

# Type AEB

## SMT Aluminum Electrolytic Capacitors - High Voltage, 105 °C

### Low Impedance and Long Life for High Voltage, High Ripple Current Applications



Type AEB capacitors are it for high voltage applications like input bus capacitors in board mounted miniature AC/DC supplies. The AEB's low impedance in ratings up to 450 Vdc, and long life, make it ideal for power supply input and other high voltage applications. The vertical, cylindrical cases make easy automatic mounting and reflow soldering.

#### Highlights

- +105 °C, Up to 5000 Hour Load Life
- Capacitance Range: 2.2 μF to 100 μF
- Voltage Range: 160 Vdc to 450 Vdc

### Specifications

**Operating Temperature:** -25 °C to +105 °C

**Rated Voltage:** 160, 200, 250, 350, 400, 450 Vdc

**Capacitance:** 2.2 μF to 100 μF

**Capacitance Tolerance:** ±20% @ 120 Hz and +20 °C

**Impedance Ratio (at 120 Hz):**

| Rated Voltage     | 160 | 200 | 250 | 350 | 400 | 450 |
|-------------------|-----|-----|-----|-----|-----|-----|
| Z(-25°C)/Z(+20°C) | 2   | 2   | 3   | 5   | 6   | 6   |



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

**Life Test:** 5000 h @ +105 °C, L — S Cases

4000 h @ +105 °C, K Case

3000 h @ +105 °C, J Case

Δ Capacitance ± 20%

DF: ≤ 200% of limit

DCL: ≤ 100% of limit

**Shelf Test:** 1000 h @ 105 °C

Δ Capacitance ± 20%

DF: ≤ 200% of limit

DCL: ≤ 100% of limit

### AEB Series Marking



### Outline Drawing



### Case Dimensions

| Case Code | D ±0.5 | L ±0.5 | A ±0.2 | H (max) | I (ref) | W        | P (ref) | K (mm)    |
|-----------|--------|--------|--------|---------|---------|----------|---------|-----------|
| J         | 10.0   | 13.5   | 10.3   | 12      | 3.5     | 0.9 ±0.2 | 4.6     | 0.7 ± 0.2 |
| K         | 10.0   | 16.5   | 10.3   | 12      | 3.5     | 0.9 ±0.2 | 4.6     | 0.7 ± 0.2 |
| L         | 12.5   | 16.5   | 13.5   | 15      | 4.7     | 0.9 ±0.3 | 4.4     | 0.7 ± 0.3 |
| P         | 16.0   | 16.5   | 17.0   | 19      | 5.5     | 1.2 ±0.3 | 6.7     | 0.7 ± 0.3 |
| U         | 16.0   | 21.5   | 17.0   | 19      | 5.5     | 1.2 ±0.3 | 6.7     | 0.7 ± 0.3 |
| R         | 18.0   | 16.5   | 19.0   | 21      | 6.7     | 1.2 ±0.3 | 6.7     | 0.7 ± 0.3 |
| S         | 18.0   | 21.5   | 19.0   | 21      | 6.7     | 1.2 ±0.3 | 6.7     | 0.7 ± 0.3 |

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### Ratings

| Cap<br>( $\mu$ F) | Catalog<br>Part Number | Max.<br>DCL<br>2 min<br>( $\mu$ A) | Max.<br>Dissipation<br>Factor @<br>120 Hz<br>20 °C | Max.<br>Impedance<br>@ 100 kHz<br>20 °C<br>( $\Omega$ ) | Max.<br>Ripple Current<br>@ 105 °C<br>100 kHz<br>(mA) | Size (mm)<br>D x L | Quantity<br>Reel |
|-------------------|------------------------|------------------------------------|--|---|---|--------------------|------------------|
| <b>160 Vdc</b>    |                        |                                    |  |   |   |                    |                  |
| 10.0              | AEB106M2CJ32T-F        | 106                                | 0.15   | 3.00  | 70  | 10 x 13.5          | 250              |
| 33.0              | AEB336M2CL32T-F        | 327                                | 0.15   | 1.80  | 470   | 12.5 x 16.5        | 150              |
| 47.0              | AEB476M2CP44T-F        | 461                                | 0.15   | 1.40  | 600   | 16 x 16.5          | 125              |
| 68.0              | AEB686M2CU44T-F        | 663                                | 0.15   | 0.55  | 750   | 16 x 21.5          | 75               |
| 68.0              | AEB686M2CR44T-F        | 663                                | 0.15   | 0.80  | 750   | 18 x 16.5          | 125              |
| 100.0             | AEB107M2CS44T-F        | 970                                | 0.15   | 0.50  | 1060  | 18 x 21.5          | 75               |
| <b>200 Vdc</b>    |                        |                                    |  |   |   |                    |                  |
| 22.0              | AEB226M2DL32T-F        | 274                                | 0.15   | 1.80  | 470   | 12.5 x 16.5        | 150              |
| 33.0              | AEB336M2DP44T-F        | 406                                | 0.15   | 1.40  | 600   | 16 x 16.5          | 125              |
| 47.0              | AEB476M2DR44T-F        | 574                                | 0.15   | 0.80  | 600   | 18 x 16.5          | 125              |
| 68.0              | AEB686M2DU44T-F        | 826                                | 0.15   | 0.55  | 750   | 16 x 21.5          | 75               |
| 100.0             | AEB107M2DS44T-F        | 1210                               | 0.15   | 0.50  | 1060  | 18 x 21.5          | 75               |
| <b>250 Vdc</b>    |                        |                                    |  |   |   |                    |                  |
| 10.0              | AEB106M2EK32T-F        | 160                                | 0.15   | 2.50  | 88  | 10 x 16.5          | 200              |
| 22.0              | AEB226M2EP44T-F        | 340                                | 0.15   | 1.60  | 560   | 16 x 16.5          | 125              |
| 33.0              | AEB336M2ER44T-F        | 505                                | 0.15   | 0.85  | 560   | 18 x 16.5          | 125              |
| 47.0              | AEB476M2EU44T-F        | 715                                | 0.15   | 0.70  | 710   | 16 x 21.5          | 75               |
| 68.0              | AEB686M2ES44T-F        | 1030                               | 0.15   | 0.60  | 990   | 18 x 21.5          | 75               |
| <b>350 Vdc</b>    |                        |                                    |  |   |   |                    |                  |
| 10.0              | AEB106M2VP44T-F        | 220                                | 0.20   | 3.20  | 270   | 16 x 16.5          | 125              |
| 22.0              | AEB226M2VR44T-F        | 472                                | 0.20   | 1.60  | 350   | 18 x 16.5          | 125              |
| 33.0              | AEB336M2VU44T-F        | 703                                | 0.20   | 1.20  | 480   | 16 x 21.5          | 75               |
| 47.0              | AEB476M2VS44T-F        | 997                                | 0.20   | 1.00  | 670   | 18 x 21.5          | 75               |
| <b>400 Vdc</b>    |                        |                                    |  |   |   |                    |                  |
| 3.3               | AEB335M2GJ32T-F        | 89                                 | 0.24   | 8.00  | 40  | 10 x 13.5          | 250              |
| 4.7               | AEB475M2GK32T-F        | 123                                | 0.24   | 5.50  | 50  | 10 x 16.5          | 200              |
| 10.0              | AEB106M2GP44T-F        | 250                                | 0.24   | 3.60  | 250   | 16 x 16.5          | 125              |
| 22.0              | AEB226M2GU44T-F        | 538                                | 0.24   | 2.20  | 410   | 16 x 21.5          | 75               |
| 33.0              | AEB336M2GS44T-F        | 802                                | 0.24   | 1.20  | 600   | 18 x 21.5          | 75               |
| <b>450 Vdc</b>    |                        |                                    |  |   |   |                    |                  |
| 2.2               | AEB225M2WJ32T-F        | 69                                 | 0.24   | 11.00   | 29  | 10 x 13.5          | 250              |
| 3.3               | AEB335M2WK32T-F        | 99                                 | 0.24   | 7.00  | 41  | 10 x 16.5          | 200              |
| 4.7               | AEB475M2WL32T-F        | 137                                | 0.24   | 4.80  | 49  | 12.5 x 16.5        | 150              |
| 10.0              | AEB106M2WR44T-F        | 280                                | 0.24   | 3.00  | 310   | 18 x 16.5          | 125              |
| 22.0              | AEB226M2WS44T-F        | 604                                | 0.24   | 1.80  | 560   | 18 x 21.5          | 75               |

### Part Numbering System

|            |  |                          |  |  |  |                   |
|------------|--|--------------------------|--|--|--|-------------------|
| <b>AEB</b> | <b>106</b>   | <b>M</b>                 | <b>2C</b>                                    | <b>J</b>                                     | <b>32T</b>   | <b>-F</b>         |
| Type       | Capacitance  | Capacitance<br>Tolerance | Voltage Code                                 | Case<br>Code                                 | Packaging<br>Information                                       | RoHS<br>Compliant |
|            | 105 = 1.0 $\mu$ F<br>106 = 10.0 $\mu$ F<br>107 = 100.0 $\mu$ F | M = $\pm$ 20%            | 2C = 160 Vdc<br>2D = 200 Vdc<br>2E = 250 Vdc | 2V = 350 Vdc<br>2G = 400 Vdc<br>2W = 450 Vdc | 32 = Carrier tape<br>Width (mm)<br>T = Tape & Reel<br>B = bulk |                   |

See the Aluminum SMT Application Guide for Packaging Information.

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### Recommended Land Pattern

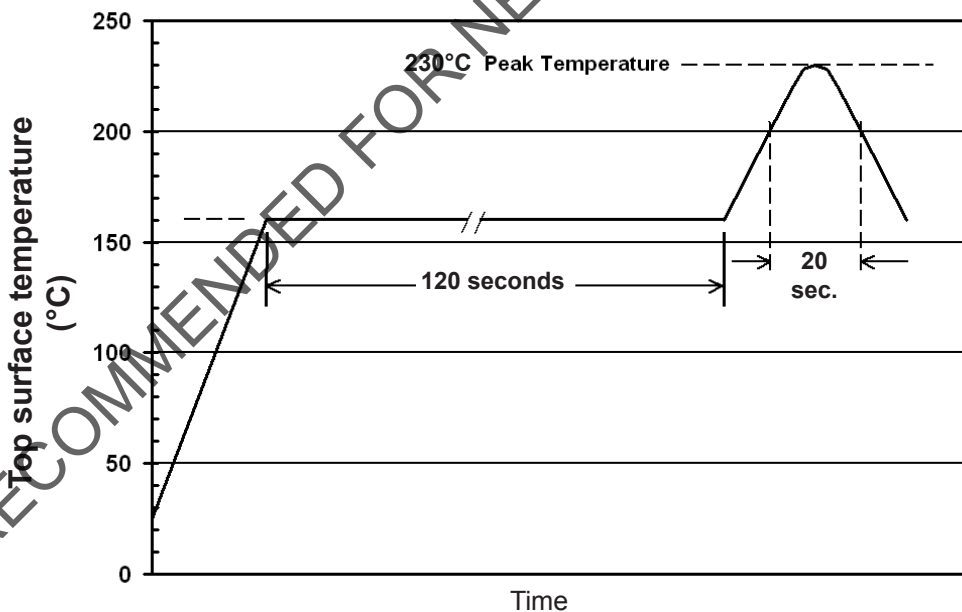


| Case Code | Case Dia. (mm) | A (mm) | B (mm) | C (mm) |
|-----------|----------------|--------|--------|--------|
| J         | 10             | 4.0    | 4.5    | 2.0    |
| K         | 10             | 4.0    | 4.5    | 2.0    |
| L         | 12.5           | 4.0    | 5.7    | 2.0    |
| P         | 16             | 6.0    | 6.5    | 2.5    |
| U         | 16             | 6.0    | 6.5    | 2.5    |
| R         | 18             | 6.0    | 7.5    | 2.5    |
| S         | 18             | 6.0    | 7.5    | 2.5    |

### Ripple Current Correction Factor

| Vdc        | Ripple Current Correction Factor vs Frequency |      |                |                 |
|------------|---|------|----------------|-----------------|
|            | 120 Hz  | 1kHz | 10kHz to 30kHz | 30kHz to 100kHz |
| 160 to 250 | 0.55  | 0.85 | 0.90           | 1.00            |
| 350 to 450 | 0.50  | 0.80 | 0.90           | 1.00            |

### Recommended Reflow Soldering Profile for AEB Series (10 to 18 mm dia.)



|  |                  |
|--|------------------|
| Max. top surface temperature during reflow soldering | 230°C            |
| Maximum time at peak temperature                     | 5 seconds        |
| Maximum time at or above 200°C                       | 20 seconds       |
| Number of reflow processes                           | 1                |
| Terminal Material                                    | copper clad iron |

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## SMT Aluminum Electrolytic Capacitors - High Voltage, 105 °C

### Typical Performance Curves



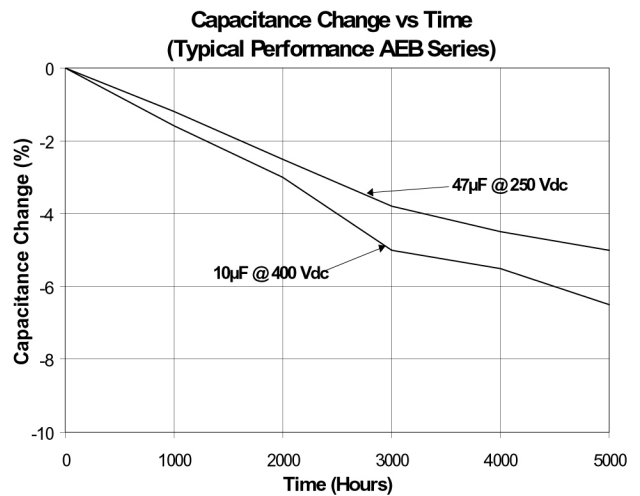
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## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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