Type 0ABA

Surface Mount Fast Acting Chip Fuse

HF Pb 0ABA Series – 0402 Size RoHS Compliant

Features

- Fast Acting for excessive current, set the industry standard for performance, reliability and quality
- Small size, 0402 SMD
- Current rating from 200mA to 4A
- Wide operating temperature range from -55℃ to 125℃
- Tape and Reel for automatic SMD placement
- Compatible with 260℃ Pb-free IR and wave soldering process
- Excellent environmental integrity
- One time positive disconnect
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863 (MSL = 1)
- Halogen Free
- Lead Free
- Meets Bel automotive qualification*
  * - Largely based on internal AEC-Q test plan



UK CA CE cULus

AEC-Q Compliant

Applications

- Electronic device and Battery

LEAD FREE = Pb

HALOGEN FREE = HF

Electrical Characteristics (UL STD. 248-14)

Rated Current	1.0In	2.5In	3.0In
1A~4A	4 hours minimum	5 sec	
200mA~750mA	4 hours minimum		5 sec

Safety Agency Approvals

Safety Agency	Safety Agency Certificate	Voltage Rating (V)	Ampere Range / Volt @ I.R. ability*
cULus	E20624	200mA–4A/32V DC	200mA–4A/35A@ 32V DC
* DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)			

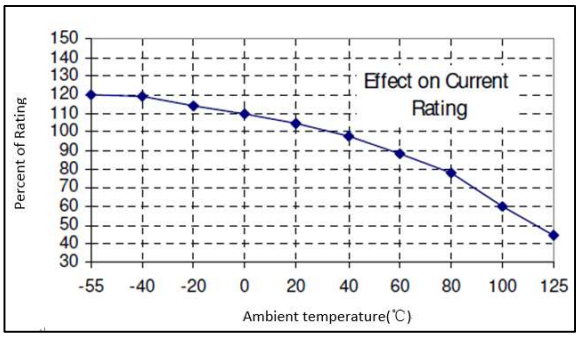
Physical Specifications

Materials	Body : Ceramic Substrate
	Terminations : Ag / Ni / Sn (100% Lead-free)
	Element Cover Coating : Lead-free Glass
Marking	On Fuse :
	None
	On Label :
	"bel", "0ABA", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and " RoHS ", " e "(China RoHS compliant).

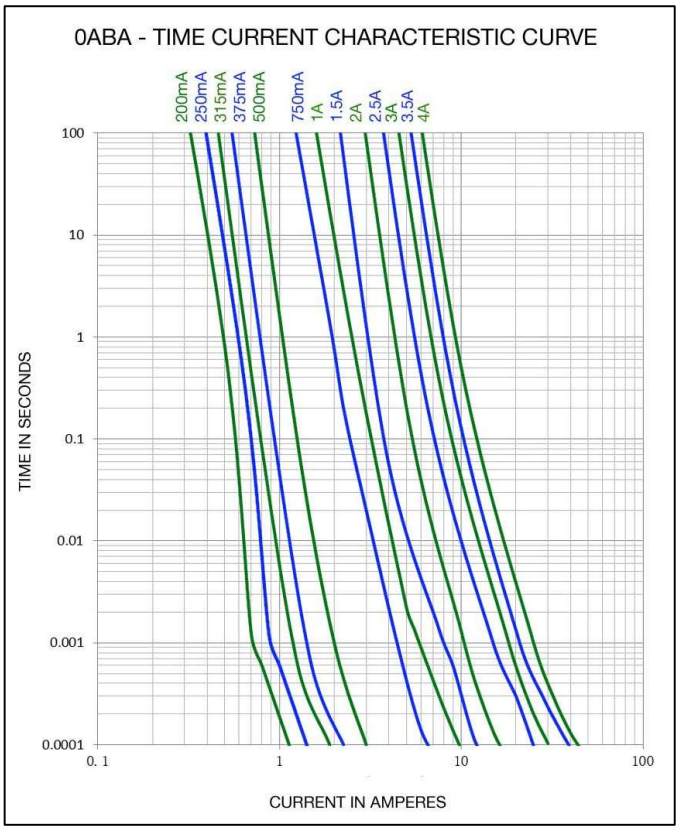
Temperature Derating Curve

Normal ambient temperature: 23±3℃

Operating temperature: -55 ~ 125℃, with proper correction factor applied



Average Time Current Curve



Electrical Specifications

Part Number	Ampere Rating	Resistance (ohms)** Typ.	Typical Melt I²t *** DC (A²s)	Voltage and Interrupting Ratings	Agency Approvals
					cULus
0ABA-0200-XX	200mA	1.75	0.0006	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	Y
0ABA-0250-XX	250mA	1.50	0.0010		Y
0ABA-0315-XX	315mA	1.00	0.0014		Y
0ABA-0375-XX	375mA	0.78	0.0018		Y
0ABA-0500-XX	500mA	0.50	0.0043		Y
0ABA-0750-XX	750mA	0.22	0.011		Y
0ABA-1000-XX	1A	0.13	0.04		Y
0ABA-1500-XX	1.5A	0.078	0.06		Y
0ABA-2000-XX	2A	0.040	0.13		Y
0ABA-2500-XX	2.5A	0.024	0.20		Y
0ABA-3000-XX	3A	0.018	0.33		Y
0ABA-3500-XX	3.5A	0.014	0.45		Y
0ABA-4000-XX	4A	0.011	0.60		Y

Consult manufacturer for other ratings

**DC Cold Resistances are measured at <10% of rated current in ambient temperature of 25℃.

***Typical Melting I^2t (Measured with a battery bank at rated DC voltage, Measured at 1ms open time, time constant of calibrated circuit less than 50 microseconds).

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Environmental Specifications

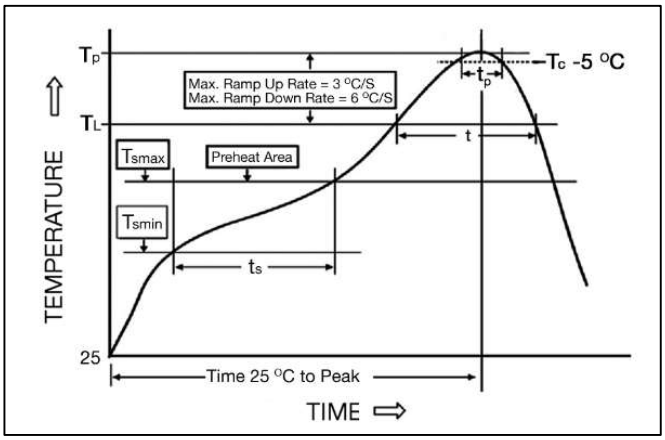
High temperature storage	MIL-STD-202 Method 108
Temperature cycling	JESD22 Method JA-104,Test Condition B
Biased humidity	MIL-STD-202 Method 103, 85C/85% RH with 10% operating power for 1000 hrs.
Operational life	MIL-STD-202 Method 108, Test Condition D
Resistance to solvents	MIL-STD-202 Method 215
Mechanical shock	MIL-STD-202 Method 213,Test Condition C
Vibration	MIL-STD-202G Method 204 Test condition D（10-2k HZ ,20G's for 20minutes）
Resistance to soldering heat	MIL-STD-202 Method 210,Test condition B
Thermal shock	MIL-STD-202 Method 107
Solderability	J-STD-002 Test B
Board flex(SMD)	AEC-Q200-005
Terminal strength	AEC-Q200-006
Electrical characterization	3 Temperature Electrical

Soldering Method

Wave solder	Reservoir temperature: 260℃
	Time in reservoir: 10 seconds maximum
Infrared reflow	Temperature: 260℃
	Time: 30 seconds maximum

Solder Reflow Profile

Profile Feature	
Preheat & Soak Temperature min (Tsmin) Temperature max (Tsmax) Time (Tsmin to Tsmax) (ts)	 150℃ 200℃ 60-120 seconds
Average ramp-up rate (Tsmax to Tp)	3℃/second max.
Liquidous temperature (TL) Time at liquidous (tL)	217℃ 60-150 seconds
Peak package body temperature (Tp)	260℃
Time (tp) within 5℃ of the specified classification temperature (Tc)	30 seconds
Average ramp-down rate (Tp to Tsmax)	6℃/second max.
Time 25℃ to peak temperature	8 minutes max.



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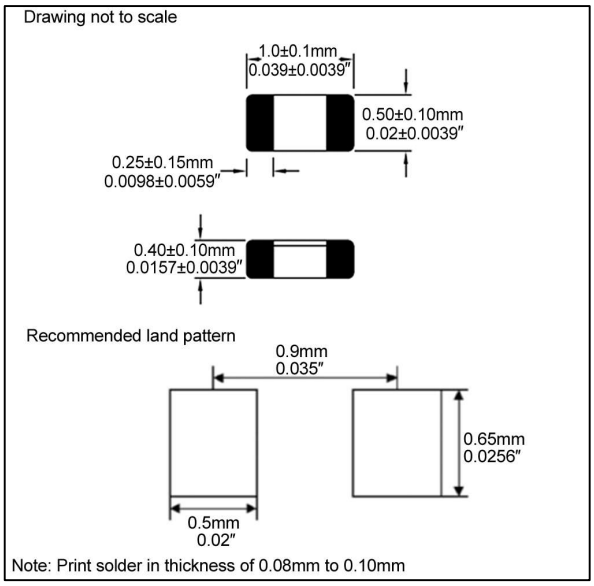
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Fuse FGNO Explanation
0ABA - [XXXX] X XX
0ABA=0ABA; [XXXX]=Ampere Rating; XX=See Ordering Information as below

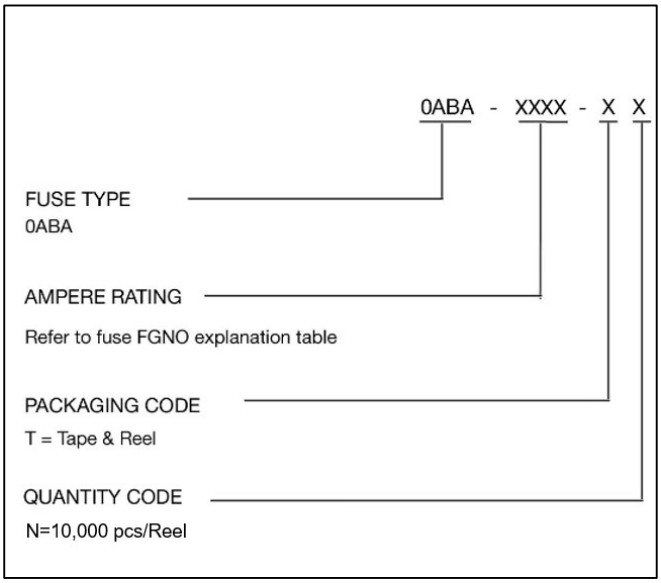
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/5	0.200	200	0200
1/4	.250	250	0250
	.315	315	0315
3/8	.375	375	0375
1/2	.500	500	0500
3/4	.750	750	0750

Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/2	1.50	1.5	1500
	2.0	2	2000
2-1/2	2.5	2.5	2500
	3.0	3	3000
3-1/2	3.5	3.5	3500
	4.0	4	4000

Mechanical Dimensions



Ordering Information



Packaging

Packaging Tape & Reel	Packaging Specification	Quantity	Packaging Code& Quantity Code
8 mm wide tape with 7 inches Diameter reel	EIA Standard 481-E	10,000 pcs	TN

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