

## Standard Bipolar Capacitors

GREEN  
CAP Anti-  
cleaning solvent

• Guarantees 2000 hours at 85°C.

Bipolar  
R2B



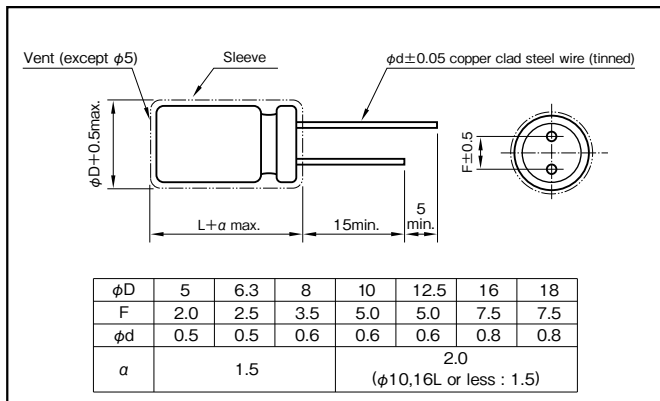
Marking color : White print on a blue sleeve

## Specifications

| Item                                                                              | Performance                                                                                      |               |                                                         |      |      |      |      |      |      |      |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------|------|------|------|------|------|------|------|
| Category temperature range (°C)                                                   | -40 to +85                                                                                       |               |                                                         |      |      |      |      |      |      |      |
| Tolerance at rated capacitance (%)                                                | ±20 (20°C,120Hz)                                                                                 |               |                                                         |      |      |      |      |      |      |      |
| Leakage current (µA)                                                              | Less than 0.03CV + 3 (after 5 minutes) C : Rated capacitance (µF) ; V : Rated voltage (V) (20°C) |               |                                                         |      |      |      |      |      |      |      |
| Tangent of loss angle (tanδ)                                                      | Rated voltage (V)                                                                                |               | 6.3                                                     | 10   | 16   | 25   | 35   | 50   | 63   | 100  |
|                                                                                   | tanδ (max.)                                                                                      |               | 0.24                                                    | 0.24 | 0.20 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |
|                                                                                   | 0.02 is added to every 1000µF increase over 1000µF (20°C,120Hz)                                  |               |                                                         |      |      |      |      |      |      |      |
| Characteristics at high and low temperature                                       | Rated voltage (V)                                                                                |               | 6.3                                                     | 10   | 16   | 25   | 35   | 50   | 63   | 100  |
|                                                                                   | Impedance ratio (max.)                                                                           | Z-25°C/Z+20°C | 4                                                       | 3    | 2    | 2    | 2    | 2    | 2    | 2    |
|                                                                                   |                                                                                                  | Z-40°C/Z+20°C | 10                                                      | 8    | 6    | 4    | 3    | 3    | 3    | 3    |
| 0.5 for -25°C, 1 for -40°C are added to every 1000µF increase over 1000µF (120Hz) |                                                                                                  |               |                                                         |      |      |      |      |      |      |      |
| Endurance (85°C)<br>(Applied ripple current)                                      | Test time                                                                                        |               | 2000 hours (with the polarity inverted every 250 hours) |      |      |      |      |      |      |      |
|                                                                                   | Leakage current                                                                                  |               | The initial specified value or less                     |      |      |      |      |      |      |      |
|                                                                                   | Percentage of capacitance change                                                                 |               | Within ±20% of initial value                            |      |      |      |      |      |      |      |
|                                                                                   | Tangent of the loss angle                                                                        |               | 150% or less of the initial specified value             |      |      |      |      |      |      |      |
| Shelf life (85°C)                                                                 | Test time : 1000 hours. Other have same as endurance. Voltage application treatment              |               |                                                         |      |      |      |      |      |      |      |
| Applicable standards                                                              | JIS C5101-1, -4 1998 (IEC 60384-1 1992, -4 1985)                                                 |               |                                                         |      |      |      |      |      |      |      |

## Outline Drawing

Unit : mm



## Coefficient of Frequency for Rated Ripple Current

| Frequency (Hz)    | 50 · 60 | 120 | 1k  | 10k · 100k |
|-------------------|---------|-----|-----|------------|
| Rated voltage (V) |         |     |     |            |
| 6.3 to 16         | 0.8     | 1   | 1.1 | 1.2        |
| 25 to 35          | 0.8     | 1   | 1.5 | 1.7        |
| 50 to 100         | 0.8     | 1   | 1.6 | 1.9        |

## Part numbering system (example : 10V1000µF)

|             |   |                      |   |                          |                              |               |   |   |                        |
|-------------|---|----------------------|---|--------------------------|------------------------------|---------------|---|---|------------------------|
| R2B         | — | 10                   | V | 102                      | M                            | I5            | # | — | □                      |
| Series code |   | Rated voltage symbol |   | Rated capacitance symbol | Capacitance tolerance symbol | Casing symbol |   |   | Taping(Forming) symbol |

## Casing symbol

| Case φD×L (mm) | Casing Symbol | Case φD×L (mm) | Casing Symbol | Case φD×L (mm) | Casing Symbol | Case φD×L (mm) | Casing Symbol |
|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| 5×11           | E3            | 10×12.5        | H3            | 12.5×20        | I5            | 16×31.5        | J 7           |
| 6.3×11         | F3            | 10×16          | H4            | 12.5×25        | I6            | 16×35.5        | J 8           |
| 8×11.5         | G3            | 10×20          | H5            | 16×25          | J6            | 18×35.5        | K8            |

## Standard Ratings

| Rated voltage (V) | 6.3            |                           | 10             |                           | 16             |                           | 25             |                           | 35             |                           | 50             |                           | 63             |                           | 100            |                           |
|-------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|
|                   | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) | Case φD×L (mm) | Rated ripple current (mA) |
| 1                 | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         | 5×11           | 14                        | —              | —                         | 5×11           | 16                        |
| 2.2               | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         | 5×11           | 21                        | 5×11           | 23                        | 5×11           | 24                        |
| 3.3               | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         | 5×11           | 26                        | 5×11           | 28                        | 6.3×11         | 34                        |
| 4.7               | —              | —                         | —              | —                         | —              | —                         | 5×11           | 28                        | 5×11           | 28                        | 5×11           | 31                        | 5×11           | 34                        | 6.3×11         | 41                        |
| 10                | —              | —                         | —              | —                         | 5×11           | 39                        | 5×11           | 40                        | 5×11           | 42                        | 5×11           | 45                        | 6.3×11         | 57                        | 8×11.5         | 70                        |
| 22                | —              | —                         | 5×11           | 52                        | 5×11           | 58                        | 5×11           | 60                        | 6.3×11         | 71                        | 6.3×11         | 77                        | 8×11.5         | 89                        | 10×16          | 136                       |
| 33                | 5×11           | 58                        | 5×11           | 63                        | 5×11           | 71                        | 6.3×11         | 84                        | 6.3×11         | 87                        | 8×11.5         | 111                       | 10×12.5        | 144                       | 10×20          | 181                       |
| 47                | 5×11           | 69                        | 5×11           | 75                        | 6.3×11         | 97                        | 6.3×11         | 100                       | 8×11.5         | 122                       | 10×12.5        | 157                       | 10×16          | 188                       | 12.5×20        | 248                       |
| 100               | 6.3×11         | 115                       | 6.3×11         | 126                       | 8×11.5         | 167                       | 10×12.5        | 204                       | 10×12.5        | 212                       | 10×20          | 273                       | 12.5×20        | 343                       | 16×25          | 458                       |
| 220               | 8×11.5         | 202                       | 8×11.5         | 221                       | 10×12.5        | 294                       | 10×16          | 332                       | 10×20          | 375                       | 12.5×25        | 506                       | 16×25          | 645                       | 18×35.5        | 837                       |
| 330               | 8×11.5         | 247                       | 10×12.5        | 322                       | 10×16          | 394                       | 10×20          | 444                       | 12.5×20        | 526                       | 12.5×25        | 620                       | —              | —                         | —              | —                         |
| 470               | 10×12.5        | 350                       | 10×16          | 420                       | 10×20          | 513                       | 12.5×20        | 607                       | 12.5×25        | 685                       | 16×25          | 861                       | —              | —                         | —              | —                         |
| 1000              | 10×20          | 611                       | 12.5×20        | 767                       | 12.5×25        | 935                       | 16×25          | 1120                      | 16×31.5        | 1270                      | —              | —                         | —              | —                         | —              | —                         |
| 2200              | 12.5×25        | 1090                      | 16×25          | 1380                      | 16×31.5        | 1660                      | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         |
| 3300              | 16×25          | 1490                      | 16×31.5        | 1760                      | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         |
| 4700              | 16×31.5        | 1880                      | 18×35.5        | 2280                      | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         | —              | —                         |

(Note) Rated ripple current : 85°C, 120Hz

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