

100mA-400mA EOL – Last Buy Date is Jun 30, 2020  
 No replacements for these ratings

# Type 3AB / 3ABP

## Fast Blow Fuse Series

**HF** **Pb** 3AB/3ABP Series, 6x32mm Ceramic Tube Fast Blow Fuse

RoHS 2 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
- RoHS 2 compliant
- Halogen Free
- Lead Free

### Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = **Pb**  
 HALOGEN FREE = **HF**



### Physical Specifications

|           |  |
|-----------|--|
| Materials | Body : Ceramic   |
|           | Cap : Nickel Plated Brass Caps   |
|           | Leads : Matte Tin Plated Copper  |
| Marking   | On Fuse :  |
|           | "bel", "3AB", "Current Rating", "Voltage Rating",<br>"Appropriate Safety Logos", "✓" ( RoHS 2 compliant)   |
|           | On Label :   |
|           | "bel", "3AB" or "3ABP", "Current Rating", "Voltage Rating", "Interrupting Rating",<br>"Appropriate Safety Logos" and "✓", "Pb", "CE" (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                                      | Voltage Rating (V) | Ampere Range / Volt @ I.R. ability*  |
|---------------|--|--------------------|--|
| <b>UL</b> US  | E20624   | 100mA-20A /250V AC | 100mA-1A/250V AC@35A<br>>1A-3.5A/250V AC@100A<br>>3.5A-10A/250V AC@200A<br>100mA-10A/250V AC@10,000A |
| <b>SP</b>     | LR39772  |                    |  |
| <b>UL</b> US  | E20624   |                    | >10A-15A/250V AC@750A<br>>15A-20A/250V AC@1,500A<br>>10A-20A/125V AC@10,000A                         |
| <b>PSE</b>    | JET1037-31003-1010<br>JET1037-31003-1011<br>JET1037-31003-1007 |                    | 1A-5A/125V AC@500A<br>>5A-15A/125V AC@300A   |

\*I.R.= Interrupting Rating = Short Circuit Rating(Amps)

# Type 3AB / 3ABP

## 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 I <sup>2</sup> T <10 mSec (A <sup>2</sup> Sec)                                  | Melting I <sup>2</sup> T @ 10 In (A <sup>2</sup> Sec) | Maximum Power Dissipation (W) | Agency Approvals  |   |   |
|----------------|---------------|--------------------------------|-------------------------------|---|---|---|-------------------------------|---|---|---|
|                |               |                                |                               |   |   |   |                               |  |  |  |
| 3AB(P) 100-R   | 100mA         | 11.3                           | 4.62                          | See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings | 0.002   | 0.002   | 0.59                          | Y   | Y   |   |
| 3AB(P) 125-R   | 125mA         | 10.5                           | 5.18                          |   | 0.004   | 0.003   | 0.74                          | Y   | Y   |   |
| 3AB(P) 160-R   | 160mA         | 7.26                           | 4.85                          |   | 0.008   | 0.005   | 0.87                          | Y   | Y   |   |
| 3AB(P) 200-R   | 200mA         | 5.00                           | 4.38                          |   | 0.014   | 0.010   | 1.02                          | Y   | Y   |   |
| 3AB(P) 250-R   | 250mA         | 3.42                           | 4.05                          |   | 0.025   | 0.017   | 1.19                          | Y   | Y   |   |
| 3AB(P) 300-R   | 300mA         | 2.52                           | 3.54                          |   | 0.044   | 0.032   | 1.40                          | Y   | Y   |   |
| 3AB(P) 375-R   | 375mA         | 1.86                           | 3.35                          |   | 0.071   | 0.050   | 1.58                          | Y   | Y   |   |
| 3AB(P) 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(P) 750-R   | 750mA         | 0.257                          | 0.36                          | 0.75  |   | 0.74  | 0.30                          | Y   | Y   |   |
| 3AB(P) 1-R     | 1A            | 0.155                          | 0.28                          | 1.4   |   | 1.4   | 0.37                          | Y   | Y   | Y   |
| 3AB(P) 1.25-R  | 1.25A         | 0.114                          | 0.27                          | 2.5   |   | 2.5   | 0.44                          | Y   | Y   | Y   |
| 3AB(P) 1.5-R   | 1.5A          | 0.089                          | 0.27                          | 3.80  |   | 3.95  | 0.49                          | Y   | Y   | Y   |
| 3AB(P) 1.6-R   | 1.6A          | 0.085                          | 0.27                          | 4.2   |   | 4.4   | 0.51                          | Y   | Y   | Y   |
| 3AB(P) 2-R     | 2A            | 0.057                          | 0.22                          | 7.2   |   | 7.6   | 0.59                          | Y   | Y   | Y   |
| 3AB(P) 2.5-R   | 2.5A          | 0.043                          | 0.21                          | 12  |   | 13  | 0.70                          | Y   | Y   | Y   |
| 3AB(P) 3-R     | 3A            | 0.033                          | 0.17                          | 21  |   | 23  | 0.83                          | Y   | Y   | Y   |
| 3AB(P) 3.5-R   | 3.5A          | 0.027                          | 0.18                          | 28  |   | 31  | 0.91                          | Y   | Y   | Y   |
| 3AB(P) 4-R     | 4A            | 0.024                          | 0.17                          | 36  |   | 40  | 1.00                          | Y   | Y   | Y   |
| 3AB(P) 5-R     | 5A            | 0.018                          | 0.16                          | 63  |   | 70  | 1.20                          | Y   | Y   | Y   |
| 3AB(P) 6-R     | 6A            | 0.014                          | 0.15                          | 107   |   | 123   | 1.40                          | Y   | Y   | Y   |
| 3AB(P) 7-R     | 7A            | 0.012                          | 0.16                          | 141   |   | 162   | 1.60                          | Y   | Y   | Y   |
| 3AB(P) 8-R     | 8A            | 0.010                          | 0.15                          | 184   |   | 214   | 1.70                          | Y   | Y   | Y   |
| 3AB(P) 10-R    | 10A           | 0.008                          | 0.13                          | 316   |   | 372   | 2.00                          | Y   | Y   | Y   |
| 3AB(P) 12-R    | 12A           | 0.009                          | 0.19                          | 501   |   | 597   | 2.30                          | Y   |   | Y   |
| 3AB(P) 15-R    | 15A           | 0.007                          | 0.17                          | 845   |   | 1023  | 2.70                          | Y   |   | Y   |
| 3AB(P) 20-R    | 20A           | 0.004                          | 0.15                          | 1598  |   | 1968  | 3.00                          | Y   |   |   |

Consult manufacturer for other ratings

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Specifications subject to change without notice

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# Type 3AB / 3ABP

## 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 Tp                                | 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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