

# Type 5SF / 5SFP

## Quick - acting Fuse Series (Low Breaking Capacity)

HF Pb 5SF/5SFP Series, 5x20mm Glass Tube Quick-acting Fuse

RoHS 6 Compliant

### Description

5x20mm quick-acting, low breaking capacity, glass tube body cartridge fuse designed, approved and complied with IEC 60127-2, standard sheet 2.

### Features

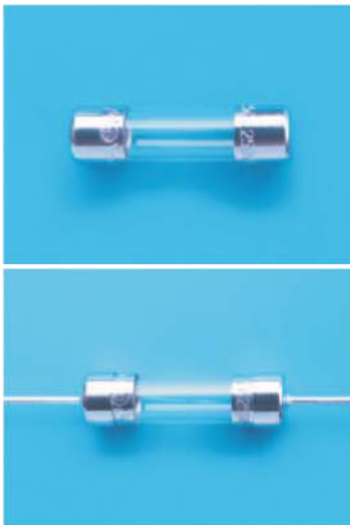
- Meet IEC standard 60127-2, sheet 2
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS 6 compliant
- Halogen Free
- Leadfree

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE =   
HALOGEN FREE = 



### Physical Specifications






Materials	Body : Glass
	Cap : Nickel Plated Brass Caps
	Leads : Matte Tin Plated Copper
Marking	On Fuse :
	"bel", "F", "Current Rating", "L", "250V",
	"Appropriate Safety Logos", "✓" (RoHS 6 compliant)
	On Label :
	"bel", "5SF" or "5SFP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "☒", "☉" (China RoHS compliant).

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

Rated Current	1.5 In		2.1 In		2.75 In		4 In		10 In
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX
80mA to 100mA	1	30	10	0.5	3	100	20		
125mA to 6.3A	1	30	50	2	10	300	20		
8A to 10A	1	30	50	2	10	400	40		
	hr.	min.	ms	sec	ms	ms	ms		

In clause 9.2, the test voltage for 5SFP 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*
	1513385	80mA - 10A / 250V AC	80mA - 6.3A / 250V AC @ 35A or 10 In whichever is greater
	40000509		
	E20624		80mA - 10A / 250V AC @ 35A or 10 In whichever is greater
	LR39772		
	2003010207030263		80mA - 6.3A / 250V AC @ 35A or 10 In whichever is greater

\* 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				
								UL	CSA	CCC	S	CE
5SF(P) 80-R	80mA	7.4	0.93	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.003	0.003	0.39	Y	Y	Y	Y	Y
5SF(P) 100-R	100mA	4.9	0.89		0.005	0.005	0.44	Y	Y	Y	Y	Y
5SF(P) 125-R	125mA	3.6	0.84		0.009	0.008	0.50	Y	Y	Y	Y	
5SF(P) 160-R	160mA	2.25	0.61		0.017	0.015	0.57	Y	Y	Y	Y	Y
5SF(P) 200-R	200mA	1.10	0.33		0.033	0.028	0.64	Y	Y	Y	Y	Y
5SF(P) 250-R	250mA	0.84	0.33		0.05	0.05	0.73	Y	Y	Y	Y	Y
5SF(P) 315-R	315mA	0.58	0.32		0.10	0.09	0.83	Y	Y	Y	Y	Y
5SF(P) 400-R	400mA	0.47	0.31		0.17	0.17	0.94	Y	Y	Y	Y	Y
5SF(P) 500-R	500mA	0.31	0.27		0.40	0.40	0.80	Y	Y	Y	Y	Y
5SF(P) 630-R	630mA	0.152	0.13		0.64	0.65	0.28	Y	Y	Y	Y	Y
5SF(P) 800-R	800mA	0.112	0.13		1.0	1.0	0.32	Y	Y	Y	Y	Y
5SF(P) 1-R	1A	0.088	0.13		1.6	1.7	0.40	Y	Y	Y	Y	Y
5SF(P) 1.25-R	1.25A	0.065	0.12		2.5	2.7	0.45	Y	Y	Y	Y	Y
5SF(P) 1.6-R	1.6A	0.050	0.11		4.0	4.4	0.75	Y	Y	Y	Y	Y
5SF(P) 2-R	2A	0.034	0.10		6	7	0.65	Y	Y	Y	Y	Y
5SF(P) 2.5-R	2.5A	0.026	0.10		10	11	0.85	Y	Y	Y	Y	Y
5SF(P) 3.15-R	3.15A	0.022	0.10		16	18	1.20	Y	Y	Y	Y	Y
5SF(P) 4-R	4A	0.017	0.10		26	30	1.43	Y	Y	Y	Y	Y
5SF(P) 5-R	5A	0.013	0.10		41	48	1.89	Y	Y	Y	Y	Y
5SF(P) 6.3-R	6.3A	0.010	0.10		65	74	2.50	Y	Y	Y	Y	Y
5SF(P) 8-R	8A	0.007	0.08	103	119	3.30	Y	Y				
5SF(P) 10-R	10A	0.006	0.08	163	192	4.00	Y	Y				

Consult manufacturer for other ratings

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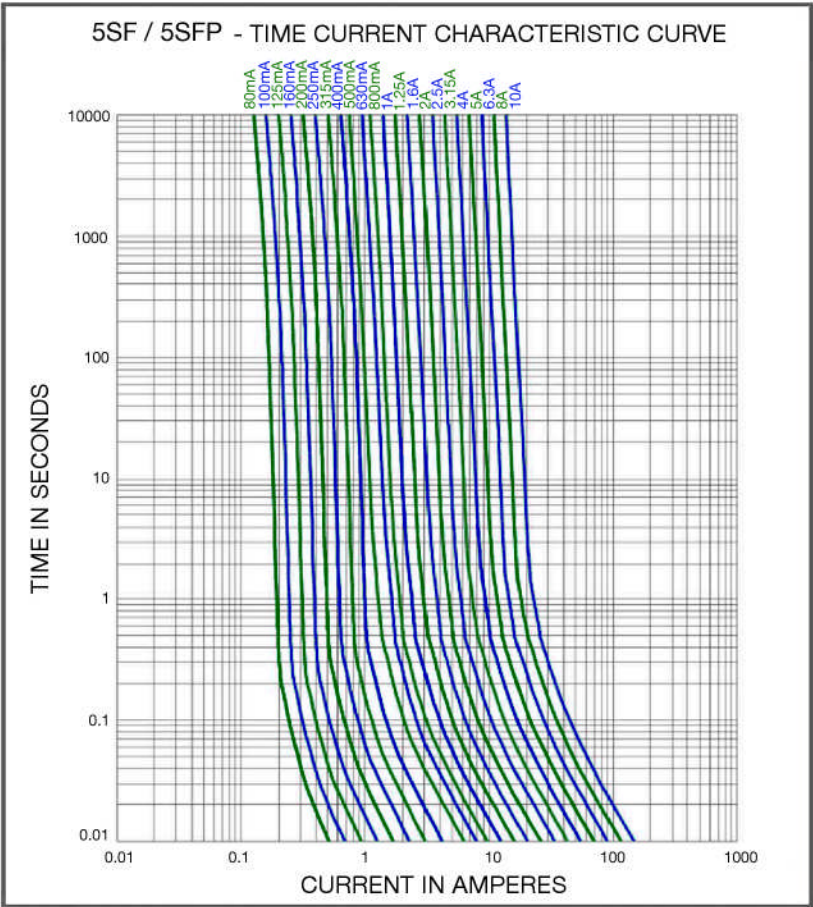
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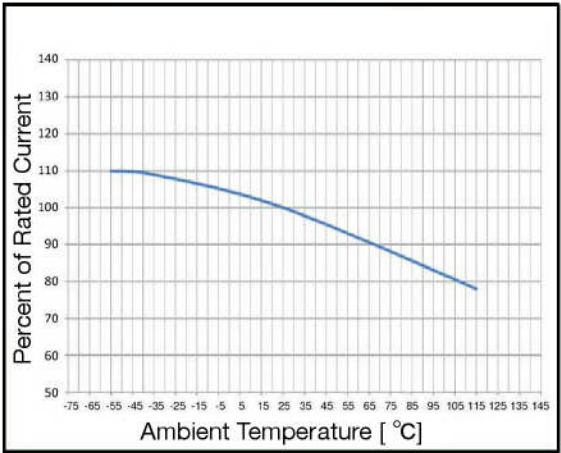
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### Average Time Current Curve

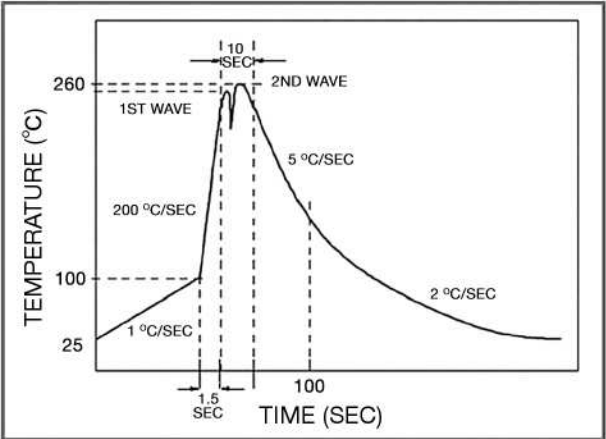


### Temperature Derating Curve



### 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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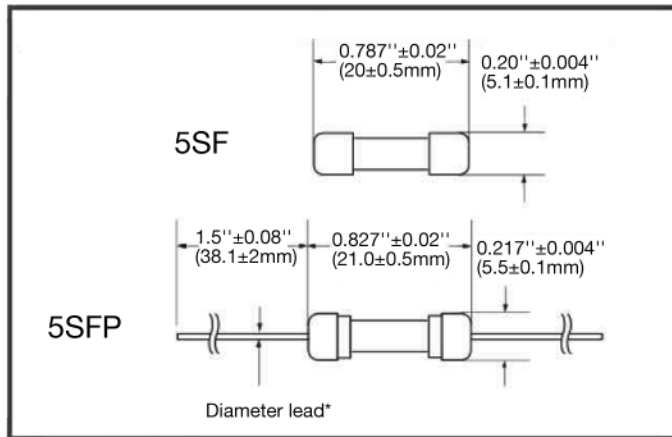
### Fuse FGNO Explanation

0651 R [XXXX] - XX

[XXXX]=Ampere Rating; XX=See Ordering Information as below

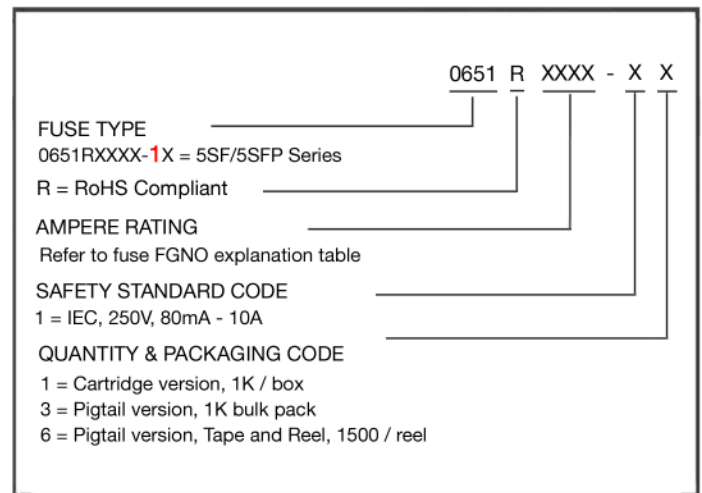
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]	Fraction	Decimal	Amps	Bel FGNO[XXXX]
8/100	0.080	80	0080		1.0	1	1000
1/10	.100	100	0100	1-1/4	1.25	1.25	1250
1/8	.125	125	0125		1.60	1.6	1600
	.160	160	0160		2.0	2	2000
2/10	.200	200	0200	2-1/2	2.5	2.5	2500
1/4	.250	250	0250		3.15	3.15	3150
	.315	315	0315		4.0	4	4000
4/10	.400	400	0400		5.0	5	5000
1/2	.500	500	0500		6.3	6.3	6300
	.630	630	0630		8.0	8	8000
8/10	.800	800	0800			10	9100

### 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	11	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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