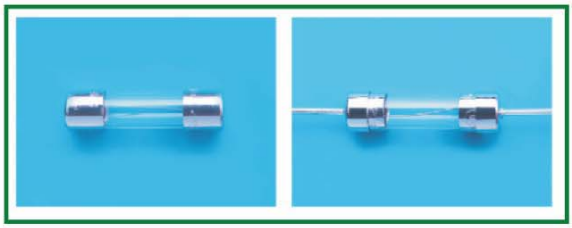
RoHS

5TT May2013D

Type 5TT / 5TTP
Slow Blow Fuse Series

5 x 20mm Glass / Ceramic Tube
RoHS 6 Compliant

HF Pb **5TT / 5TTP Series, 5 x 20mm Slow Blow Fuse**



Description

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

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

Testing current	Blow Time		Amp range
	Minimum	Maximum	
100%	4 Hrs.	N/A	80mA - 10A
135%	N/A	1 Hr	80mA - 10A
200%	5 sec	30 sec	80mA - 3A
200%	3 sec	30 sec	3.1A - 10A

Features

- **Meet UL and CSA standard 248-14**
- **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
c UL us	E20624	80mA -3A / 250V AC @100A 500mA - 8A / 125V AC @10,000A
SP	LR39772	
c TÜV us	E20624	10A / 125V AC @1,000A
SP	LR39772	
PS E	JET 1037-31003-1010 JET 1037-31003-1011	1A - 5A / 125V AC @500A
	JET 1037-31003-1007	>5A - 15A / 125V AC @300A
CE		80mA -10A / 250V AC @100A 500mA - 8A / 125V AC @10,000A 10A / 125V AC @1,000A

Specifications subject to change without notice

Applications

Provide individual protection for components or internal circuits.

- **Power Supplies**
- **Battery charger**
- **Monitor**
- **Adapter**

LEAD FREE = Pb

HALOGEN FREE = HF

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bel

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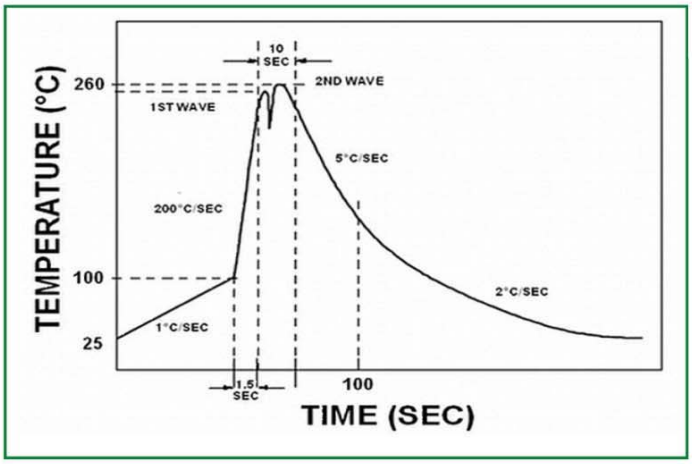
Electrical Specifications

Catalog Number	Ampere Rating	Typical Cold Resistance (ohm)	Volt-drop @100% In (Volt) Max.	Voltage Rating (V)	Interrupting Rating	Melting I2T <10 m Sec (A2 Sec)	Melting I2T @ 10 In (A2 Sec)	Maximum Power Dissipation (W)	Agency Approvals					
									c UL us	c RU us			PS E	CE
5TT (P) 80-R	80mA	29	3.10	250	80mA-3A/250V AC @100A 80mA-8A/125V AC @10,000A	0.091	0.096	0.42	Y			Y		Y
5TT (P) 100-R	100mA	18.8	2.52	250		0.137	0.146	0.45	Y			Y		Y
5TT (P) 125-R	125mA	12.6	2.22	250		0.208	0.221	0.48	Y			Y		Y
5TT (P) 160-R	160mA	7.6	1.88	250		0.314	0.337	0.51	Y			Y		Y
5TT (P) 200-R	200mA	4.98	1.45	250		0.476	0.512	0.55	Y			Y		Y
5TT (P) 250-R	250mA	3.39	1.25	250		0.719	0.778	0.58	Y			Y		Y
5TT (P) 300-R	300mA	2.13	0.97	250		0.885	0.959	0.60	Y			Y		Y
5TT (P) 400-R	400mA	1.33	0.83	250		1.65	1.80	0.66	Y			Y		Y
5TT (P) 500-R	500mA	0.865	0.67	250		2.5	2.7	0.70	Y			Y		Y
5TT (P) 600-R	600mA	0.679	0.64	250		3.8	4.2	0.75	Y			Y		Y
5TT (P) 700-R	700mA	0.465	0.49	250		4.6	5.1	0.78	Y			Y		Y
5TT (P) 750-R	750mA	0.438	0.48	250		5.3	5.8	0.79	Y			Y		Y
5TT (P) 1-R	1A	0.258	0.40	250		8.6	9.6	0.85	Y			Y	Y	Y
5TT (P) 1.25-R	1.25A	0.179	0.34	250		13	15	0.91	Y			Y	Y	Y
5TT (P) 1.5-R	1.5A	0.126	0.30	250		18	21	0.96	Y			Y	Y	Y
5TT (P) 1.6-R	1.6A	0.116	0.30	250		20	22	0.97	Y			Y	Y	Y
5TT (P) 2-R	2A	0.081	0.27	250		30	34	1.03	Y			Y	Y	Y
5TT (P) 2.5-R	2.5A	0.056	0.23	250		45	51	1.10	Y			Y	Y	Y
5TT (P) 3-R	3A	0.043	0.21	250		56	63	1.13	Y			Y	Y	Y
5TT (P) 3.15-R	3.15A	0.040	0.21	125		68	78	1.17				Y	Y	Y
5TT (P) 4-R	4A	0.029	0.19	125		103	119	1.25				Y	Y	Y
5TT (P) 5-R	5A	0.020	0.17	125		157	180	1.33				Y	Y	Y
5TT (P) 6-R	6A	0.015	0.15	125		218	317	1.23				Y	Y	Y
5TT (P) 6.3-R	6.3A	0.014	0.12	125		230	345	1.25				Y	Y	Y
5TT (P) 7-R	7A	0.012	0.13	125		295	459	1.37				Y	Y	Y
5TT (P) 8-R	8A	0.011	0.13	125		319	472	1.31				Y	Y	Y
5TT (P) 10-R	10A	0.008	0.13	125	125V AC @10,000A	467	703	1.40		Y	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.



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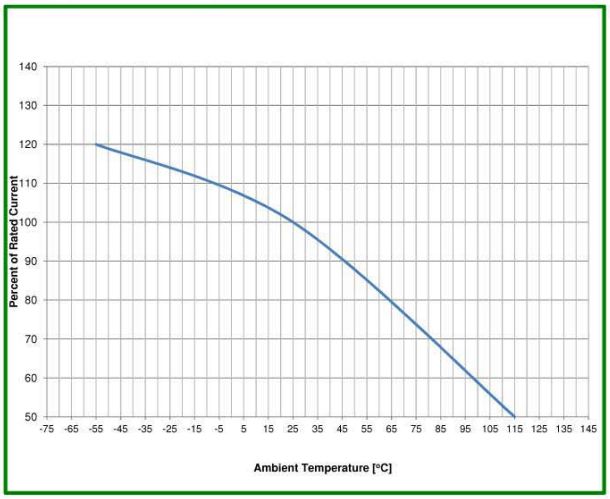
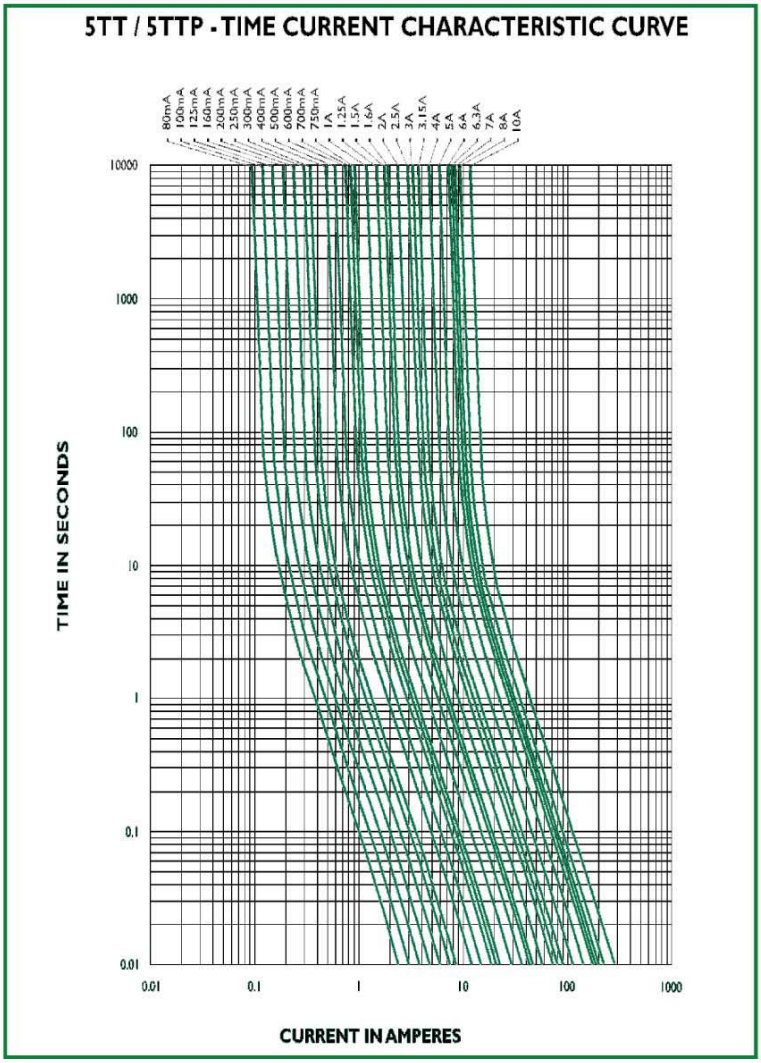
Temperature Derating Curve



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, 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

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5 x 20mm Glass / Ceramic Tube
RoHS 6 Compliant

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Physical Specifications

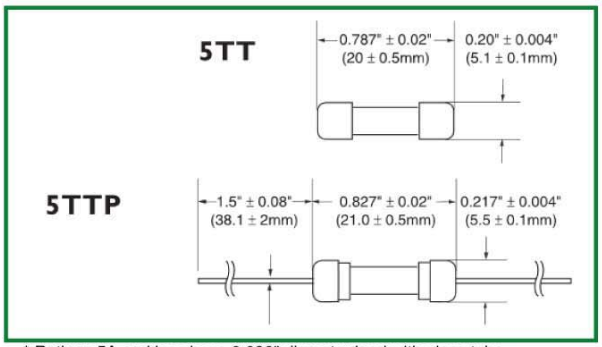
Materials	Body : Glass or Ceramic (see info below)
	Cap : Nickel Plated Brass Caps
	Leads: Matte Tin Plated Copper
Marking	On Fuse:
	"bel" , "5TT" ," Current Rating","Voltage Rating",
	"Appropriate Safety Logos"," ✔ "(RoHS 6 compliant)
	On label:
	"bel" , "5TT", or "5TTP","Current Rating","Voltage Rating","Interrupting Rating", "Appropriate Safety Logos" and " "," "(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

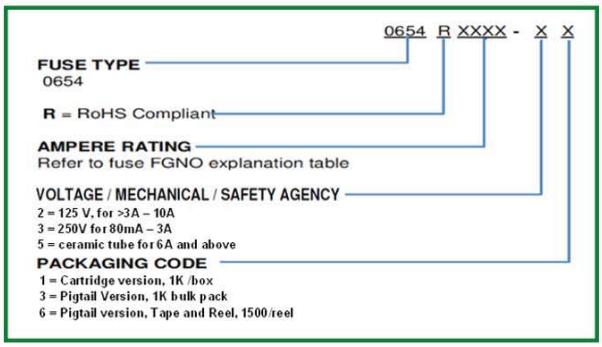
Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/4	1.25	1.25	1250
1-1/2	1.50	1.5	1500
	1.60	1.6	1600
	2.0	2	2000
2-1/4	2.25	2.25	2250
2-1/2	2.5	2.5	2500
	3.0	3	3000
	3.15	3.15	3150
3-1/2	3.5	3.5	3500
	4.0	4	4000
	5.0	5	5000
	6.0	6	6000
	6.3	6.3	6300
	7.0	7	7000
7-1/2	7.5	7.5	7500
	8.0	8	8000
		10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

Mechanical Dimensions



* Ratings 5A and less have 0.032" diameter lead with glass tube
Ratings 6A and above have 0.040" diameter lead with ceramic tube

Ordering Information



Specifications subject to change without notice

Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	33 / 21 / 51	N/A
Bulk (Pigtail Type)	N/A	1000	33 / 23 / 53	N/A
Tape & Reel, 10 mm Pitch	EIA-296-F	1500	36 / 26 / 56	63

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