

# Type 0659C / 0659P

## Time - lag Fuse Series (High-Breaking Capacity)

HF (Pb) 0659C/0659P Series, 5x20mm Ceramic Tube Time - Lag Fuse

RoHS 6 Compliant

### Description

5x20mm Time-Lag surge withstand, high breaking capacity, ceramic body cartridge fuse designed, approved and complied with IEC 60127-2, standard sheet 5.

### Features

- High breaking capacity (250V ac @ 1500A)
- Meet IEC standard 60127-2, sheet 5
- 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 : Ceramic
	Cap : Nickel Plated Brass Caps
	Leads : Matte Tin Plated Copper
Marking	On Fuse :
	"bel", "T", "Current Rating", "H", "250V",
	"Appropriate Safety Logos"
	On Label :
	"bel", "0659C" or "0659P", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "M", "G" (China RoHS compliant).

### Electrical Characteristics (IEC-127-2 STANDARD SHEET 5)

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 3.15A	1	30	0.75	80	95	5	10	150		
4A and above	1	30	0.75	80	150	5	10	150		
	hr.	min.	sec	sec	ms	sec	ms	ms		

In clause 9.2, the test voltage is 125VDC.

### Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE NUMBER	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
D'E	40039275		1A - 6.3A / 250V AC @ 1,500A
ccc / PSE	PSE14020742 PSE14020744 PSE14020747 PSE14020743	0659C 1A - 6.3A / 250V AC 0659P 1A - 6.3A / 250V AC	0659C 1A - 5A / 250V AC @ 1,500A 0659C 6.3A / 250V AC @ 1,500A 0659P 1A - 5A / 250V AC @ 1,500A 0659P 6.3A / 250V AC @ 1,500A
ccc	2014010207673750		0659C 1A - 6.3A / 250V AC @ 1,500A
CQC	CQC14012105368		0659P 1A - 6.3A / 250V AC @ 1,500A
UL US	E20624		1A - 6.3A / 250V AC @ 1,500A 1A - 6.3A / 600V AC @ 150A

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

Specifications subject to change without notice



Bel Fuse Inc.  
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



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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

Part 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				
												
0659C1000-XX	1A	0.134	0.191	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	2.3	2.4	0.45	Y	Y	Y	Y	
0659P1000-XX												Y
0659C1250-XX	1.25A	0.103	0.187		3.2	3.3	0.56	Y	Y	Y	Y	
0659P1250-XX												Y
0659C1600-XX	1.6A	0.076	0.178		5.6	5.4	0.60	Y	Y	Y	Y	
0659P1600-XX												Y
0659C2000-XX	2A	0.049	0.141		14.4	14.0	0.70	Y	Y	Y	Y	
0659P2000-XX												Y
0659C2500-XX	2.5A	0.036	0.133		28.1	25.0	0.87	Y	Y	Y	Y	
0659P2500-XX												Y
0659C3150-XX	3.15A	0.024	0.110		25.0	24.8	0.86	Y	Y	Y	Y	
0659P3150-XX												Y
0659C4000-XX	4A	0.016	0.095		56.3	51.2	0.89	Y	Y	Y	Y	
0659P4000-XX												Y
0659C5000-XX	5A	0.013	0.090		88.2	92.5	1.14	Y	Y	Y	Y	
0659P5000-XX												Y
0659C6300-XX	6.3A	0.009	0.086	139.2	142.9	1.39	Y	Y	Y	Y		
0659P6300-XX											Y	

Consult manufacturer for other ratings

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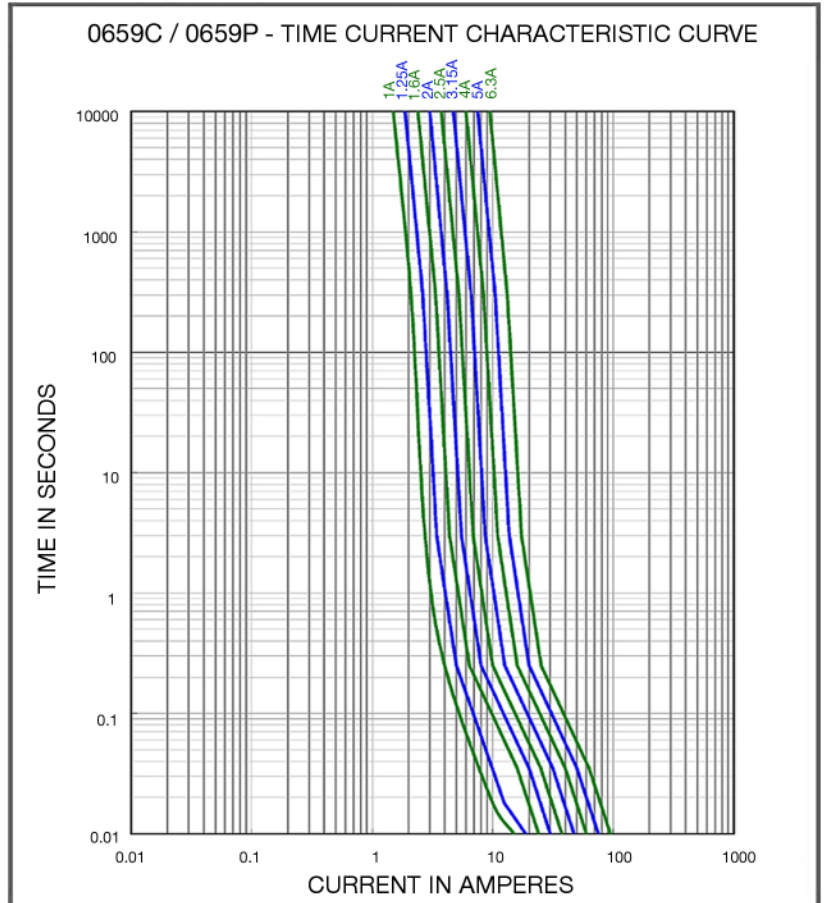
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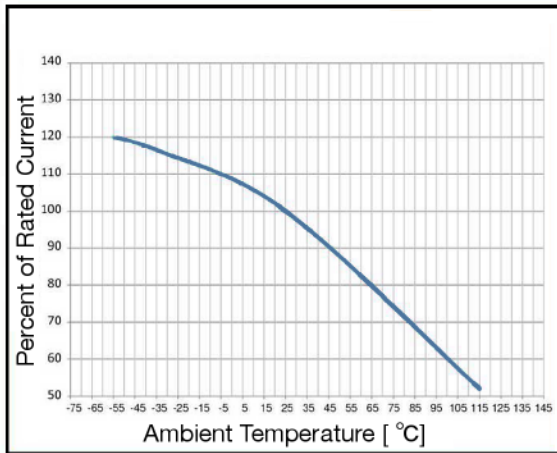
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### Average Time Current Curve

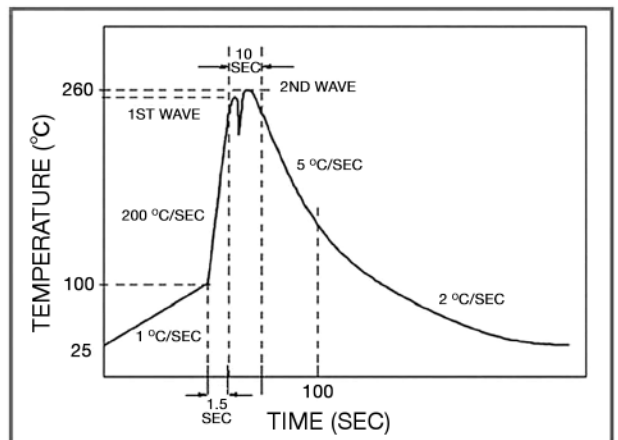


### Temperature Derating Curve



### 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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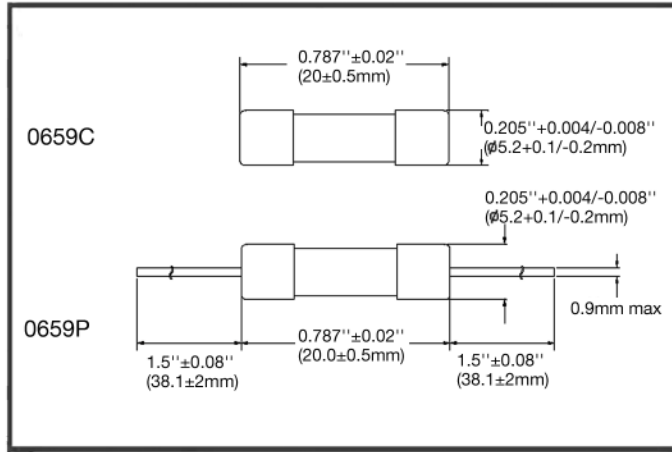
### Fuse FGNO Explanation

0659 X [XXXX] - XX

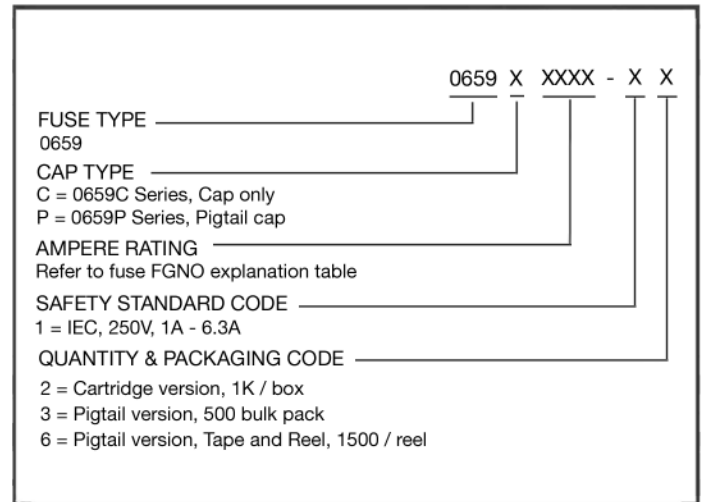
0659C/P=0659C/P; [XXXX]=Ampere Rating; XX=See Ordering Information as below

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

### Mechanical Dimensions



### 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	500	13	N/A
Tape & Reel, 10 mm Pitch	EIA-296-F	1500	16	63

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