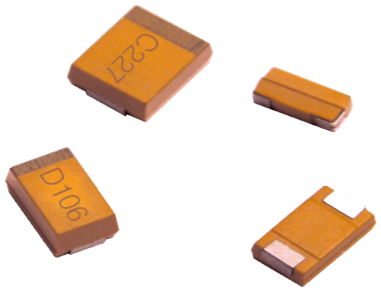
# TYPE CBAFB SERIES

High-frequency & failure rate grade available

## FEATURES AND USES




- Resin molding packaging, good sealing, sheet type, polarity;
- Small volume, light weight, excellent and stable electrical performance, high reliability, good high frequency characteristics, ultra-low ESR (equivalent series resistance equivalent to KEMET company T495 type), large electric capacity;
- Suitable for aerospace, aviation, satellite, communications, missile and other reliable electronic equipment surface mounted with DC or pulsation circuit.
- Implementation standard: GJB2283-95
  QJ/PWV 347-2011

## BASIC MECHANICAL DESIGN FEATURE

Use temperature range: -55℃~+125℃, reduction design see Application Guidance 4.1;
allowable allowable capacity: K:±10%; M:±20%;
Overall dimensions: see Figure 1 and Table 1;
Room temperature leakage current: not exceeding that specified in Table 2;
Equivalent series resistance: not exceeding that specified in Table 2;
Loss angle tangent (tg δ) and high and low temperature characteristics: see Table 2;
Rated voltage, category voltage, and nominal capacitance: see Table 2.

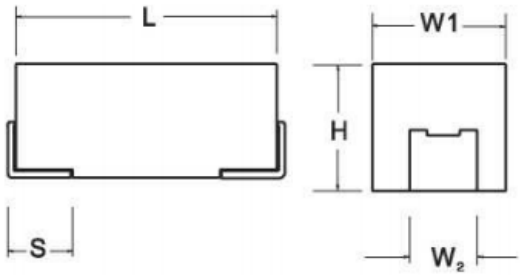



chart 1

Table 1 Overall dimensions of the capacitors (mm)

| Case code | L | $W_1$ | H | S | $W_2$ |
|---|---|---|---|---|---|
| C | 6.0±0.2 | 3.2±0.2 | 2.5±0.2 | 1.3±0.2 | 2.2±0.2 |
| D | 7.3±0.2 | 4.3±0.2 | 2.8±0.2 | 1.3±0.2 | 2.4±0.2 |
| E | 7.3±0.4 | 4.3±0.4 | 4.1±0.4 | 1.3±0.2 | 2.4±0.2 |
| V | 7.3±0.4 | 6.1±0.4 | 3.6±0.4 | 1.35±0.2 | 3.0±0.2 |
| W | 7.3±0.4 | 6.1±0.4 | 4.1±0.4 | 1.35±0.2 | 3.0±0.2 |

Table 2 Rated voltage, category voltage, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

| Nominal electricity capacity ($C_R$) μF | shell Number | ESR max 100KHz +25℃ Ω | Leak current max μA | | | Capacity variation range of % | | Loss angle is cut to max % | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | +25℃ | +85℃ | +125℃ | -55℃ +85℃ | +125℃ | -55℃ | +25℃ | +85℃ +125℃ |
| Rated voltage ($U_R$) 4V (class voltage 2.7 V, 125℃) | | | | | | | | | | |
| 68 | C | 0.2 | 2.7 | 21.7 | 27.2 | ±10 | ±12 | 8 | 6 | 8 |
| 100 | D | 0.2 | 4.0 | 32.0 | 40 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | D | 0.2 | 6.0 | 48.0 | 60 | ±10 | ±12 | 10 | 8 | 10 |
| 220 | D | 0.1 | 8.8 | 70.4 | 88 | ±12 | ±14 | 12 | 10 | 12 |
| 330 | E | 0.1 | 13.2 | 105.6 | 132 | ±12 | ±14 | 12 | 10 | 12 |
| 470 | E | 0.08 | 18.8 | 150.4 | 188 | ±14 | ±16 | 14 | 12 | 14 |
| Rated voltage ($U_R$) 6.3V (class voltage 4 V, 125℃) | | | | | | | | | | |
| 15 | C | 0.4 | 0.9 | 7.5 | 9.4 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | C | 0.35 | 1.3 | 11.0 | 13.8 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | D | 0.2 | 2.0 | 16.6 | 20.7 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | C | 0.3 | 2.0 | 16.6 | 20.7 | ±10 | ±12 | 8 | 6 | 8 |
| 47 | D | 0.2 | 2.9 | 23.6 | 29.6 | ±10 | ±12 | 8 | 6 | 8 |
| 68 | D | 0.17 | 4.2 | 34.2 | 42.8 | ±10 | ±12 | 8 | 6 | 8 |
| 100 | D | 0.15 | 6.3 | 50.4 | 63.0 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | E | 0.125 | 9.4 | 75.6 | 94.5 | ±10 | ±12 | 10 | 8 | 10 |
| 220 | E | 0.1 | 13.8 | 110.8 | 138.6 | ±12 | ±14 | 12 | 10 | 12 |
| 330 | E | 0.1/0.09 | 20.7 | 166.3 | 207.9 | ±12 | ±14 | 12 | 10 | 12 |
| 470 | E | 0.08/0.06 | 29.6 | 236.8 | 296.1 | ±14 | ±16 | 14 | 12 | 14 |
| Rated voltage ($U_R$) 10V (class voltage 7 V, 125℃) | | | | | | | | | | |
| 10 | C | 0.5 | 1.0 | 8.0 | 10 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | C | 0.4 | 1.5 | 12.0 | 15 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | C | 0.35 | 2.2 | 17.6 | 22 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | C | 0.3 | 3.3 | 26.4 | 33 | ±10 | ±12 | 8 | 6 | 8 |
| 47 | D | 0.2 | 4.7 | 37.6 | 47 | ±10 | ±12 | 8 | 6 | 8 |
| 68 | D | 0.15 | 6.8 | 54.4 | 68 | ±10 | ±12 | 8 | 6 | 8 |
| 100 | E | 0.1 | 10 | 80 | 100 | ±10 | ±12 | 10 | 8 | 10 |
| 100 | D | 0.1 | 10 | 80 | 100 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | E | 0.1 | 15 | 120 | 150 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | D | 0.1 | 15 | 120 | 150 | ±10 | ±12 | 10 | 8 | 10 |
| 220 | E | 0.1 | 22 | 176 | 220 | ±12 | ±14 | 12 | 10 | 12 |
| 330 | E | 0.1/0.07 | 33 | 264 | 330 | ±12 | ±14 | 12 | 10 | 12 |
| 470 | E | 0.08/0.06 | 47 | 376 | 470 | ±14 | ±16 | 14 | 12 | 14 |

Table 2 Rated voltage, class voltage, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

| Nominal electricity capacity ($C_R$) μF | shell Number | ESR max 100KHz +25℃ Ω | Leak current max μA | | | Capacity variation range of % | | Loss angle is cut to max % | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | +25℃ | +85℃ | +125℃ | -55℃ +85℃ | +125℃ | -55℃ | +25℃ | +85℃ +125℃ |
| Rated voltage ($U_R$) 16V (class voltage 10 V, 125℃) | | | | | | | | | | |
| 6.8 | C | 0.5 | 1.0 | 8.7 | 10.8 | ±10 | ±12 | 8 | 6 | 8 |
| 10 | C | 0.5 | 1.6 | 12.8 | 16.0 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | C | 0.4 | 2.4 | 19.2 | 24.0 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | D | 0.25 | 3.5 | 28.1 | 35.2 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | C | 0.3 | 3.5 | 28.1 | 35.2 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | D | 0.2 | 5.2 | 42.2 | 52.8 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | C | 0.3 | 5.2 | 42.2 | 52.8 | ±10 | ±12 | 8 | 6 | 8 |
| 47 | D | 0.2 | 7.5 | 60.1 | 75.2 | ±10 | ±12 | 8 | 6 | 8 |
| 47 | C | 0.3 | 7.5 | 60.1 | 75.2 | ±10 | ±12 | 8 | 6 | 8 |
| 68 | D | 0.15 | 10.8 | 87.0 | 108.8 | ±10 | ±12 | 8 | 6 | 8 |
| 100 | E | 0.1 | 16 | 128 | 160 | ±10 | ±12 | 10 | 8 | 10 |
| 100 | D | 0.125 | 16 | 128 | 160 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | E | 0.1 | 24 | 192 | 240 | ±10 | ±12 | 10 | 8 | 10 |
| 220 | E | 0.09 | 35.2 | 281.6 | 352 | ±12 | ±14 | 12 | 10 | 12 |
| 330 | W | 0.07 | 52.8 | 422.4 | 528 | ±12 | ±14 | 12 | 10 | 12 |
| Rated voltage ($U_R$) 20V (class voltage 13 V, 125℃) | | | | | | | | | | |
| 4.7 | C | 0.6 | 0.9 | 7.5 | 9.4 | ±10 | ±12 | 8 | 6 | 8 |
| 6.8 | C | 0.5 | 1.3 | 10.8 | 13.6 | ±10 | ±12 | 8 | 6 | 8 |
| 10 | C | 0.45 | 2.0 | 16.0 | 20 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | D | 0.275 | 3.0 | 24.0 | 30 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | E | 0.225 | 4.4 | 35.2 | 44 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | E | 0.17 | 6.6 | 52.8 | 66 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | D | 0.2 | 6.6 | 52.8 | 94 | ±10 | ±12 | 8 | 6 | 8 |
| 47 | E | 0.15 | 9.4 | 75.2 | 136 | ±10 | ±12 | 8 | 6 | 8 |
| 68 | E | 0.15 | 13.6 | 108.8 | 200 | ±10 | ±12 | 8 | 6 | 8 |
| 100 | E | 0.12 | 20 | 160 | 300 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | E | 0.12 | 30 | 240 | 440 | ±10 | ±12 | 10 | 8 | 10 |
| 220 | W | 0.08 | 44 | 352 | 660 | ±12 | ±14 | 12 | 10 | 12 |
| 330 | W | 0.07 | 66 | 528 | 9.4 | ±12 | ±14 | 12 | 10 | 12 |
| Rated voltage ($U_R$) 25V (class voltage 17 V, 125℃) | | | | | | | | | | |
| 4.7 | C | 0.6 | 1.1 | 9.4 | 11.7 | ±10 | ±12 | 8 | 6 | 8 |
| 6.8 | C | 0.5 | 1.7 | 13.6 | 17.0 | ±10 | ±12 | 8 | 6 | 8 |
| 10 | C | 0.45 | 2.5 | 20 | 25.0 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | D | 0.275 | 3.7 | 30 | 37.5 | ±10 | ±12 | 8 | 6 | 8 |

Table 2 Rated voltage, class voltage, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

| Nominal electricity capacity（CR） μF | shell Number | ESR max 100KHz +25℃ Ω | Leak current max μA | | | Capacity variation range of % | | Loss angle is cut to max % | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | +25℃ | +85℃ | +125℃ | -55℃ +85℃ | +125℃ | -55℃ | +25℃ | +85℃ +125℃ |
| rated voltage ($U_R$) 25V (Category voltage: 17V, 125℃) | | | | | | | | | | |
| 22 | E | 0.2 | 5.5 | 44 | 55.0 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | D | 0.225 | 5.5 | 44 | 55.0 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | E | 0.175 | 8.2 | 66 | 82.5 | ±10 | ±12 | 8 | 6 | 8 |
| 47 | E | 0.2 | 11.7 | 94 | 117.5 | ±10 | ±12 | 8 | 6 | 8 |
| 68 | W | 0.2 | 17 | 136 | 170 | ±10 | ±12 | 8 | 6 | 8 |
| 68 | E | 0.2 | 17 | 136 | 170 | ±10 | ±12 | 8 | 6 | 8 |
| 100 | W | 0.15 | 25 | 200 | 250 | ±10 | ±12 | 10 | 8 | 10 |
| 100 | V | 0.15 | 25 | 200 | 250 | ±10 | ±12 | 10 | 8 | 10 |
| 100 | E | 0.15 | 25 | 200 | 250 | ±10 | ±12 | 10 | 8 | 10 |
| 150 | W | 0.15 | 37.5 | 200 | 375 | ±10 | ±12 | 10 | 8 | 10 |
| rated voltage ($U_R$) 35V (Category voltage: 23V, 125℃) | | | | | | | | | | |
| 4.7 | C | 0.6 | 1.6 | 13.1 | 16.4 | ±10 | ±12 | 8 | 6 | 8 |
| 6.8 | D | 0.4 | 2.3 | 19.0 | 23.8 | ±10 | ±12 | 8 | 6 | 8 |
| 10 | D | 0.3 | 3.5 | 28.0 | 35 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | E | 0.275 | 5.2 | 42.0 | 52.5 | ±10 | ±12 | 8 | 6 | 8 |
| 22 | E | 0.275 | 7.7 | 61.6 | 77 | ±10 | ±12 | 8 | 6 | 8 |
| 33 | W | 0.3 | 11.5 | 92.4 | 115.5 | ±10 | ±12 | 10 | 8 | 10 |
| 47 | W | 0.2 | 16.4 | 131.6 | 164.5 | ±10 | ±12 | 10 | 8 | 10 |
| 47 | E | 0.2 | 16.4 | 131.6 | 164.5 | ±10 | ±12 | 10 | 8 | 10 |
| rated voltage ($U_R$) 50V (Category voltage: 33V, 125℃) | | | | | | | | | | |
| 2.2 | D | 0.5 | 1.1 | 8.8 | 11 | ±10 | ±12 | 8 | 6 | 8 |
| 2.2 | C | 0.5 | 1.1 | 8.8 | 11 | ±10 | ±12 | 8 | 6 | 8 |
| 3.3 | D | 0.4 | 1.6 | 13.2 | 16.5 | ±10 | ±12 | 8 | 6 | 8 |
| 4.7 | D | 0.3 | 2.3 | 18.8 | 23.5 | ±10 | ±12 | 8 | 6 | 8 |
| 6.8 | D | 0.3 | 3.4 | 27.2 | 34 | ±10 | ±12 | 8 | 6 | 8 |
| 10 | E | 0.25 | 5 | 40 | 50 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | W | 0.4 | 7.5 | 60 | 75 | ±10 | ±12 | 10 | 8 | 10 |
| 22 | W | 0.3 | 11 | 88 | 110 | ±10 | ±12 | 10 | 8 | 10 |
| 33 | W | 0.3 | 16.5 | 132 | 165 | ±10 | ±12 | 10 | 8 | 10 |
| rated voltage ($U_R$) 63V (Category voltage: 40V, 125℃) | | | | | | | | | | |
| 1.0 | C | 1.5 | 0.6 | 5.0 | 6.3 | ±10 | ±12 | 6 | 4 | 6 |
| 1.5 | D | 1.2 | 0.9 | 7.5 | 9.4 | ±10 | ±12 | 8 | 6 | 8 |
| 2.2 | D | 0.7 | 1.3 | 11.0 | 13.8 | ±10 | ±12 | 8 | 6 | 8 |
| 3.3 | D | 0.6 | 2.0 | 16.6 | 20.7 | ±10 | ±12 | 8 | 6 | 8 |

Table 2 Rated voltage, class voltage, nominal capacitance, equivalent series resistance (ESR),shell code, and high and low temperature characteristics of the capacitor

| Nominal electricity capacity（CR） μF | shell Number | ESR max 100KHz +25℃ Ω | Leak current max μA | | | Capacity variation range of% | | Loss angle is cut to max% | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | +25℃ | +85℃ | +125℃ | -55℃ +85℃ | +125℃ | -55℃ | +25℃ | +85℃ +125℃ |
| rated voltage ($U_R$) 63V (Category voltage: 40V, 125℃) | | | | | | | | | | |
| 4.7 | E | 0.5 | 2.9 | 23.6 | 29.6 | ±10 | ±12 | 8 | 6 | 8 |
| 6.8 | E | 0.45 | 4.2 | 34.2 | 42.8 | ±10 | ±12 | 8 | 6 | 8 |
| 10 | W | 0.4 | 6.3 | 50.4 | 63 | ±10 | ±12 | 10 | 8 | 10 |
| 10 | E | 0.4 | 6.3 | 50.4 | 63 | ±10 | ±12 | 8 | 6 | 8 |
| 15 | W | 0.4 | 9.4 | 75.6 | 94.5 | ±10 | ±12 | 10 | 8 | 10 |
| 22 | W | 0.3 | 13.8 | 110.8 | 138.6 | ±10 | ±12 | 10 | 8 | 10 |
| rated voltage ($U_R$) 75V (Category voltage 50V, 125℃) | | | | | | | | | | |
| 1.0 | D | 2.0 | 0.7 | 6.0 | 7.5 | ±10 | ±12 | 6 | 4 | 6 |
| 1.5 | D | 1.5 | 1.1 | 9.0 | 11.2 | ±10 | ±12 | 8 | 6 | 8 |
| 2.2 | E | 0.8 | 1.6 | 13.2 | 16.5 | ±10 | ±12 | 8 | 6 | 8 |
| 3.3 | E | 0.6 | 2.4 | 19.8 | 24.7 | ±10 | ±12 | 8 | 6 | 8 |
| 4.7 | E | 0.55 | 3.5 | 28.2 | 35.2 | ±10 | ±12 | 8 | 6 | 8 |
| rated voltage ($U_R$) 100V (Category voltage: 63V, 125℃) | | | | | | | | | | |
| 1.0 | D | 2.0 | 1.0 | 8.0 | 10 | ±10 | ±12 | 6 | 4 | 6 |
| 1.5 | E | 1.3 | 1.5 | 12.0 | 15 | ±10 | ±12 | 8 | 6 | 8 |
| 2.2 | E | 0.6 | 2.2 | 17.6 | 22 | ±10 | ±12 | 8 | 6 | 8 |
| 3.3 | W | 0.6 | 3.3 | 26.4 | 33 | ±10 | ±12 | 10 | 8 | 10 |

Note: 1、It is forbidden to use tantalum capacitor regardless of polarity;

2、The measurement frequency of capacitance and loss angle tangent is 100Hz, $U_{_}=2.2^{0}_{-10}$V, $U_{\sim}=1.0^{0}_{-0.5}$V (valid value);

3、When measuring the 125℃ leakage current, please apply the category voltage;

4、Special size requirements or large capacity products can be negotiated with our company

5、ESR has two standards behind the diagonal standard is the added new standard, which is stricter than the CBAFB detailed specification. If there is a demand, please indicate the order;

**PART NUMBER EXAMPLE**

**CBAEA 475 K 1A A T**