

# Type 0ABA

## Surface Mount Fast Acting Chip Fuse

HF  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°C to 125°C
- Tape and Reel for automatic SMD placement
- Compatible with 260°C 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



### Applications

- Electronic device and Battery


LEAD FREE = 

HALOGEN FREE = 

### Electrical Characteristics (UL STD. 248-14)



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

### Safety Agency Approvals

Safety Agency	Safety Agency Certificate	Voltage Rating (V)	Ampere Range / Volt @ I.R. ability*
	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)

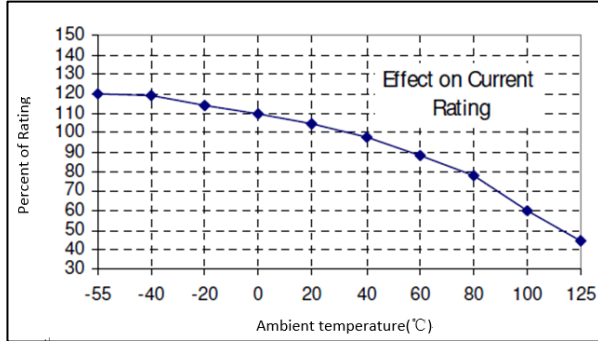
### Physical Specifications

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 "  ", "  " (China RoHS compliant).

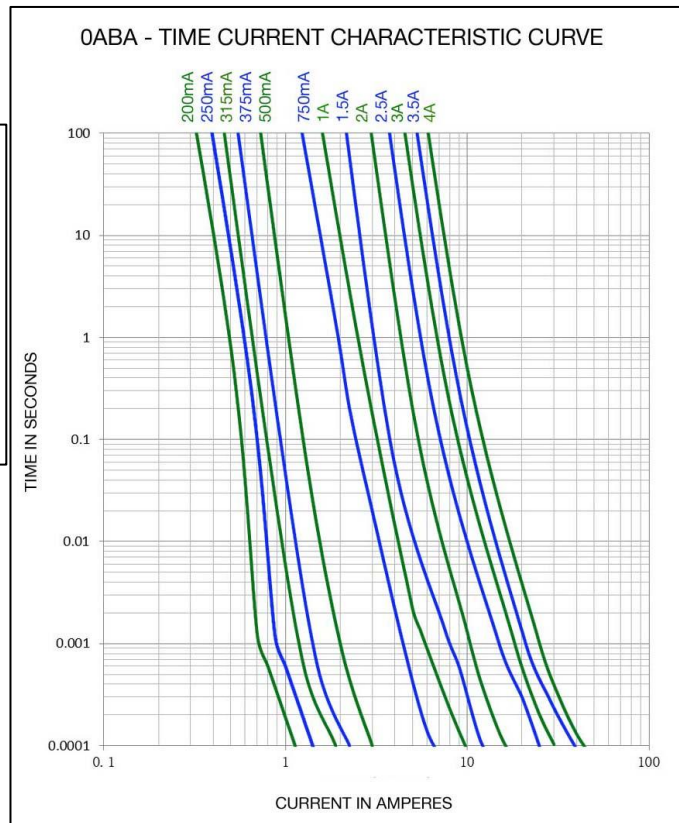
## Temperature Derating Curve

Normal ambient temperature:  $23 \pm 3^\circ\text{C}$


Operating temperature:  $-55 \sim 125^\circ\text{C}$ , with proper correction factor applied



## Average Time Current Curve



## Electrical Specifications

Part Number	Ampere Rating	Resistance (ohms)** Typ.	Typical Melt I <sup>2</sup> t *** DC (A <sup>2</sup> s)	Voltage and Interrupting Ratings	Agency Approvals
					
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 Resistance are measured at <10% of rated current in ambient temperature of 25 degrees;

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



Specifications subject to change without notice

Bel Fuse Inc.  
300 Executive Drive, Suite 300,  
West Orange, NJ 07052 USA

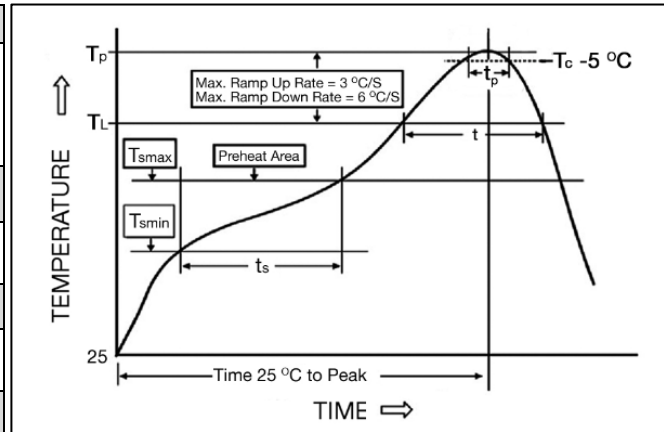
+1 201.432.0463  
Bel.US.CS@belf.com  
[belfuse.com/circuit-protection](http://belfuse.com/circuit-protection)

## Soldering Method

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

## Solder Reflow Profile

Profile Feature	
<b>Preheat &amp; Soak</b>	
Temperature min (T <sub>smin</sub> )	150°C
Temperature max (T <sub>smax</sub> )	200°C
Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	60-120 seconds
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.
Liquidous temperature (T <sub>L</sub> )	217°C
Time at liquidous (t <sub>L</sub> )	60-150 seconds
Peak package body temperature (T <sub>p</sub> )	260°C
Time (t <sub>p</sub> ) within 5°C of the specified classification temperature (T <sub>c</sub> )	30 seconds
Average ramp-down rate (T <sub>p</sub> to T <sub>smax</sub> )	6°C/second max.
Time 25°C to peak temperature	8 minutes max.



## Fuse FGNO Explanation

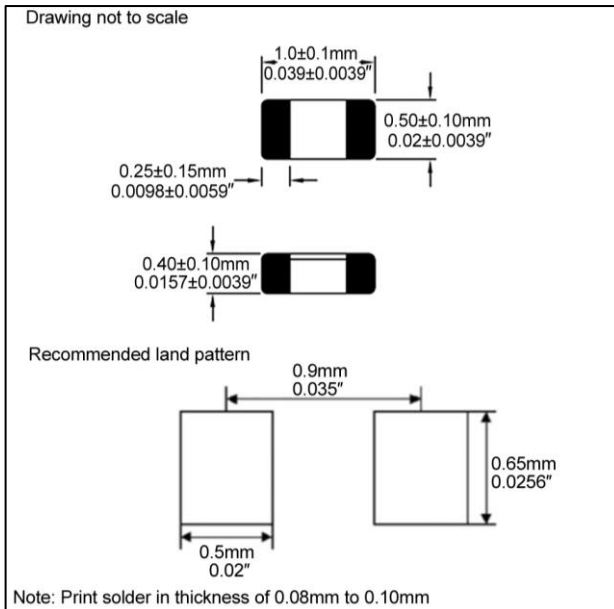
0ABA - [XXXX] X XX

0ABA=0ABA; [XXXX]=Ampere Rating; XX=See Ordering Information as below

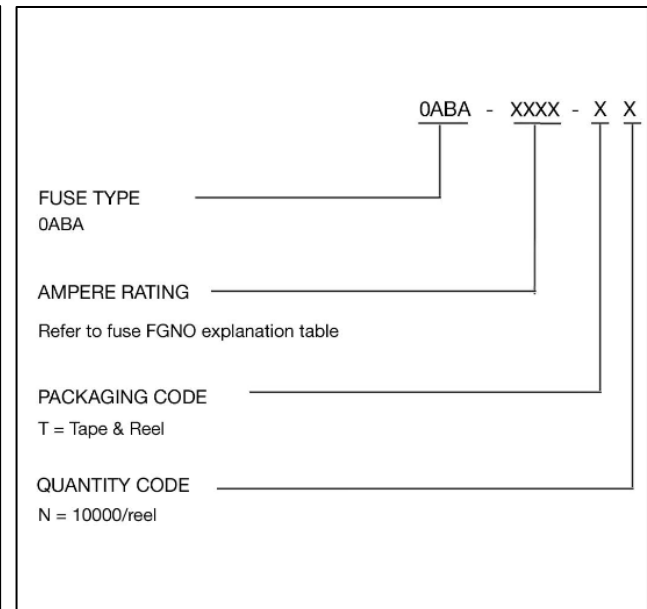
Fraction	Decimal	Milliamps	Bel FGNO[XXXX]
1/5	0.200	200	0200
1/4	.250	250	0250
	.315	315	0315
3/8	.375	375	0375
1/2	.500	500	0500
3/4	.750	750	0750

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	Quantity & Packaging Code
8 mm wide tape with 7 inches Diameter reel	EIA Standard 481-E	10000	0ABA-XXXX-TN