

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

|                      |                                             |
|----------------------|---------------------------------------------|
| <b>Part Number:</b>  | 0ABB-1000-TM                                |
| <b>Manufacturer:</b> | Bel Fuse Inc.                               |
| <b>Package:</b>      | Tape & Reel (TR), Cut Tape (CT), Digi-Reel® |
| <b>Availability:</b> | Please confirm with sales                   |

#### Product Page:

<https://antrexco.com/product/details/bel-fuse-inc/0abb-1000-tm.html>

#### Request a Quote:

[Submit RFQ for this part](#)



Scan for product page

### Contact Information

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### Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

#### Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

# Type 0ABB

## 0603 Time Delay SMD Fuses

HF Pb 0ABB Series – 0603 Size

RoHS Compliant

### Features

- High inrush current withstand capability
  - Small size, 0603 SMD
  - Current rating from 1A to 8A
  - Wide operating temperature range from -55°C to 150°C
  - Tape and Reel for automatic SMD placement
  - Compatible with 260°C Pb-free IR and wave soldering process
  - Ceramic and glass construction
  - Excellent environmental integrity
  - Full compliance with EU Directive 2011/65/EU and amending directive 2015/863 (MSL = 1)
  - Halogen Free and Lead Free
  - AEC-Q Compliant
  - Meets Bel automotive qualification\*
- \* - Largely based on internal AEC-Q test plan

### Applications

- Electronic device and Battery

LEAD FREE =



HALOGEN FREE =



**AEC-Q Compliant**

### Electrical Characteristics

| Rated Current | 1.0In          | 2.0In    | 2.5In         |
|---------------|----------------|----------|---------------|
| 1A~8A         | 4 hour minimum | 1~60 sec | 5 sec maximum |

### Safety Agency Approvals

| Safety Agency                                                                                                     | Safety Agency Certificate | Voltage Rating (V) | Ampere Range / Volt @ I.R. ability** |
|-------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------|--------------------------------------|
|                                                                                                                   | E20624                    | 1A~8A/32V DC       | 1A~8A/50A@ 32V DC                    |
| ** DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source) |                           |                    |                                      |

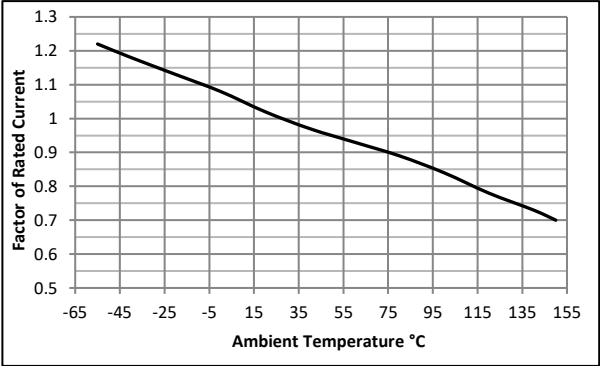
### Physical Specifications

|           |                                                                                                                                         |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Materials | Body : Ceramic Substrate                                                                                                                |
|           | Terminations : Ag / Ni / Sn (100% Lead-free)                                                                                            |
|           | Element Cover Coating : Lead-free Glass                                                                                                 |
| Marking   | On Fuse :                                                                                                                               |
|           | Marking Code                                                                                                                            |
|           | On Label :                                                                                                                              |
|           | "bel", "0ABB", "Current Rating", "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and "", " "(China RoHS compliant). |

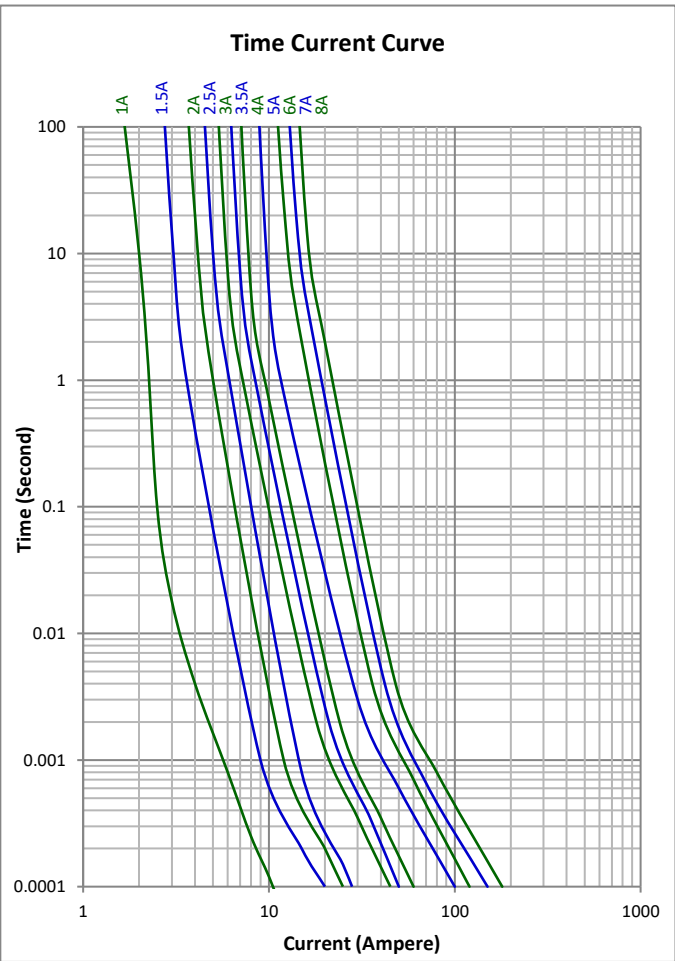
# Type 0ABB

## Temperature Derating Curve

Normal ambient temperature:  $23 \pm 3^{\circ}\text{C}$   
Operating temperature:  $-55 \sim 150^{\circ}\text{C}$ , with proper correction factor applied



## Average Time Current Curve



## Electrical Specifications

| Part Number  | Ampere Rating | Alpha Mark | Typical Cold Resistance (mohms) | Typical Voltage Drop (mV) | Typical Pre-Arcing I <sup>2</sup> t (A <sup>2</sup> s) | Voltage and Interrupting Ratings                                                        | Agency Approvals                                                                         |
|--------------|---------------|------------|---------------------------------|---------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|              |               |            |                                 |                           |                                                        |                                                                                         |  US |
| 0ABB-1000-TM | 1A            | B          | 160                             | 300                       | 0.012                                                  | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | Y                                                                                        |
| 0ABB-1500-TM | 1.5A          | H          | 150                             | 270                       | 0.045                                                  |                                                                                         | Y                                                                                        |
| 0ABB-2000-TM | 2A            | K          | 78                              | 160                       | 0.115                                                  |                                                                                         | Y                                                                                        |
| 0ABB-2500-TM | 2.5A          | L          | 49                              | 145                       | 0.14                                                   |                                                                                         | Y                                                                                        |
| 0ABB-3000-TM | 3A            | O          | 35                              | 130                       | 0.28                                                   |                                                                                         | Y                                                                                        |
| 0ABB-3500-TM | 3.5A          | R          | 28                              | 130                       | 0.5                                                    |                                                                                         | Y                                                                                        |
| 0ABB-4000-TM | 4A            | S          | 18                              | 120                       | 0.6                                                    |                                                                                         | Y                                                                                        |
| 0ABB-5000-TM | 5A            | T          | 14                              | 110                       | 1.9                                                    |                                                                                         | Y                                                                                        |
| 0ABB-6000-TM | 6A            | V*         | 11                              | 110                       | 2.3                                                    |                                                                                         | Y                                                                                        |
| 0ABB-7000-TM | 7A            | X*         | 9.5                             | 90                        | 3                                                      |                                                                                         | Y                                                                                        |
| 0ABB-8000-TM | 8A            | Z*         | 7.0                             | 80                        | 4.5                                                    |                                                                                         | Y                                                                                        |

Consult manufacturer for other ratings  
\* The glass cover for the 6A, 7A and 8A is BLUE, It is GREEN for the other ratings.  
DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25 degrees  
Typical Pre-arcing I<sup>2</sup>t are measured at 10In Current.  
Application testing is strongly recommended.



Specifications subject to change without notice

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Rev. 0ABB Sep2024

## Environmental Specifications

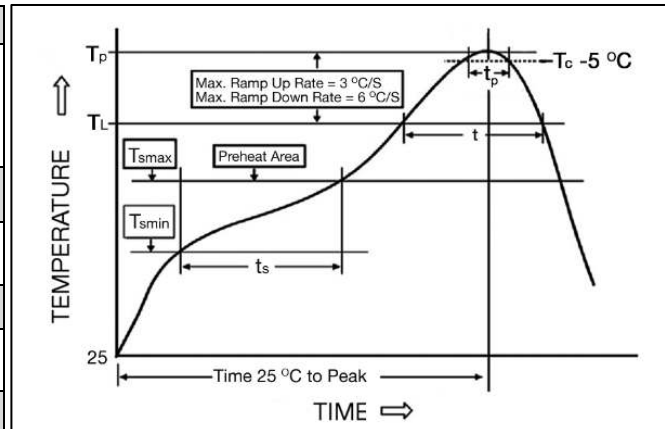
|                                 |                                           |
|---------------------------------|-------------------------------------------|
| Temperature Cycling             | JESD22 Method JA-104                      |
| Moisture Resistance Test        | MIL-STD-202G/ method 106G<br>EIA722/4.4.3 |
| Humidity Bias                   | MIL-STD- 202 Method 103                   |
| High Temperature Operating Life | MIL-STD-202Method 108                     |
| Mechanical Shock                | MIL-STD-202 Method 213                    |
| Vibration                       | MIL-STD-202 Method 204                    |
| Resistance to Solder Heat       | MIL-STD-202, method 201                   |
| Thermal shock                   | MIL-STD-202 Method 107                    |
| Resistance to Solvent           | MIL-STD-202 Method 215                    |
| Solderability Test              | J-STD-002                                 |
| Board Flex                      | AEC-Q200-005                              |
| Terminal Strength (SMD)         | AEC-Q200-006                              |
| High Temperature Exposure       | MIL-STD-202, Method 108                   |

## 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.  |



# Type 0ABB

## Fuse FGNO Explanation

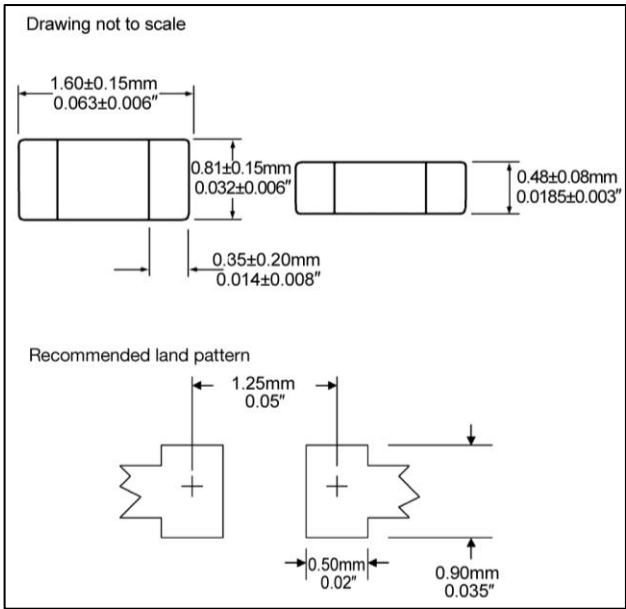
0ABB - [XXXX] X XX

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

| 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           |

| Decimal | Amps | Bel FGNO[XXXX] |
|---------|------|----------------|
| 4.0     | 4    | 4000           |
| 5.0     | 5    | 5000           |
| 6.0     | 6    | 6000           |
| 7.0     | 7    | 7000           |
| 8.0     | 8    | 8000           |

## Mechanical Dimensions



## Ordering Information

0ABB - XXXX - X X

FUSE TYPE 0ABB

AMPERE RATING

Refer to fuse FGNO explanation table

PACKAGING CODE

T = Tape & Reel

QUANTITY CODE

M = 5000/reel

## Packaging

| Packaging Tape & Reel                      | Packaging Specification | Quantity | Quantity & Packaging Code |
|--------------------------------------------|-------------------------|----------|---------------------------|
| 8 mm wide tape with 7 inches Diameter reel | EIA Standard 481        | 5000     | 0ABB-XXXX-TM              |