

Type 5MF / 5MFP

Fast Blow Fuse Series

HF (Pb) 5MF/5MFP Series, 5x20mm Glass Tube Fast Blow Fuse

RoHS 6 Compliant

Description

5x20mm Fast Blow, glass tube body cartridge fuse designed, approved and complied with UL and CSA standard 248-14.

Features

- Meet UL and CSA standard 248-14
- 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 : Glass
	Cap : Nickel Plated Brass Caps
	Leads : Matte Tin Plated Copper
Marking	On Fuse :
	"bel", "5MF", "Current Rating", "Voltage Rating",
	"Appropriate Safety Logos", "✓" (RoHS 6 compliant)
	On Label :
	"bel", "5MF" or "5MFP", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "☑", "Ⓢ" (China RoHS compliant).

Electrical Characteristics (UL / CSA STD.248-14)

Testing Current	Blow Time	
	Minimum	Maximum
100%	4 Hrs.	N/A
135%	N/A	1 Hr
200%	N/A	5 sec

Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE NUMBER	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
UL US	E20624	80mA - 3A / 250V AC 3.15A - 8A / 125V AC	80mA - 3A / 250V AC@ 200A 80mA - 8A / 125V AC@ 10,000A
SP	LR39772		1A - 5A / 125V AC @ 500A
PSE	JET1037-31003-1010 JET1037-31003-1011 JET1037-31003-1007		>5A - 15A / 125V AC@ 300A

* 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 A (After Opening) 10, 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 ² T <10 mSec (A ² Sec)	Melting I ² T @10 In (A ² Sec)	Maximum Power Dissipation (W)	Agency Approvals		
								UL	CS	PS E
5MF(P) 80-R	80mA	42.5	5.10	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.0004	0.0004	0.32	Y	Y	
5MF(P) 100-R	100mA	6.95	2.63		0.0009	0.0008	0.35	Y	Y	
5MF(P) 125-R	125mA	6.92	3.65		0.0017	0.0015	0.60	Y	Y	
5MF(P) 200-R	200mA	2.97	2.58		0.007	0.006	0.72	Y	Y	
5MF(P) 250-R	250mA	1.47	0.99		0.016	0.014	0.25	Y	Y	
5MF(P) 300-R	300mA	1.18	1.07		0.020	0.019	0.39	Y	Y	
5MF(P) 350-R	350mA	0.92	1.06		0.038	0.032	0.36	Y	Y	
5MF(P) 400-R	400mA	0.65	0.74		0.080	0.084	0.20	Y	Y	
5MF(P) 500-R	500mA	0.49	0.78		0.122	0.118	0.33	Y	Y	
5MF(P) 600-R	600mA	0.394	0.77		0.195	0.195	0.44	Y	Y	
5MF(P) 700-R	700mA	0.305	0.73		0.265	0.267	0.65	Y	Y	
5MF(P) 800-R	800mA	0.243	0.61		0.40	0.40	0.54	Y	Y	
5MF(P) 1-R	1A	0.118	0.22		0.88	0.85	0.26	Y	Y	Y
5MF(P) 1.25-R	1.25A	0.085	0.21		1.5	1.5	0.31	Y	Y	Y
5MF(P) 1.5-R	1.5A	0.067	0.17		2.6	2.6	0.36	Y	Y	Y
5MF(P) 2-R	2A	0.046	0.16		4.4	4.5	0.44	Y	Y	Y
5MF(P) 2.5-R	2.5A	0.037	0.16		7.6	7.8	0.52	Y	Y	Y
5MF(P) 3-R	3A	0.030	0.17		13	14	0.59	Y	Y	Y
5MF(P) 3.5-R	3.5A	0.025	0.15		17	18	0.65	Y	Y	Y
5MF(P) 4-R	4A	0.019	0.14		22	24	0.72	Y	Y	Y
5MF(P) 5-R	5A	0.016	0.15		38	41	0.84	Y	Y	Y
5MF(P) 6-R	6A	0.012	0.13		65	72	0.96	Y	Y	Y
5MF(P) 7-R	7A	0.011	0.13		88	97	1.10	Y	Y	Y
5MF(P) 8-R	8A	0.009	0.13		113	126	1.23	Y	Y	Y

Consult manufacturer for other ratings

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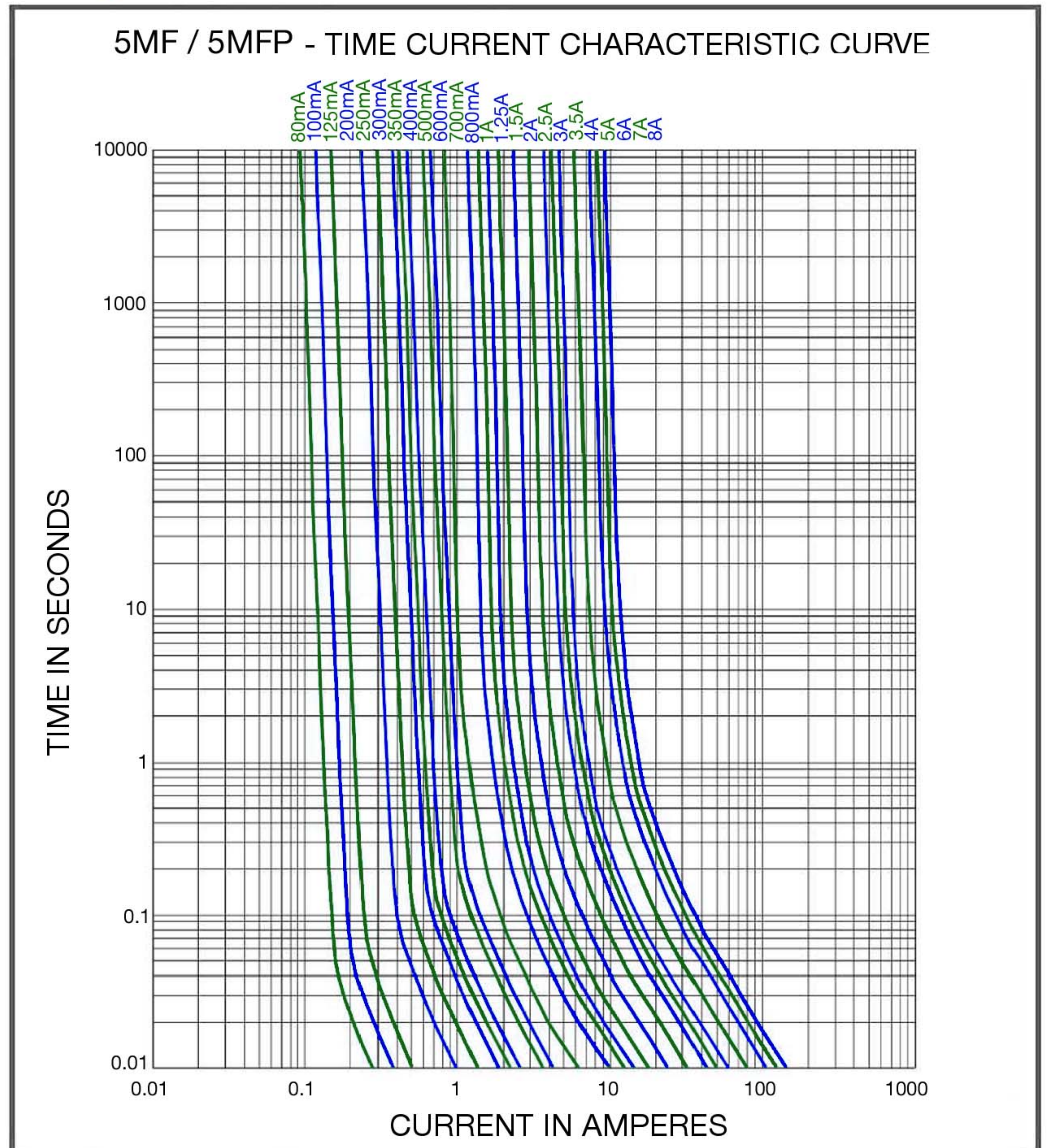
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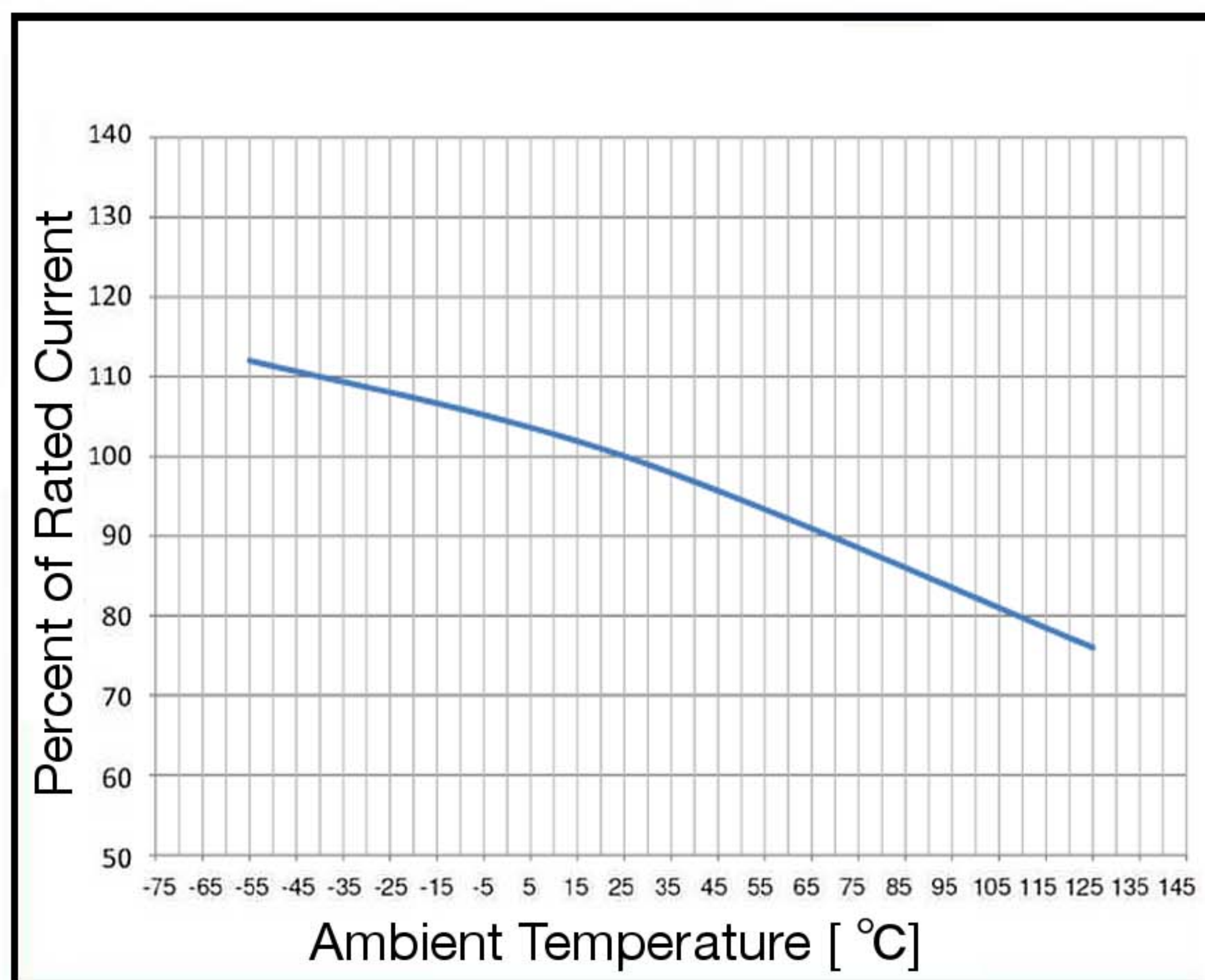
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Average Time Current Curve

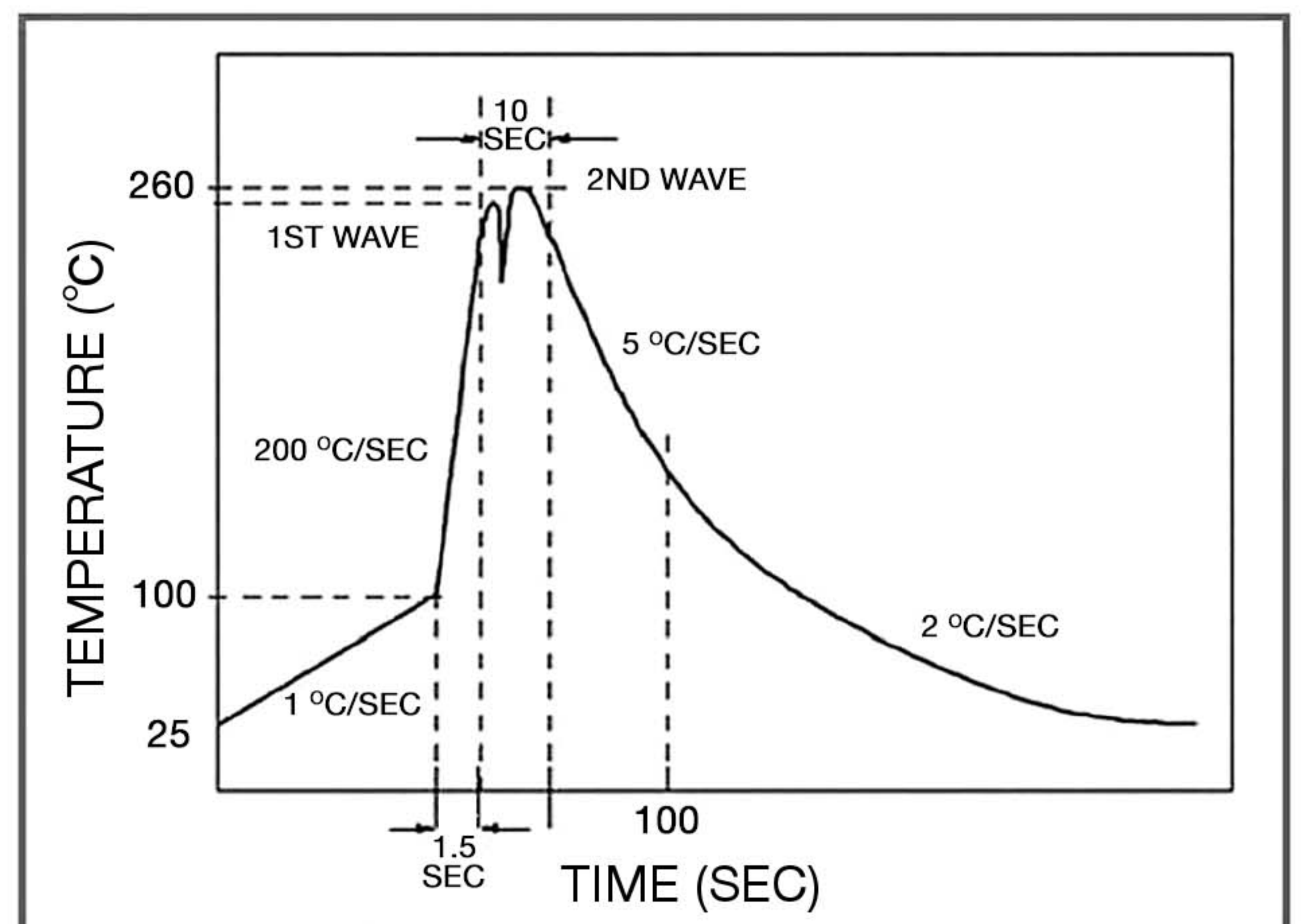


Temperature Derating Curve



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 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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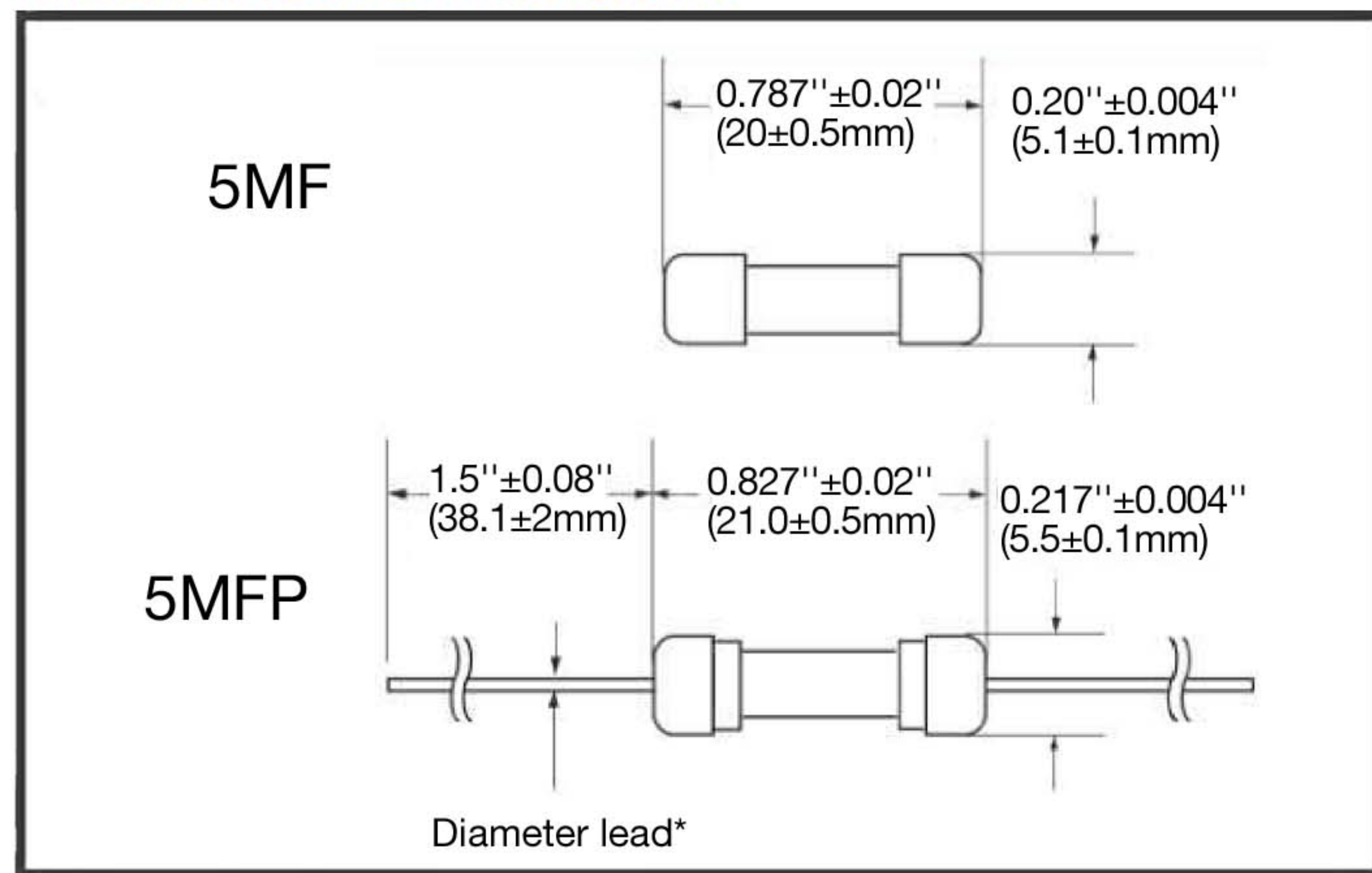
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Fuse FGNO Explanation 06XX X [XXXX] X XX, [XXXX]=Ampere Rating

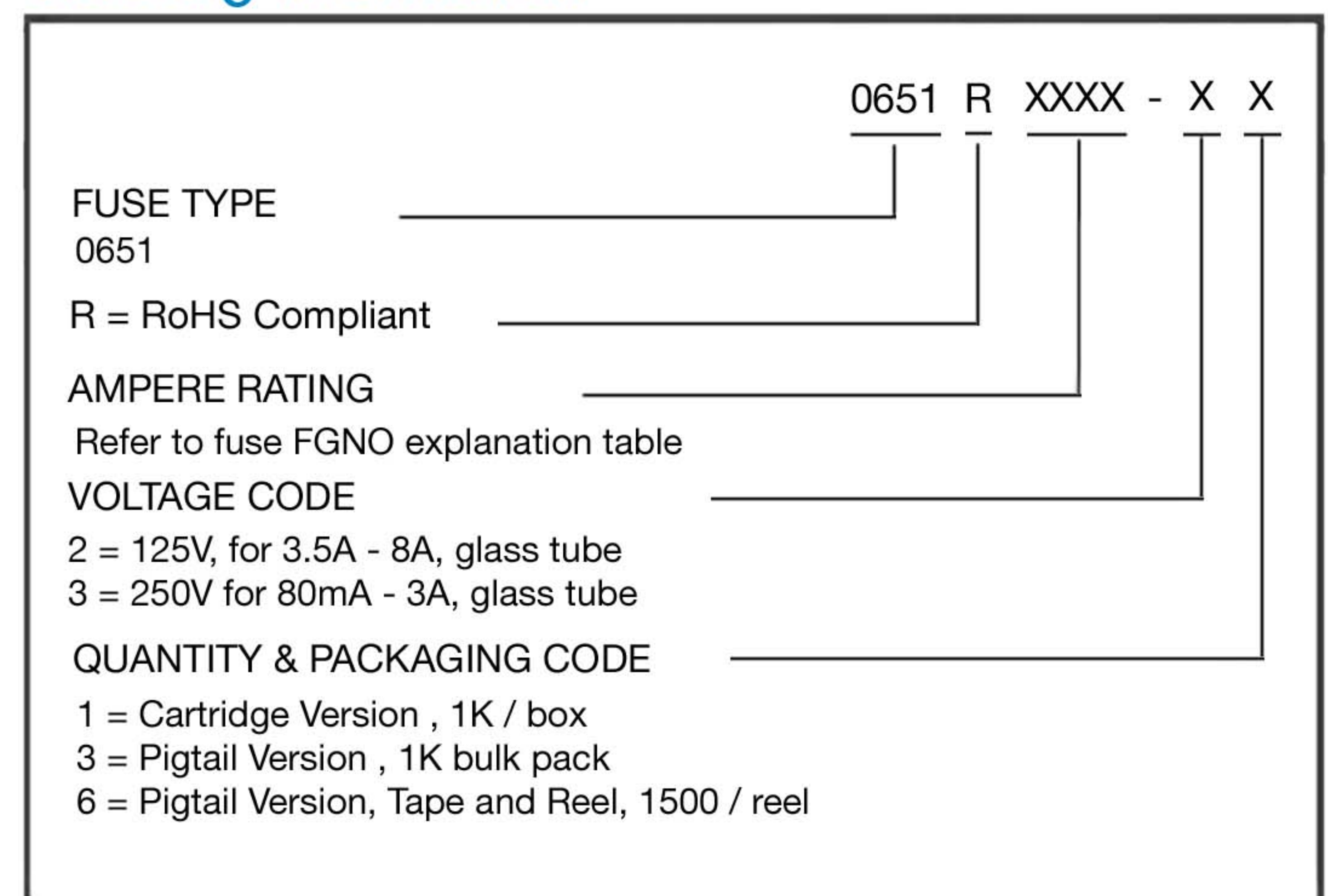
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]	Fraction	Decimal	Amps	Bel FGNO[XXXX]
1/32	0.032	32	0032		1.0	1	1000
1/25	.040	40	0040	1-1/4	1.25	1.25	1250
1/20	.050	50	0050	1-1/2	1.50	1.5	1500
1/16	.063	63	0063		1.60	1.6	1600
8/100	.080	80	0080		2.0	2	2000
1/10	.100	100	0100	2-1/4	2.25	2.25	2250
1/8	.125	125	0125	2-1/2	2.5	2.5	2500
15/100	.150	150	0150		3.0	3	3000
	.160	160	0160		3.15	3.15	3150
2/10	.200	200	0200	3-1/2	3.5	3.5	3500
1/4	.250	250	0250		4.0	4	4000
3/10	.300	300	0300		5.0	5	5000
	.315	315	0315		6.0	6	6000
3/8	.375	375	0375		6.3	6.3	6300
4/10	.400	400	0400		7.0	7	7000
1/2	.500	500	0500	7-1/2	7.5	7.5	7500
6/10	.600	600	0600		8.0	8	8000
	.630	630	0630			10	9100
7/10	.700	700	0700			12	9120
3/4	.750	750	0750			15	9150
8/10	.800	800	0800			20	9200
						25	9250
						30	9300

Mechanical Dimensions



*Ratings 5A and less have 0.032" diameter lead;
*Ratings 6A and above have 0.040" diameter lead.

Ordering Information



Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	31/21	N/A
Bulk (Pigtail Type)	N/A	1000	33/23	N/A
Tape & Reel, 10mm Pitch	EIA-296-F	1500	73/26	63

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