

# ANTREX Electronics

## Electronic Components Sourcing Information

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### Product Reference Information

**Part Number:** 3AB 500-R  
**Manufacturer:** Bel Fuse Inc.  
**Package:** Bulk  
**Availability:** Please confirm with sales

**Product Page:**

<https://antrexco.com/product/details/bel-fuse-inc/3ab-500-r.html>

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### Quality & Trust

New & Original Components

Supplier verification and packaging condition review

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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.

EOL-Last Buy Date is September 30, 2024  
The replacement series is the 0603C(0603Cxxxx-xx)  
No replacement for the 3AB 500mA through 750mA

## Type 3AB

### Fast Blow Fuse Series

HF  3AB Series, 6x32mm Ceramic Tube Fast Blow Fuse

RoHS Compliant

### Description

6x32mm Fast Blow, Ceramic tube body cartridge fuse designed, approved and complied with UL and CSA standard 248-14.

### Features

- Meet UL and CSA standard 248-14
- Wide operating temperature range
- Bulk packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE =



HALOGEN FREE =



### Physical Specifications

|           |                                                                                                                                                   |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Materials | Body : Ceramic                                                                                                                                    |
|           | Cap : Nickel Plated Brass Caps                                                                                                                    |
|           | Leads : Matte Tin Plated Copper                                                                                                                   |
| Marking   | On Fuse :                                                                                                                                         |
|           | "bel", "3AB", "Current Rating", "Voltage Rating",                                                                                                 |
|           | "Appropriate Safety Logos", "✓" ( RoHS compliant )                                                                                                |
|           | On Label :                                                                                                                                        |
|           | "bel", "3AB, "Current Rating", "Voltage Rating", "Interrupting Rating",<br>"Appropriate Safety Logos" and "✓" (RoHS), "e" (China RoHS compliant). |

### Electrical Characteristics (UL/CSA STD.248-14) Safety Agency Approvals

| Testing Current | Blow Time |         | Amp Range |
|-----------------|-----------|---------|-----------|
|                 | Minimum   | Maximum |           |
| 100%            | 4 hrs.    | N/A     | 100mA-20A |
| 135%            | N/A       | 1 hr.   | 100mA-10A |
| 200%            | N/A       | 5 sec   | 100mA-10A |
|                 | N/A       | 120 sec | 12A-20A   |

| Safety Agency                                                                       | Safety Agency Certificate | Ampere Rating/<br>Voltage Rating | Ampere Range / Volt<br>@ I.R. ability*                                                               |
|-------------------------------------------------------------------------------------|---------------------------|----------------------------------|------------------------------------------------------------------------------------------------------|
|  | E20624                    | 500mA–20A<br>/250V AC            | 500mA-1A/250V AC@35A<br>>1A-3.5A/250V AC@100A<br>>3.5A-10A/250V AC@200A<br>500mA-10A/125V AC@10,000A |
|  | LR39772                   |                                  |                                                                                                      |
|  | E20624                    |                                  | >10A-15A/250V AC@750A<br>>15A-20A/250V AC@1,500A<br>>10A-20A/125V AC@10,000A                         |
| *I.R.= Interrupting Rating = Short Circuit Rating(Amps)                             |                           |                                  |                                                                                                      |

# Type 3AB

## 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 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                                                                                      |

## Electrical Specifications

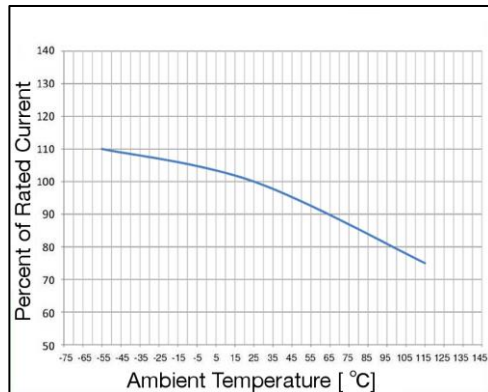
| Catalog Number | Ampere Rating | Typical Cold Resistance (ohms) | Volt-drop @100%In (Volt) max. | Voltage and Interrupting Ratings                                                        | Melting I²T <10 mSec (A² Sec) | Melting I²T @10 In (A² Sec) | Maximum Power Dissipation (W) | Agency Approvals                                                                    |                                                                                     |
|----------------|---------------|--------------------------------|-------------------------------|-----------------------------------------------------------------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                |               |                                |                               |                                                                                         |                               |                             |                               |  |  |
| 3AB 500-R      | 500mA         | 0.74                           | 1.50                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.14                          | 0.10                        | 1.92                          | Y                                                                                   | Y                                                                                   |
| 3AB 750-R      | 750mA         | 0.257                          | 0.36                          |                                                                                         | 0.75                          | 0.74                        | 0.30                          | Y                                                                                   | Y                                                                                   |
| 3AB 1-R        | 1A            | 0.155                          | 0.28                          |                                                                                         | 1.4                           | 1.4                         | 0.37                          | Y                                                                                   | Y                                                                                   |
| 3AB 1.25-R     | 1.25A         | 0.114                          | 0.27                          |                                                                                         | 2.5                           | 2.5                         | 0.44                          | Y                                                                                   | Y                                                                                   |
| 3AB 1.5-R      | 1.5A          | 0.089                          | 0.27                          |                                                                                         | 3.80                          | 3.95                        | 0.49                          | Y                                                                                   | Y                                                                                   |
| 3AB 1.6-R      | 1.6A          | 0.085                          | 0.27                          |                                                                                         | 4.2                           | 4.4                         | 0.51                          | Y                                                                                   | Y                                                                                   |
| 3AB 2-R        | 2A            | 0.057                          | 0.22                          |                                                                                         | 7.2                           | 7.6                         | 0.59                          | Y                                                                                   | Y                                                                                   |
| 3AB 2.5-R      | 2.5A          | 0.043                          | 0.21                          |                                                                                         | 12                            | 13                          | 0.70                          | Y                                                                                   | Y                                                                                   |
| 3AB 3-R        | 3A            | 0.033                          | 0.17                          |                                                                                         | 21                            | 23                          | 0.83                          | Y                                                                                   | Y                                                                                   |
| 3AB 3.5-R      | 3.5A          | 0.027                          | 0.18                          |                                                                                         | 28                            | 31                          | 0.91                          | Y                                                                                   | Y                                                                                   |
| 3AB 4-R        | 4A            | 0.024                          | 0.17                          |                                                                                         | 36                            | 40                          | 1.00                          | Y                                                                                   | Y                                                                                   |
| 3AB 5-R        | 5A            | 0.018                          | 0.16                          |                                                                                         | 63                            | 70                          | 1.20                          | Y                                                                                   | Y                                                                                   |
| 3AB 6-R        | 6A            | 0.014                          | 0.15                          |                                                                                         | 107                           | 123                         | 1.40                          | Y                                                                                   | Y                                                                                   |
| 3AB 7-R        | 7A            | 0.012                          | 0.16                          |                                                                                         | 141                           | 162                         | 1.60                          | Y                                                                                   | Y                                                                                   |
| 3AB 8-R        | 8A            | 0.010                          | 0.15                          |                                                                                         | 184                           | 214                         | 1.70                          | Y                                                                                   | Y                                                                                   |
| 3AB 10-R       | 10A           | 0.008                          | 0.13                          |                                                                                         | 316                           | 372                         | 2.00                          | Y                                                                                   | Y                                                                                   |
| 3AB 12-R       | 12A           | 0.009                          | 0.19                          |                                                                                         | 501                           | 597                         | 2.30                          | Y                                                                                   |                                                                                     |
| 3AB 15-R       | 15A           | 0.007                          | 0.17                          |                                                                                         | 845                           | 1023                        | 2.70                          | Y                                                                                   |                                                                                     |
| 3AB 20-R       | 20A           | 0.004                          | 0.15                          |                                                                                         | 1598                          | 1968                        | 3.00                          | Y                                                                                   |                                                                                     |

Consult manufacturer for other ratings

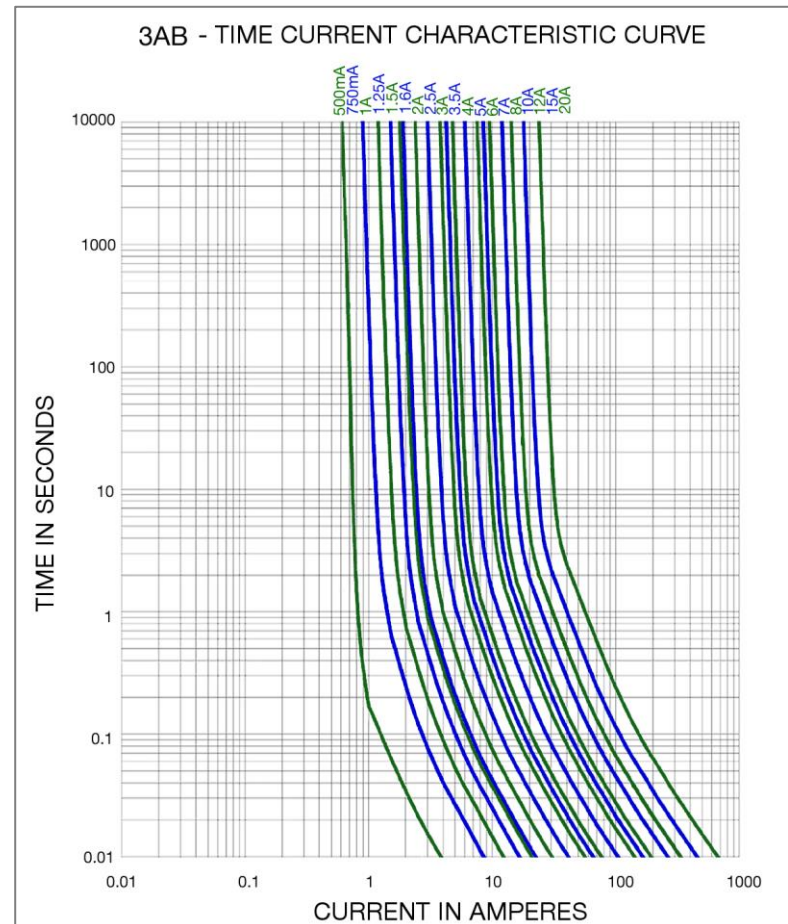
No replacement for the 500mA - 750mA  
The replacement series is the 0603C

# Type 3AB

## Temperature Derating Curve

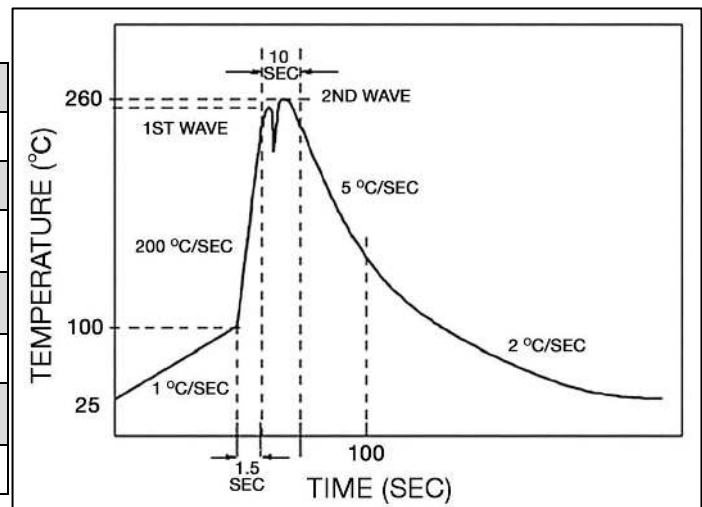


## Average Time Current Curve



## 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<br>Max 4°C / second |
| Final preheat temperature                          | within 125°C of soldering temperature        |
| Peak temperature T <sub>p</sub>                    | 260°C                                        |
| Time within +0°C / -5°C of actual peak temperature | 10 seconds                                   |
| Ramp-down rate                                     | 5°C / second max.                            |



# Type 3AB

## Fuse FGNO Explanation

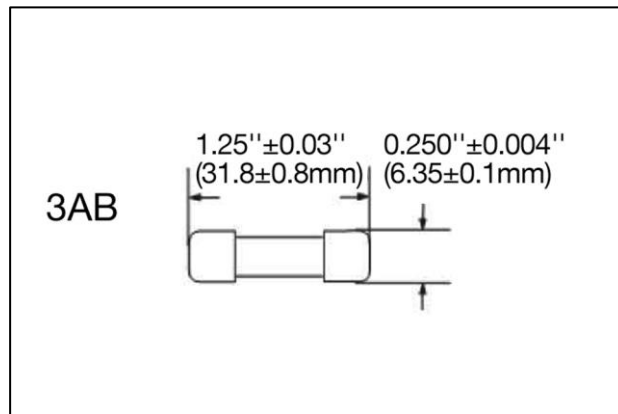
06X3 R [XXXX] -XX

0603R=3AB; [XXXX]=Ampere Rating; XX=See Ordering Information as below

| Fraction | Decimal | Milliamps | Bel FGNO[XXXX] |
|----------|---------|-----------|----------------|
| 1/2      | .500    | 500       | 0500           |
| 3/4      | .750    | 750       | 0750           |

| 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           |
| 2-1/2    | 2.5     | 2.5  | 2500           |
|          | 3.0     | 3    | 3000           |
| 3-1/2    | 3.5     | 3.5  | 3500           |
|          | 4.0     | 4    | 4000           |
|          | 5.0     | 5    | 5000           |
|          | 6.0     | 6    | 6000           |
|          | 7.0     | 7    | 7000           |
|          | 8.0     | 8    | 8000           |
|          |         | 10   | 9100           |
|          |         | 12   | 9120           |
|          |         | 15   | 9150           |
|          |         | 20   | 9200           |

## Mechanical Dimensions



## Ordering Information

06X3 R XXXX - X X

FUSE TYPE \_\_\_\_\_  
0603R = 3AB Series

R = RoHS Compliant \_\_\_\_\_

AMPERE RATING \_\_\_\_\_  
Refer to fuse FGNO explanation table

PACKAGING CODE \_\_\_\_\_  
3 = 3AB, Cartridge, 1K / Box

VOLTAGE CODE \_\_\_\_\_  
3 = 250V, for 100mA-20A

## Packaging

| Packaging Option | Packaging Specification | Quantity | Packaging Code | Inside Tape Spacing |
|------------------|-------------------------|----------|----------------|---------------------|
| Bulk             | N/A                     | 1000     | 33             | N/A                 |