

Type 5HF / 5HFP

Quick-acting Fuse Series (High - Breaking Capacity)

5 x 20mm Ceramic Tube
RoHS 6 Compliant

HF Pb 5HF / 5HFP Series, 5 x 20mm Quick-acting Fuse



Description

5x20mm quick-acting, high breaking capacity, ceramic body cartridge fuse designed, approved and complied with IEC 60127-2, standard sheet 1.

Features

- High breaking capacity (250V ac @1500A)
- Meet IEC standard 60127-2, Sheet 1
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- RoHS6 compliant
- Halogen Free
- Leadfree

Electrical Characteristics (IEC-127-2 STANDARD SHEET 1)

Rated Current	1.5 In		2.1 In		2.75 In		4 In		10 In
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX
100mA to 3.15A	1	30	10	2	3	300	20		
4A to 6.3A	1	30	10	3	3	300	20		
8A to 12A	1	30	40	20	10	1	30		
	hr.	min.	ms	sec	ms	ms	ms		

In clause 9.2, the test voltage for 5HFP ratings from 1A to 6.3A is 63VDC.

Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE NUMBER	AMPERE RANGE / VOLT @ I.R.ABILITY
	909868 903560	1A - 6.3A / 250V AC @ 1,500A 8A - 12A / 250V AC @ 1,500A
	40000506	1A - 6.3A / 250V AC @ 1,500A
	EM233	
	E20624	100mA - 10A / 250V AC @ 1,500A
		
	LR39772	
	JET1037-31003-1008	1A - 5A / 250V AC @ 1,500A
	JET1037-31003-1009	
	JET1037-31003-1006	> 5A - 12A / 250V AC @ 1,500A
	2002010207021529	100mA - 10A / 250V AC @ 1,500A

Specifications subject to change without notice

Applications

Provide individual protection for components or internal circuits.

- Power Supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = 

HALOGEN FREE = 

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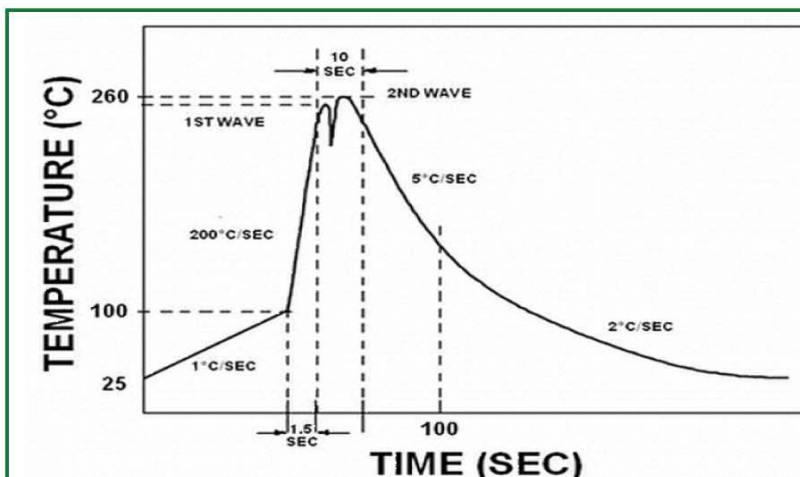
Electrical Specifications

Catalog Number	Ampere Rating	Typical Cold Resistance (ohm)	Volt-drop @100% In (Volt) Max.	Voltage Rating (V)	Interrupting Rating	Melting I ₂ T <10 m Sec (A ² Sec)	Melting I ₂ T @ 10 In (A ² Sec)	Maximum Power Dissipation (W)	Agency Approvals							
									UL	CSA	CCC	S	D'E	PS E	CE	
5HF (P) 100-R	100mA	3.85	0.55	250	1A - 6.3A / 250V AC @ 1,500A	0.003	0.002	0.30	Y	Y	Y					Y
5HF (P) 125-R	125mA	2.52	0.48	250		0.005	0.004	0.36	Y	Y	Y					Y
5HF (P) 160-R	160mA	1.59	0.43	250		0.009	0.008	0.43	Y	Y	Y					Y
5HF (P) 200-R	200mA	1.22	0.40	250		0.016	0.014	0.52	Y	Y	Y					Y
5HF (P) 250-R	250mA	0.90	0.38	250		0.028	0.026	0.63	Y	Y	Y					Y
5HF (P) 315-R	315mA	0.67	0.37	250		0.05	0.05	0.76	Y	Y	Y					Y
5HF (P) 400-R	400mA	0.46	0.34	250		0.09	0.08	0.92	Y	Y	Y					Y
5HF (P) 500-R	500mA	0.34	0.32	250		0.16	0.15	1.11	Y	Y	Y					Y
5HF (P) 630-R	630mA	0.225	0.29	250		0.29	0.27	1.35	Y	Y	Y					Y
5HF (P) 800-R	800mA	0.192	0.23	250		0.36	0.35	0.58	Y	Y	Y					Y
5HF (P) 1-R	1A	0.139	0.19	250		0.65	0.63	0.69	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 1.25-R	1.25A	0.097	0.17	250		1.2	1.2	0.81	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 1.6-R	1.6A	0.072	0.16	250		2.1	2.1	0.96	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 2-R	2A	0.052	0.14	250		3.8	3.8	1.1	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 2.5-R	2.5A	0.039	0.13	250		6.8	6.8	1.3	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 3.15-R	3.15A	0.029	0.13	250		12	12	1.6	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 4-R	4A	0.022	0.13	250		22	22	1.9	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 5-R	5A	0.016	0.13	250		39	40	2.2	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 6.3-R	6.3A	0.011	0.10	250		70	73	2.7	Y	Y	Y	Y	Y	Y	Y	Y
5HF (P) 8-R	8A	0.010	0.11	250	8A - 12A / 250V AC @ 1,500A	126	131	3.1	Y	Y	Y	Y			Y	Y
5HF (P) 10-R	10A	0.007	0.10	250		227	238	3.7	Y	Y	Y	Y			Y	Y
5HF (P) 12-R	12A	0.005	0.09	250		408	430	4.4				Y			Y	Y

Consult manufacturer for other ratings

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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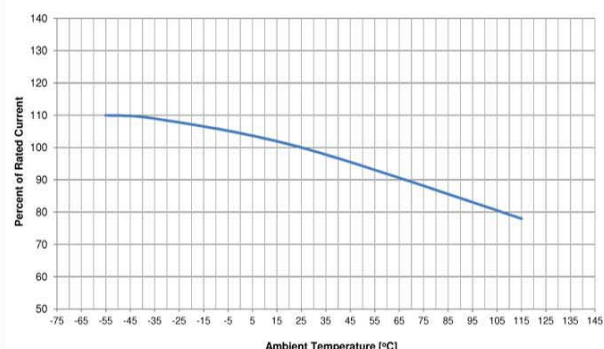
5 x 20mm Ceramic Tube
RoHS 6 Compliant



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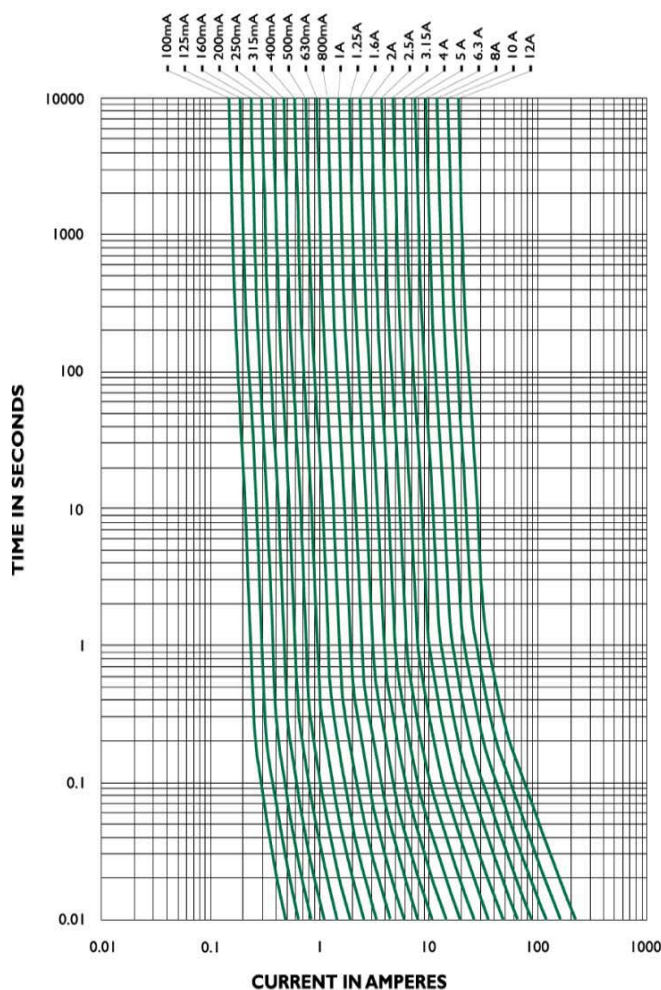
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Temperature Derating Curve



Average Time Current Curve

5HF / 5HFP - TIME CURRENT CHARACTERISTIC CURVE



Environmental Specifications

Shock Resistance	MIL-STD-202G, Method 213B, Test Condition I (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

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Physical Specifications

Materials	Body : Ceramic
	Cap : Nickel Plated Brass Caps
	Leads: Matte Tin Plated Copper
Marking	On Fuse:
	"bel", "F", "Current Rating", "H", "250V",
	"Appropriate Safety Logos", "✓" (RoHS 6 compliant)
	On label:
	"bel", "5HF", or "5HFP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "M", "CE" (China RoHS compliant).

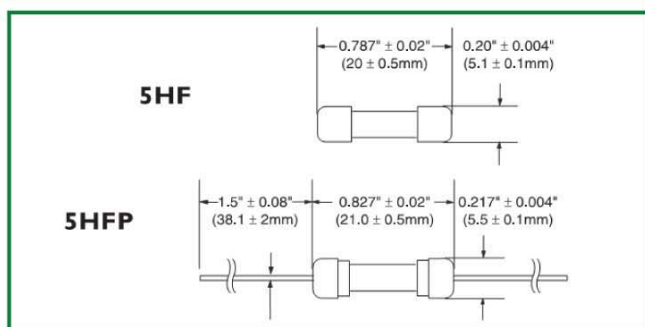
Fuse FGNO Explanation

06XX-[XXXX]-XX, [XXXX]=Ampere Rating

Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/32	0.032	32	0032
1/25	.040	40	0040
1/20	.050	50	0050
1/16	.063	63	0063
8/100	.080	80	0080
1/10	.100	100	0100
1/8	.125	125	0125
15/100	.150	150	0150
	.160	160	0160
2/10	.200	200	0200
1/4	.250	250	0250
3/10	.300	300	0300
	.315	315	0315
3/8	.375	375	0375
4/10	.400	400	0400
1/2	.500	500	0500
6/10	.600	600	0600
	.630	630	0630
7/10	.700	700	0700
3/4	.750	750	0750
8/10	.800	800	0800

Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/4	1.25	1.25	1250
1-1/2	1.50	1.5	1500
	1.60	1.6	1600
	2.0	2	2000
2-1/4	2.25	2.25	2250
2-1/2	2.5	2.5	2500
	3.0	3	3000
	3.15	3.15	3150
3-1/2	3.5	3.5	3500
	4.0	4	4000
	5.0	5	5000
	6.0	6	6000
	6.3	6.3	6300
	7.0	7	7000
7-1/2	7.5	7.5	7500
	8.0	8	8000
		10	9100
		12	9120
		15	9150
		20	9200
		25	9250
		30	9300

Mechanical Dimensions



Ordering Information

0650 R XXXX - X X

FUSE TYPE 0650

R = RoHS Compliant

AMPERE RATING Refer to fuse FGNO explanation table

SAFETY STANDARD CODE 1 = IEC, 250V,

QUANTITY & PACKAGING CODE 2 = Cartridge version, 1K /box
3 = Pigtail Version, 1K bulk pack.
6 = Pigtail version, Tape and Reel, 1500/reel.

* Ratings 6.3A and less have 0.032" diameter lead;
Ratings 8A and above have 0.040" diameter lead.

Specifications subject to change without notice

Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	12	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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