

# Type 5SF / 5SFP

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

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

RoHS 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

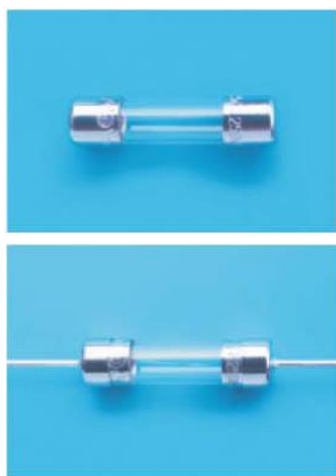
- Meet IEC standard 60127-2, sheet 2
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free

### 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 compliant)
	On Label :
	"bel", "5SF" or "5SFP", "F", "Current Rating", "L", "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
500mA 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	Ampere Rating / Voltage Rating	Ampere Range / Volt @ I.R. ability*
	SE-S-2002382	500mA-10A /250V AC	500mA-6.3A/250V AC@35A or 10 In whichever is greater
	40000509		
	E20624		500mA-10A/250V AC @35A or 10 In whichever is greater
	LR39772		
	Self-declaration No: 2020970207000128		500mA-6.3A/250V AC@35A or 10 In whichever is greater
*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 <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				
												
5SF(P) 500-R	500mA	0.31	0.27	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	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

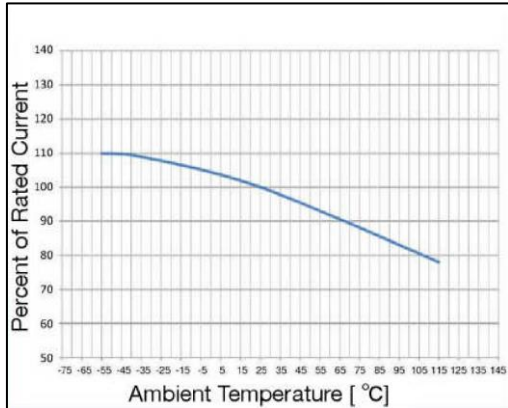


Specifications subject to change without notice

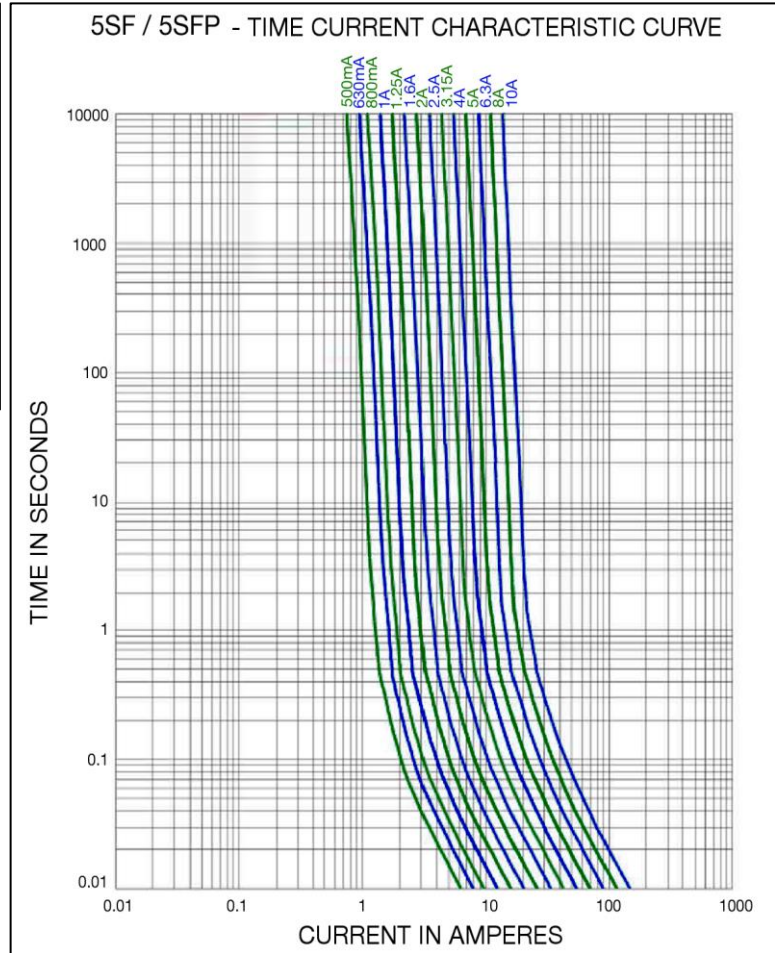
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206 Van Vorst Street  
Jersey City, NJ 07302 USA

+1 201.432.0463  
Bel.US.CS@belf.com  
[belfuse.com/circuit-protection](http://belfuse.com/circuit-protection)

## Temperature Derating Curve

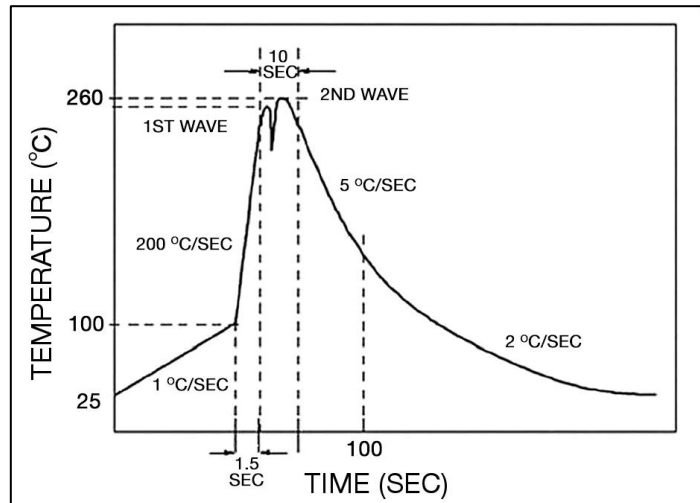


## Average Time Current Curve



## 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 <sub>p</sub>	260°C
Time within +0°C / -5°C of actual peak temperature	10 seconds
Ramp-down rate	5°C / second max.



## Fuse FGNO Explanation

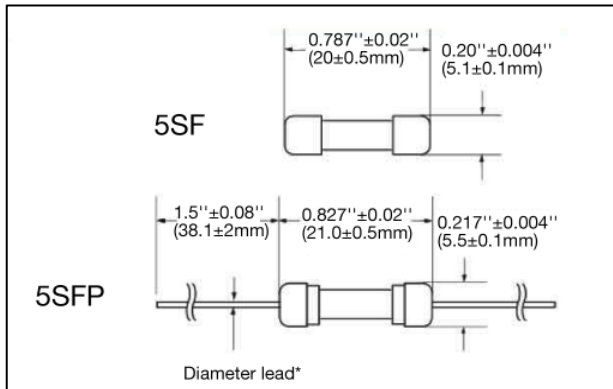
0651 R [XXXX] -XX

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

Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/2	.500	500	0500
	.630	630	0630
8/10	.800	800	0800

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

## Mechanical Dimensions



\*Ratings 6.3A and less have 0.032" ± 0.002" diameter lead;

\*Ratings 8A and above have 0.039" ± 0.002" diameter lead.

## Ordering Information

0651 R XXXX - X X

FUSE TYPE  
0651RXXXX-1X = 5SF/5SFP Series

R = RoHS Compliant

AMPERE RATING  
Refer to fuse FGNO explanation table

SAFETY STANDARD CODE  
1 = IEC, 250V, 500mA - 10A

QUANTITY & PACKAGING CODE  
1 = Cartridge version, 1K / box  
3 = Pigtail version, Bulk, 500 / box  
6 = Pigtail version, Tape and Reel, 1500 / reel

## Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	11	N/A
Bulk (Pigtail Type)	N/A	500	13	N/A
Tape & Reel	EIA-296-F	1500	16	10mm Pitch and 63mm