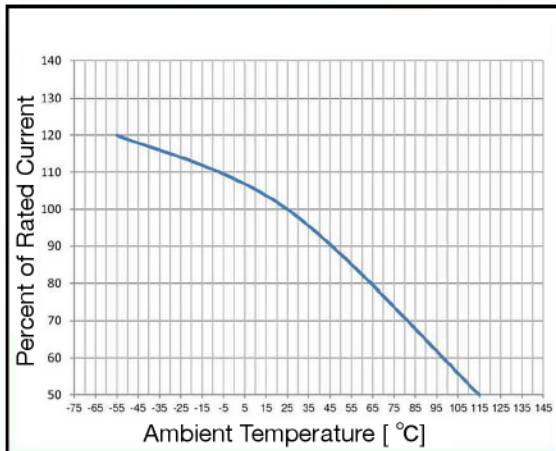
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RoHS 6 Compliant

Average Time Current Curve

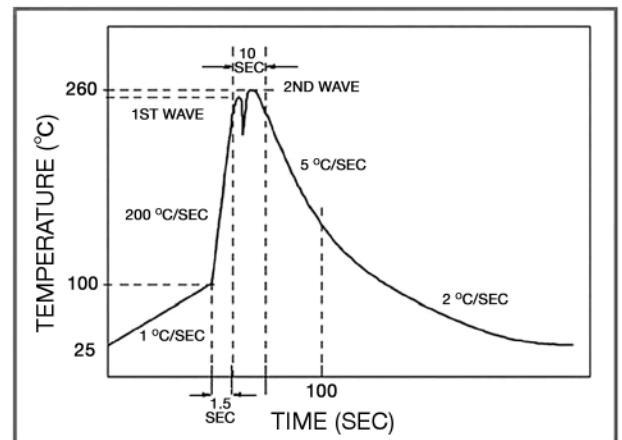


Temperature Derating Curve



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 _p	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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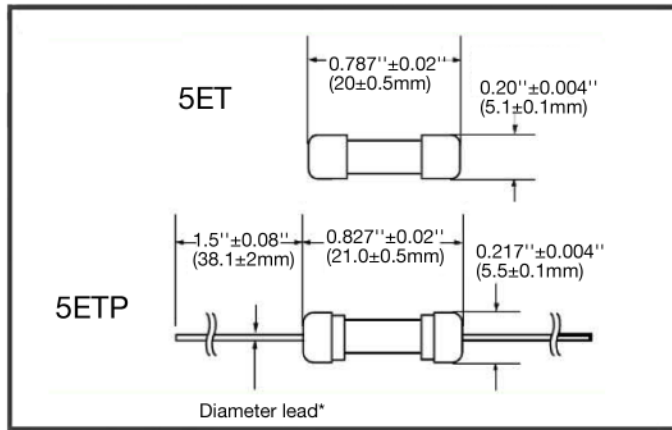
Fuse FGNO Explanation

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

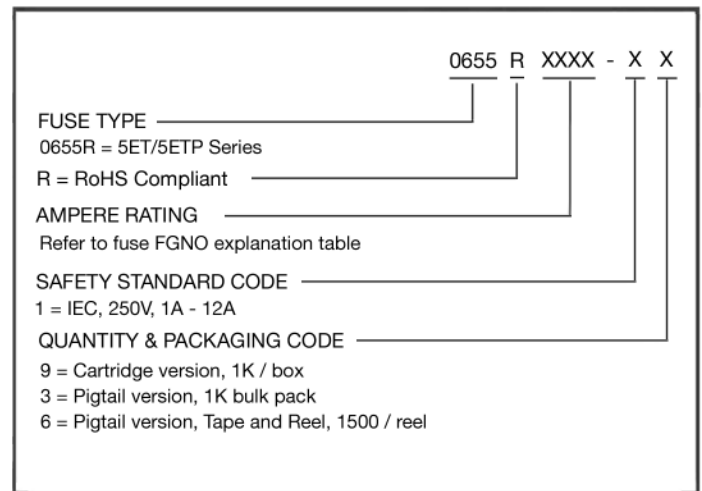
Mechanical Dimensions



*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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