



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Type 0678D

Square Ceramic Surface Mount Fast Blow Fuse

HF 0678D Series - 3912 Size

RoHS 2 Compliant

Features

- Fast blow
- Surface mount high breaking capacity (350V AC/125V DC)
- Current rating from 500mA to 5A
- Wide operating temperature range from -55 °C to 125 °C
- Tape & Reel for auto-insert SMD process
- Compatible with 260 °C, IR Pb-free solder process
- RoHS compliant with exemption 7a
- Halogen Free, (MSL = 1)

Applications

- Voltage regulator module
- PC server
- Office electronic equipment
- Industrial equipment
- Medical equipment
- POE, POE+
- Power supply
- DC-DC Converter
- Mass Storage Systems

HALOGEN FREE = **HF**



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

Testing Current	Blow Time	
	Minimum	Maximum
100%	4 Hrs.	N/A
200%	N/A	60 Sec

Safety Agency Approvals

SAFETY AGENCY	SAFETY AGENCY CERTIFICATE	VOLTAGE RATING (V)	AMPERE RANGE / VOLT @ I.R. ABILITY*
	E20624	500mA - 1A / 350 VAC 250 VDC >1A - 5A / 350 VAC 125 VDC	500mA - 1A / 350V @ 100A AC 250V @ 100A DC 125V @ 2000A DC >1A - 5A / 350V @ 100A AC 125V @ 2000A DC

* I.R. = INTERRUPTING RATING = SHORT CIRCUIT RATING (AMPS)

Physical Specifications

Materials	Body : Ceramic
	Terminations : Silver Plated Caps
Marking	On Fuse :
	"Current Rating", "D" in green color. "bel" stamped in end caps.
	On Label :
	"bel", "0678D", "Current Rating", "Voltage Rating", "Interrupting Rating", " Appropriate Safety Logos" and , (China RoHS compliant).

Specifications subject to change without notice



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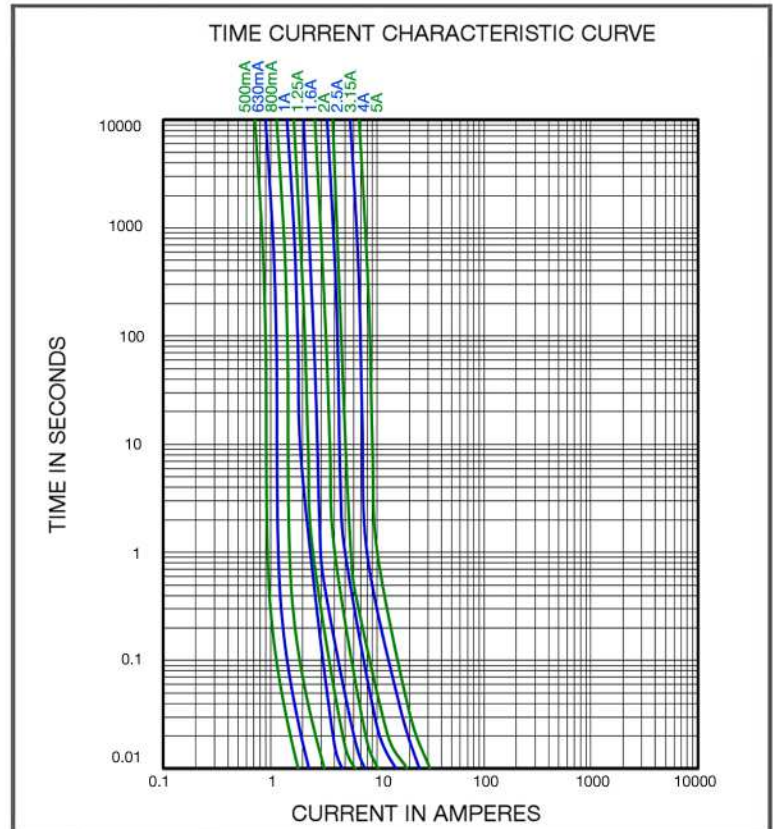
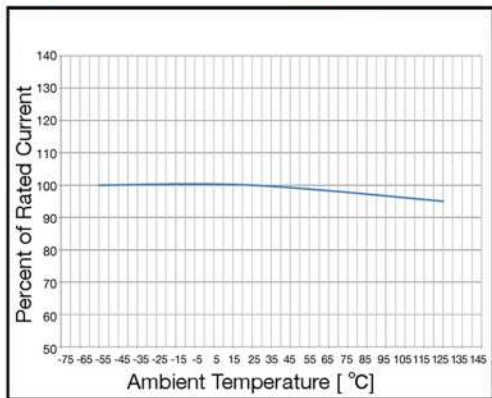
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Environmental Specifications

Temperature Derating Curve



Electrical Specifications

Part Number	Ampere Rating	Nominal Cold Resistance (ohm)	Volt-drop @100% In (Volt) Max	Voltage and Interrupting Ratings	Melting I ² T @10 In (A ² Sec)	Power Dissipation (W) Max	Agency Approvals
							
0678D0500-02	500mA	0.66	1.00	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	0.03	0.5	Y
0678D0630-02	630mA	0.54	1.30		0.06	0.8	Y
0678D0800-02	800mA	0.38	1.10		0.08	0.9	Y
0678D1000-02	1A	0.21	0.70		0.3	0.7	Y
0678D1250-02	1.25A	0.10	0.20		0.4	0.3	Y
0678D1600-02	1.6A	0.08	0.19		0.5	0.3	Y
0678D2000-02	2A	0.059	0.18		0.9	0.4	Y
0678D2500-02	2.5A	0.043	0.18		1.6	0.5	Y
0678D3150-02	3.15A	0.035	0.18		2.6	0.6	Y
0678D4000-02	4A	0.021	0.18		7.5	0.7	Y
0678D5000-02	5A	0.016	0.18		9.0	0.9	Y

Consult manufacturer for other ratings.

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Type 0678D

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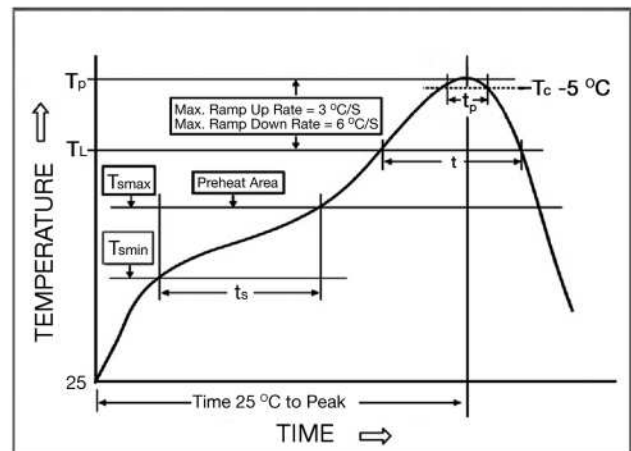
RoHS 2 Compliant

Environmental Specifications

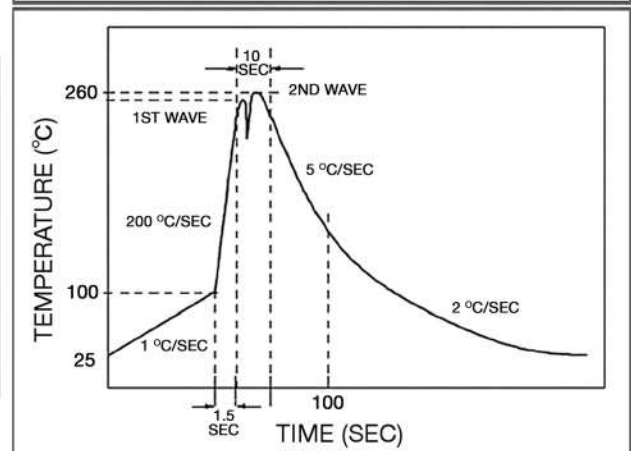
Shock Resistance	MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform)
Vibration Resistance	MIL-STD-202G, Method 201A(10-55 Hz,0.06 inch, total excursion).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test Condition B(48 hrs).
Insulation Resistance	MIL-STD-202G, 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 C.Top Side(260 °C, 20 sec) MIL-STD-202G, Method 210F, Test Condition D.Bottom Side(260 °C,10 sec)
Thermal Shock	MIL-STD-202G, Method 107G, Test Condition B (-65 °C to +125 °C).
Operating Temperature	-55 °C to +125 °C
Moisture Sensitivity Level	1 (According to IPC J-Std-020)

Soldering Parameters

IR Reflow Profile (IPC/JEDEC J-STD-020D)	
Preheat & Soak	
Temperature min (T _{min})	150 °C
Temperature max (T _{max})	200 °C
Time (T _{min} to T _{max}) (t _s)	60 -120 seconds
Average ramp-up rate (T _{max} to T _p)	3 °C/second max.
Liquidous temperature (T _L)	217 °C
Time at liquidous (t _l)	60 - 150 seconds
Peak temperature (T _p)	260 °C max
Time (t _p) within 5 °C of the specified classification temperature (T _c)	30 seconds
Average ramp-down rate (T _p to T _{max})	6 °C/second max.
Time 25 °C to peak temperature	8 minutes max.



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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Fuse FGNO Explanation

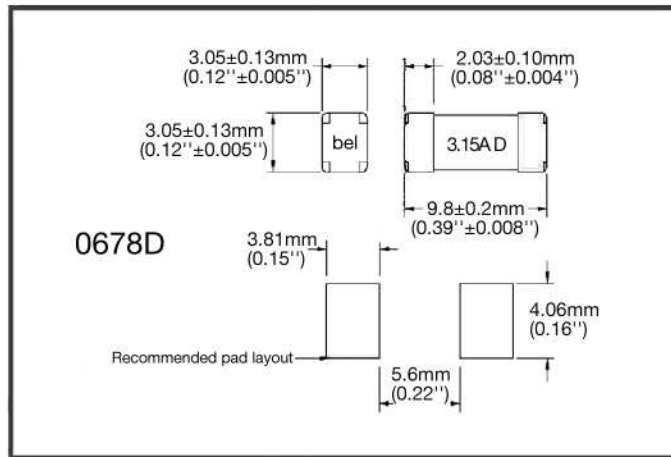
0678D [XXXX] - 02

0678D=0678D Series; [XXXX]=Ampere Rating; XX=See Ordering Information as below

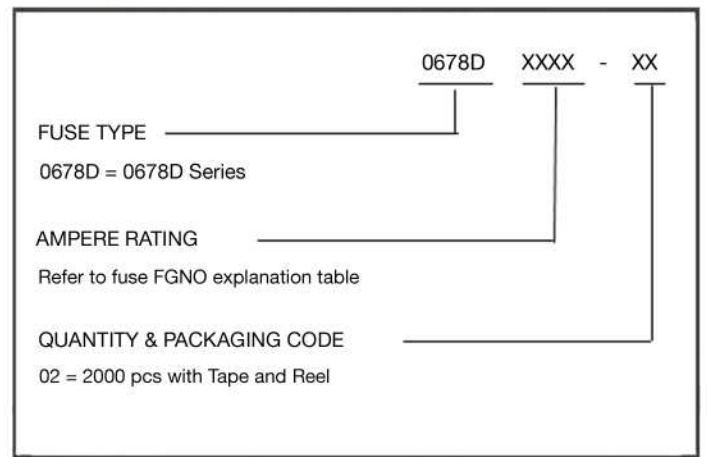
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/2	.500	500	0500
	.630	630	0630
8/10	.800	800	0800

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

Mechanical Dimensions



Ordering Information



Packaging

Packaging Tape & Reel	Packaging Specification	Quantity	Quantity & Packaging Code
16 mm wide tape with 13 inches Diameter reel	EIA Standard 481-E	2000	0678DXXXX-02

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