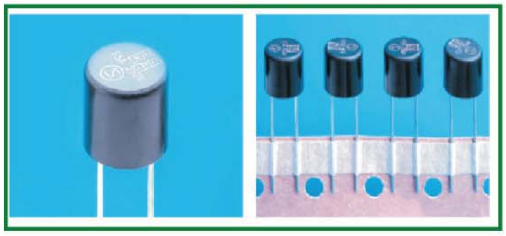
MRF Apr2013D

Type MRF

RoHS 6 Compliant

Fast Acting Radial Lead Micro Fuse Series

HF Pb **MRF Series**



Description

Sub-miniature,fast-acting type, 250V rated fuses designed, approved and complied with IEC 60127-3, standard sheet 3.

Electrical Characteristics (IEC-127-3 STANDARD SHEET 3)

Rated Current	1.5 In	2.1 In	2.75 In		4 In		10 In
	MIN	MAX	MIN	MAX	MIN	MAX	MAX
50mA to 6.3A inclusive	1 hr.	30 min.	10 ms	3 sec	3 ms	300 ms	20 ms

In clause 9.2,the test voltage for MRF ratings from 80mA to 6.3A is 64VDC.

Features

- **Fast Acting (250V AC @50A)**
- **Meet IEC standard 60127-3,Sheet 3**
- **Wide operating temperature range**
- **Bulk and Tape & Reel packing available**
- **RoHS6 compliant**
- **Halogen Free**
- **Leadfree**

Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE NUMBER	AMPERE RANGE / VOLT @ I.R.ABILITY
	1026142;1026141;1026139;1111865	50mA - 5A / 250V AC @ 35A or 10 In whichever is greater
	40017420;40028500	
	LR39772	50mA - 6.3A / 250V AC @ 50A
	E20624	50mA - 6.3A / 350V AC @100A
	JET 1037-31007-1001	1A - 5A / 250V AC @100A
CE		50mA - 6.3A / 350V AC @100A

Specifications Subject to change without notice.

Applications

Provide individual protection for components or internal circuits.

- **Power Supplies**
- **Battery chargers**
- **Consumer Electronics**
- **Adapter**
- **Industrial Controllers**

LEAD FREE = Pb

HALOGEN FREE = HF

Physical Specifications

Materials	Base and Cover : Black thermoplastic,UL 94-V0
	Pins: 100% Matte Tin Plated Copper Alloy
Marking	On Fuse:
	"bel" , "F ," Current Rating", "250V", & "Appropriate Safety Logos"
	On label:
	"bel" , "MRF","Current Rating","Voltage Rating","Interrupting Rating", "Appropriate Safety Logos" and " ","(China RoHS compliant).

Bel Fuse Inc. 206 Van Vorst Street, Jersey City, NJ 07302 • Tel: 201-432-0463 • Fax: 201-432-9542 • E-Mail: belfuse@belf.com
Website: www.belfuse.com

Type MRF

Fast Acting Radial Lead Micro Fuse Series

RoHS 6 Compliant

HF Pb

bel

MRF Apr2013D

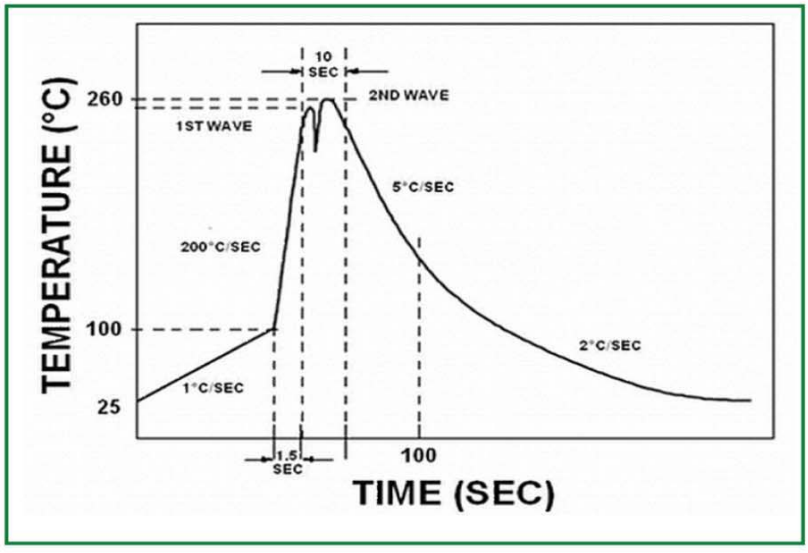
Electrical Specifications

Catalog Number	Ampere Rating	Typical Cold Resistance (ohm)	Volt-drop @100% In (Volt) Max.	Voltage Rating (V)	Interrupting Rating	Melting I2T <10 m Sec (A2 Sec)	Melting I2T @ 10 In (A2 Sec)	Maximum Power Dissipation (W)	Agency Approvals					
									cULus	SP	S	VDE	PSE	CE
MRF 50	50mA	11.9	0.73	250	(50mA - 6.3A / 35A @ 250VAC or 10 In) whichever is greater) (50mA - 6.3A / 350V AC @100A)	0.001	0.001	0.09	Y	Y	Y	Y		Y
MRF 63	63mA	8.5	0.66	250		0.001	0.001	0.10	Y	Y	Y	Y		Y
MRF 80	80mA	6.3	0.64	250		0.002	0.002	0.11	Y	Y	Y	Y		Y
MRF 100	100mA	4.0	0.49	250		0.003	0.003	0.11	Y	Y	Y	Y		Y
MRF 125	125mA	3.1	0.50	250		0.007	0.007	0.13	Y	Y	Y	Y		Y
MRF 160	160mA	2.3	0.46	250		0.016	0.016	0.21	Y	Y	Y	Y		Y
MRF 200	200mA	1.7	0.41	250		0.027	0.027	0.19	Y	Y	Y	Y		Y
MRF 250	250mA	0.42	0.17	250		0.023	0.023	0.23	Y	Y	Y	Y		Y
MRF 315	315mA	0.29	0.15	250		0.044	0.044	0.22	Y	Y	Y	Y		Y
MRF 400	400mA	0.21	0.14	250		0.073	0.072	0.28	Y	Y	Y	Y		Y
MRF 500	500mA	0.17	0.15	250		0.20	0.18	0.42	Y	Y	Y	Y		Y
MRF 630	630mA	0.10	0.08	250		0.15	0.14	0.16	Y	Y	Y	Y		Y
MRF 800	800mA	0.071	0.08	250		0.4	0.4	0.20	Y	Y	Y	Y		Y
MRF 1	1A	0.057	0.08	250		0.7	0.6	0.38	Y	Y	Y	Y	Y	Y
MRF 1.25	1.25A	0.047	0.081	250		1.3	1.2	0.69	Y	Y	Y	Y	Y	Y
MRF 1.6	1.6A	0.035	0.077	250		1.4	1.3	0.62	Y	Y	Y	Y	Y	Y
MRF 2	2A	0.028	0.075	250		2.1	2.0	0.72	Y	Y	Y	Y	Y	Y
MRF 2.5	2.5A	0.022	0.071	250		4	3	0.92	Y	Y	Y	Y	Y	Y
MRF 3.15	3.15A	0.016	0.064	250		6	4	0.82	Y	Y	Y	Y	Y	Y
MRF 4	4A	0.011	0.059	250		8	6	0.65	Y	Y	Y	Y	Y	Y
MRF 5	5A	0.010	0.056	250		15	11.8	0.91	Y	Y	Y	Y	Y	Y
MRF 6.3	6.3A	0.008	0.054	250		25	19.8	1.05	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 Tp	260°C
Time within +0 °C / -5°C of actual peak temperature	10 seconds
Ramp-down rate	5 °C / second max.

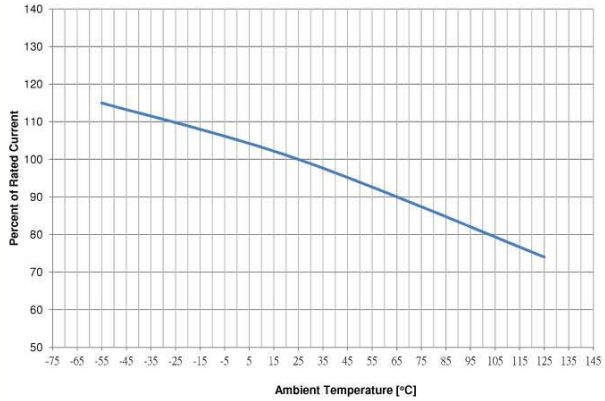


Type MRF
Fast Acting Radial Lead Fuse Series

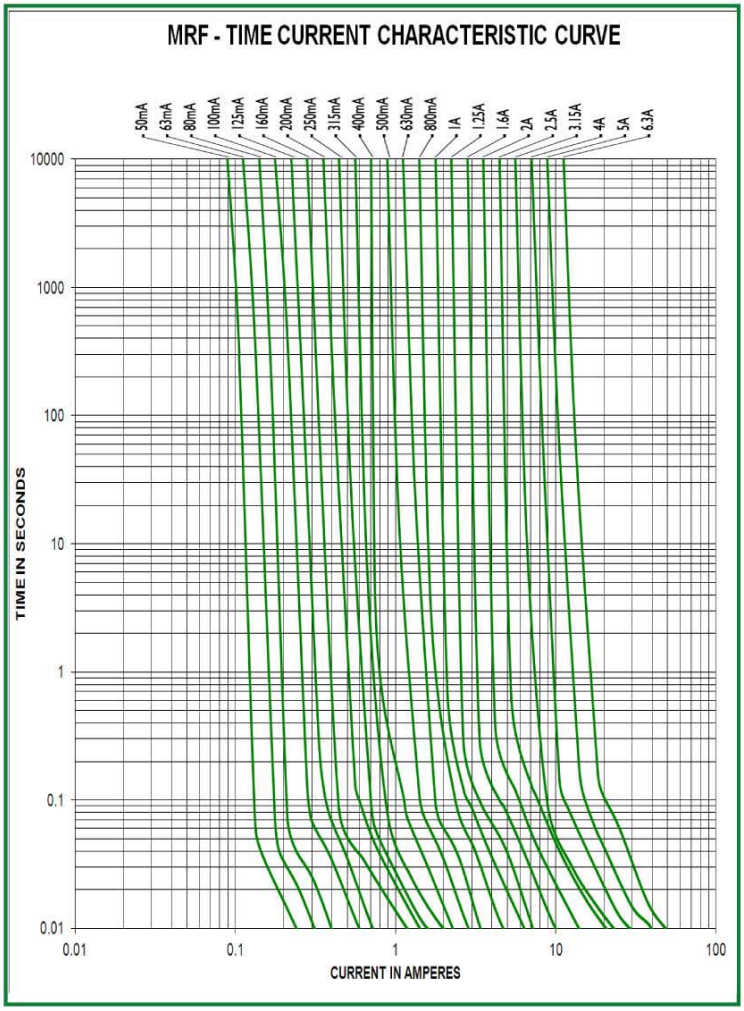
RoHS 6 Compliant

MRF Apr2013C

Temperature Derating Curve



Average Time Current 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 X 3 axis / no load).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test condition B (48 hrs).
Solderability	MIL-STD-202G, Method 208H
Resistance to solder Heat	MIL-STD-202G Method 210F,Test Condition C.Top Side,(260°C,20 sec)
Moisture Resistance	MIL-STD-202G, Method 202G, Method 106G
Operating Temperature	-55°C to +125°C

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Type MRF

Fast Acting Radial Lead Micro Fuse Series

RoHS 6 Compliant

HF Pb

MRF Apr2013D

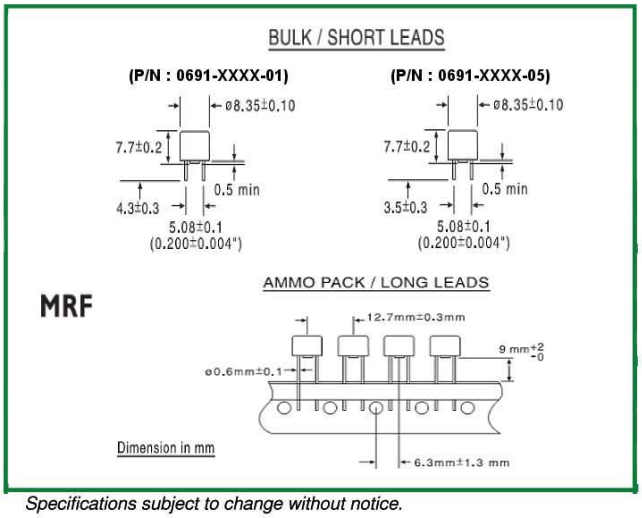
Fuse FGNO Explanation

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

0691 XXXX – XX

FUSE TYPE
0691

AMPERE RATING
Refer to fuse FGNO explanation table

QUANTITY & PACKAGING CODE
01 = 4.3mm +/- 0.3mm leads lengthLead,1000 pcs / Box, Bulk
02 = 1000 pcs / Box, Ammo Pack
05 = 3.5mm +/- 0.3mm leads lengthLead,1000 pcs / Box, Bulk

Specifications subject to change without notice.

Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code
Bulk / bag, 1000 / box	N/A	1000	01 , 05
12.7 mm pitch, On Tape / box	IEC-286-2	1000	02

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