

## Conductive Polymer Aluminum Solid Capacitors

# BC series

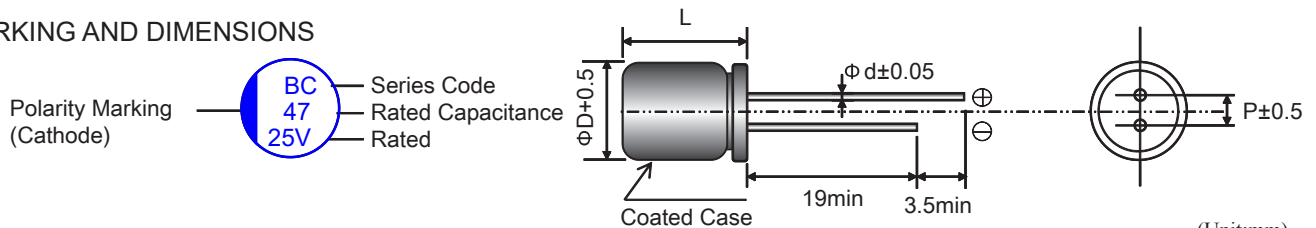
- Standard radial lead type.
- Rated voltage : 2.5~25V.
- Endurance : 2,000hours at 105°C
- Applications : motherboards, servers,VGA ,etc.
- RoHS Compliance.
- Halogen Free compliant

### SPECIFICATIONS

| Items                                                 | Conditions                                                                                                                                                                                                            | Characteristics                                                                                                                                                       |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category Temperature Range                            | —                                                                                                                                                                                                                     | -55 to +105°C                                                                                                                                                         |
| Rated Voltage Range                                   | —                                                                                                                                                                                                                     | 2.5 ~ 25V                                                                                                                                                             |
| Capacitance Tolerance                                 | at 20°C, 120 Hz                                                                                                                                                                                                       | ±20% ( M )                                                                                                                                                            |
| Surge Voltage                                         | at 105°C                                                                                                                                                                                                              | Rated voltage ×1.15V                                                                                                                                                  |
| Leakage Current                                       | at 20°C after 2 minutes                                                                                                                                                                                               | $I \leq 0.2CV$ or 300(uA) Whichever is greater measured,after 2minutes application of rated working voltage at +20°C.<br>Please see the attached characteristics list |
| Dissipation Factor ( tan δ )                          | at 20°C, 120 Hz                                                                                                                                                                                                       | Please see the attached characteristics list                                                                                                                          |
| Characteristics of Impedance at low, high temperature | at -55°C,100kHz                                                                                                                                                                                                       | $Z(-55^{\circ}\text{C}) / Z(+20^{\circ}\text{C}) \leq 1.25$                                                                                                           |
|                                                       | at -25°C,100kHz                                                                                                                                                                                                       | $Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C}) \leq 1.15$                                                                                                             |
| Endurance                                             | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 105°C.                                                                 | Appearance NO significant damage.                                                                                                                                     |
|                                                       |                                                                                                                                                                                                                       | Capacitance change $\leq \pm 20\%$ of the initial value.                                                                                                              |
|                                                       |                                                                                                                                                                                                                       | DF ( tan δ ) $\leq 150\%$ of the initial specified value.                                                                                                             |
|                                                       |                                                                                                                                                                                                                       | ESR $\leq 150\%$ of the initial specified value.                                                                                                                      |
|                                                       |                                                                                                                                                                                                                       | Leakage current $\leq$ The initial specified value.                                                                                                                   |
| Damp Heag (Steady State)                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to store 60°C, 90 to 95% RH for 1,000 hours, without DC applied.                                       | Appearance NO significant damage.                                                                                                                                     |
|                                                       |                                                                                                                                                                                                                       | Capacitance change $\leq \pm 20\%$ of the initial value.                                                                                                              |
|                                                       |                                                                                                                                                                                                                       | DF ( tan δ ) $\leq 150\%$ of the initial specified value.                                                                                                             |
|                                                       |                                                                                                                                                                                                                       | ESR $\leq 150\%$ of the initial specified value.                                                                                                                      |
|                                                       |                                                                                                                                                                                                                       | Leakage current $\leq$ The initial specified value.                                                                                                                   |
| Surge Voltage                                         | The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through aprotective resistor (R = 1 kΩ) and discharge for 5 minutes 30 seconds. | Appearance NO significant damage.                                                                                                                                     |
|                                                       |                                                                                                                                                                                                                       | Capacitance change $\leq \pm 20\%$ of the initial value.                                                                                                              |
|                                                       |                                                                                                                                                                                                                       | DF ( tan δ ) $\leq 150\%$ of the initial specified value.                                                                                                             |
|                                                       |                                                                                                                                                                                                                       | ESR $\leq 150\%$ of the initial specified value.                                                                                                                      |
|                                                       |                                                                                                                                                                                                                       | Leakage current $\leq$ The initial specified value.                                                                                                                   |

※ Note : If any doubt arises, measure the leakage current after following voltage treatment.  
Voltage treatment : DC rated voltage are applied to the capacitors for 120 minutes at 105°C.

### MARKING AND DIMENSIONS



| Size | 6.3×6     | 6.3×8     | 6.3×11    | 8×8       | 8×12      | 10×12     |
|------|-----------|-----------|-----------|-----------|-----------|-----------|
| ΦD   | 6.3       | 6.3       | 6.3       | 8.0       | 8.0       | 10        |
| L    | L+1.0 max | L+1.0 max | L+1.0 max | L+1.5 max | L+1.0 max | L+1.0 max |
| Φd   | 0.45      | 0.5       | 0.5       | 0.6       | 0.6       | 0.6       |
| P    | 2.5       | 2.5       | 2.5       | 3.5       | 3.5       | 5.0       |

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## BC SERIES STANRD CHARACTERISITICS LIST

| WV/Vdc<br>(S.V.) | Cap<br>( $\mu$ F) | Size DXL | Leakage current<br>( $\mu$ A) max. ※2 | ESR<br>(m $\Omega$ ) max. 100k to<br>300 KHz / 20°C | Rated Ripple<br>Current (mA rms)<br>100KHz / 105°C | D.F.<br>(tan $\delta$ ) max.<br>120Hz / 20°C |
|------------------|-------------------|----------|---------------------------------------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------------|
| 2.5<br>(2.9)     | 390               | 6.3×11   | 300                                   | 20                                                  | 3,000                                              | 0.12                                         |
|                  | 560               | 8×8      | 300                                   | 12                                                  | 4,320                                              | 0.12                                         |
|                  | 680               | 8×8      | 340                                   | 12                                                  | 4,520                                              | 0.12                                         |
|                  | 820               | 8×8      | 410                                   | 10                                                  | 5,200                                              | 0.12                                         |
|                  | 1,000             | 10×12    | 500                                   | 10                                                  | 5,230                                              | 0.12                                         |
|                  | 1,500             | 10×12    | 750                                   | 10                                                  | 5,230                                              | 0.12                                         |
| 4<br>(4.6)       | 270               | 6.3×11   | 300                                   | 20                                                  | 3,300                                              | 0.12                                         |
|                  | 390               | 6.3×11   | 312                                   | 24                                                  | 3,300                                              | 0.12                                         |
|                  | 560               | 8×8      | 448                                   | 13                                                  | 4,100                                              | 0.12                                         |
|                  | 560               | 8×12     | 448                                   | 15                                                  | 5,100                                              | 0.12                                         |
|                  | 820               | 8×12     | 656                                   | 10                                                  | 5,100                                              | 0.12                                         |
|                  | 1,200             | 10×12    | 960                                   | 10                                                  | 5,560                                              | 0.12                                         |
| 6.3<br>(7.2)     | 82                | 6.3×6    | 300                                   | 40                                                  | 1,700                                              | 0.12                                         |
|                  | 150               | 6.3×11   | 300                                   | 35                                                  | 2,560                                              | 0.12                                         |
|                  | 220               | 6.3×11   | 300                                   | 20                                                  | 3,160                                              | 0.12                                         |
|                  | 330               | 8×8      | 416                                   | 20                                                  | 3,630                                              | 0.12                                         |
|                  | 390               | 8×8      | 491                                   | 20                                                  | 3,630                                              | 0.12                                         |
|                  | 470               | 8×8      | 592                                   | 15                                                  | 4,210                                              | 0.12                                         |
|                  | 560               | 8×8      | 706                                   | 15                                                  | 4,210                                              | 0.12                                         |
|                  | 680               | 8×12     | 857                                   | 12                                                  | 4,710                                              | 0.12                                         |
|                  | 820               | 10×12    | 1,033                                 | 12                                                  | 5,200                                              | 0.12                                         |
|                  | 1,000             | 10×12    | 1,260                                 | 12                                                  | 5,400                                              | 0.12                                         |
|                  | 1,500             | 10×12    | 1,890                                 | 12                                                  | 5,400                                              | 0.12                                         |
| 10<br>(11.5)     | 47                | 6.3×11   | 300                                   | 25                                                  | 2,200                                              | 0.12                                         |
|                  | 68                | 6.3×11   | 300                                   | 25                                                  | 2,200                                              | 0.12                                         |
|                  | 100               | 6.3×11   | 300                                   | 25                                                  | 2,200                                              | 0.12                                         |
|                  | 120               | 6.3×8    | 300                                   | 25                                                  | 2,000                                              | 0.12                                         |
|                  | 120               | 8×8      | 300                                   | 25                                                  | 3,700                                              | 0.12                                         |
|                  | 150               | 8×8      | 300                                   | 25                                                  | 3,700                                              | 0.12                                         |
|                  | 270               | 8×12     | 540                                   | 12                                                  | 4,500                                              | 0.12                                         |
|                  | 330               | 8×12     | 660                                   | 12                                                  | 4,500                                              | 0.12                                         |
|                  | 470               | 10×12    | 940                                   | 12                                                  | 5,400                                              | 0.12                                         |
|                  | 560               | 10×12    | 1,120                                 | 12                                                  | 5,400                                              | 0.12                                         |
| 16<br>(18.4)     | 39                | 6.3×6    | 300                                   | 50                                                  | 1,620                                              | 0.12                                         |
|                  | 82                | 6.3×8    | 300                                   | 40                                                  | 1,890                                              | 0.12                                         |
|                  | 100               | 6.3×11   | 320                                   | 25                                                  | 2,820                                              | 0.12                                         |
|                  | 180               | 8×12     | 576                                   | 20                                                  | 3,640                                              | 0.12                                         |
|                  | 270               | 8×12     | 864                                   | 20                                                  | 3,640                                              | 0.12                                         |
|                  | 330               | 10×12    | 1,056                                 | 16                                                  | 4,270                                              | 0.12                                         |
|                  | 470               | 10×12    | 1,504                                 | 16                                                  | 4,270                                              | 0.12                                         |

※ 1. Capacitance tolerance :  $\pm 20\%$  (M)

※ 2. After 2 minutes

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| WV/Vdc<br>(S.V.) | Cap<br>( $\mu$ F) | Size code<br>DXL | Leakage current<br>( $\mu$ A) max. ※2 | ESR<br>(m $\Omega$ ) max. 100k to<br>300 KHz / 20°C | Rated Ripple<br>Current<br>(mA rms) 100KHz /<br>105°C | D.F.<br>(tan $\delta$ ) max.<br>120Hz / 20°C |
|------------------|-------------------|------------------|---------------------------------------|-----------------------------------------------------|-------------------------------------------------------|----------------------------------------------|
| 20<br>(23)       | 22                | 6.3×6            | 300                                   | 60                                                  | 1,450                                                 | 0.12                                         |
|                  | 33                | 6.3×11           | 300                                   | 50                                                  | 1,620                                                 | 0.12                                         |
|                  | 47                | 8×8              | 300                                   | 45                                                  | 1,890                                                 | 0.12                                         |
|                  | 68                | 8×8              | 300                                   | 40                                                  | 2,400                                                 | 0.12                                         |
|                  | 100               | 8×12             | 400                                   | 24                                                  | 3,320                                                 | 0.12                                         |
|                  | 150               | 8×12             | 600                                   | 20                                                  | 3,800                                                 | 0.12                                         |
| 25<br>(25)       | 6.8               | 6.3×6            | 300                                   | 80                                                  | 1,200                                                 | 0.12                                         |
|                  | 10                | 6.3×11           | 300                                   | 60                                                  | 1,500                                                 | 0.12                                         |
|                  | 15                | 6.3×11           | 300                                   | 60                                                  | 1,800                                                 | 0.12                                         |
|                  | 22                | 8×8              | 300                                   | 50                                                  | 2,000                                                 | 0.12                                         |
|                  | 33                | 8×12             | 300                                   | 30                                                  | 3,130                                                 | 0.12                                         |
|                  | 47                | 8×12             | 300                                   | 30                                                  | 3,130                                                 | 0.12                                         |
|                  | 56                | 10×12            | 300                                   | 28                                                  | 3,800                                                 | 0.12                                         |

※ 1. Capacitance tolerance :  $\pm 20\%$  (M)

※ 2. After 2 minutes

### FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

| Frequency  | 120Hz $\leq$ f < 1kHz | 1KHz $\leq$ f < 10kHz | 10kHz $\leq$ f < 100kHz | 100kHz $\leq$ f < 500kHz |
|------------|-----------------------|-----------------------|-------------------------|--------------------------|
| Coefficien | 0.05                  | 0.3                   | 0.7                     | 1                        |