

## Radial Lead Type

Series: SU(Bi-polar) Type : A

■ Features Endurance: 85°C 2000 h

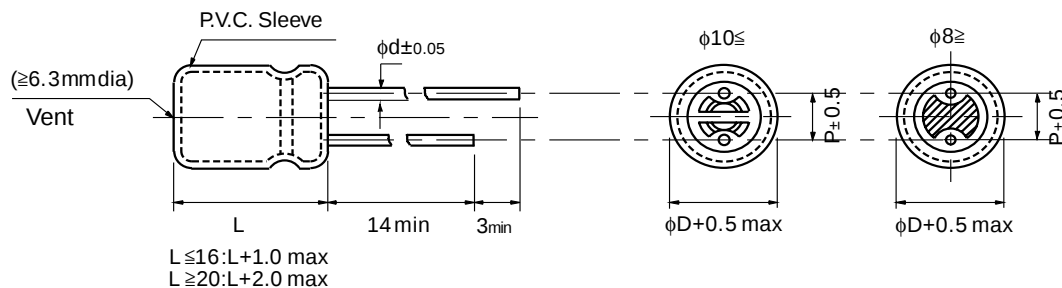
Japan  
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### ■ Specifications

|                                       |                                                                                                                                                                                          |                                    |    |    |    |    |    |                             |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----|----|----|----|----|-----------------------------|
| Category temp. range                  | -40 to +85°C                                                                                                                                                                             |                                    |    |    |    |    |    |                             |
| Rated W.V. Range                      | 6.3 to 50 V .DC                                                                                                                                                                          |                                    |    |    |    |    |    |                             |
| Nominal Cap. Range                    | 0.47 to 6800 μ F                                                                                                                                                                         |                                    |    |    |    |    |    |                             |
| Capacitance Tolerance                 | ±20 % (120Hz/+20°C)                                                                                                                                                                      |                                    |    |    |    |    |    |                             |
| DC Leakage Current                    | I ≤ 0.03 CV + 3(μ A) after 5minutes                                                                                                                                                      |                                    |    |    |    |    |    |                             |
| Dissipation Factor                    | Please see the attached standard products list.                                                                                                                                          |                                    |    |    |    |    |    |                             |
| Characteristics<br>at Low Temperature | W.V. (V)                                                                                                                                                                                 | 6.3                                | 10 | 16 | 25 | 35 | 50 | (Impedance ratio at 120 Hz) |
|                                       | Z(-25°C)/Z(+20°C)                                                                                                                                                                        | 4                                  | 3  | 2  | 2  | 2  | 2  |                             |
|                                       | Z(-40°C)/Z(+20°C)                                                                                                                                                                        | 8                                  | 6  | 4  | 4  | 4  | 3  |                             |
|                                       | 1. Add 0.5 per 1000 μF for product of 1000 μF or more at -25 °C<br>2. Add 1.0 per 1000 μF for product of 1000 μF or more at -40 °C                                                       |                                    |    |    |    |    |    |                             |
| Endurance                             | After 2000 hours application of DC working voltage (1000 hours for each polarity) at +85°C, the capacitor shall meet the following limits.                                               |                                    |    |    |    |    |    |                             |
|                                       | Capacitance change                                                                                                                                                                       | ± 20% of initial measured value    |    |    |    |    |    |                             |
|                                       | D.F.                                                                                                                                                                                     | ≤ 150 % of initial specified value |    |    |    |    |    |                             |
|                                       | DC leakage current                                                                                                                                                                       | ≤ initial specified value          |    |    |    |    |    |                             |
| Shelf Life                            | After storage for 1000 hours at +85±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in "Endurance".(With voltage treatment) |                                    |    |    |    |    |    |                             |

### ■ Dimensions in mm (not to scale)



|              |     |     |     |     |      |     |     |
|--------------|-----|-----|-----|-----|------|-----|-----|
| Body Dia. φD | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
| Lead Dia. φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| Lead space P | 2   | 2.5 | 3.5 | 5   | 5    | 7.5 | 7.5 |

■ Standard Products(Bi-polar)

| W.V. | Cap.<br>(±20%) | Case size |        | Specification                        |      | Lead Length |            |              |              | Part No.       | Min. Packaging Qty |        |
|------|----------------|-----------|--------|--------------------------------------|------|-------------|------------|--------------|--------------|----------------|--------------------|--------|
|      |                | Dia.      | Length | Ripple current<br>(120Hz)<br>(+85°C) | D.F. | Lead Dia.   | Lead Space |              |              |                | Straight Leads     | Taping |
|      |                |           |        |                                      |      |             | Straight   | Taping<br>*B | Taping<br>*i |                |                    |        |
| (V)  | (μF)           | (mm)      | (mm)   | (mA)                                 |      | (mm)        | (mm)       | (mm)         | (mm)         |                | (pcs)              | (pcs)  |
| 6.3  | 330            | 8         | 11.5   | 250                                  | 0.30 | 0.6         | 3.5        | 5.0          |              | ECEA0JN331U( ) | 200                | 1000   |
|      | 470            | 10        | 12.5   | 310                                  | 0.30 | 0.6         | 5.0        | 5.0          |              | ECEA0JN471X( ) | 200                | 500    |
|      | 1000           | 10        | 20     | 430                                  | 0.30 | 0.6         | 5.0        | 5.0          |              | ECEA0JN102U( ) | 200                | 500    |
|      | 2200           | 12.5      | 25     | 660                                  | 0.32 | 0.6         | 5.0        | 5.0          |              | ECEA0JN222U( ) | 200                | 500    |
|      | 3300           | 16        | 25     | 760                                  | 0.34 | 0.8         | 7.5        | 7.5          |              | ECEA0JN332U( ) | 100                | 250    |
|      | 4700           | 16        | 31.5   | 1170                                 | 0.36 | 0.8         | 7.5        |              |              | ECEA0JN472U    | 100                |        |
|      | 6800           | 18        | 35.5   | 1450                                 | 0.40 | 0.8         | 7.5        |              |              | ECEA0JN682U    | 50                 |        |
| 10   | 47             | 5         | 11.0   | 90                                   | 0.25 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1AN470U( ) | 200                | 2000   |
|      | 100            | 6.3       | 11.2   | 130                                  | 0.25 | 0.5         | 2.5        | 5.0          | 2.5          | ECEA1AN101X( ) | 200                | 2000   |
|      | 220            | 8         | 11.5   | 200                                  | 0.25 | 0.6         | 3.5        | 5.0          |              | ECEA1AN221U( ) | 200                | 1000   |
|      | 330            | 10        | 16     | 280                                  | 0.25 | 0.6         | 5.0        | 5.0          |              | ECEA1AN331U( ) | 200                | 500    |
|      | 470            | 10        | 16     | 340                                  | 0.25 | 0.6         | 5.0        | 5.0          |              | ECEA1AN471U( ) | 200                | 500    |
|      | 1000           | 12.5      | 20     | 470                                  | 0.25 | 0.6         | 5.0        | 5.0          |              | ECEA1AN102X( ) | 200                | 500    |
|      | 2200           | 16        | 25     | 690                                  | 0.27 | 0.8         | 7.5        | 7.5          |              | ECEA1AN222U( ) | 100                | 250    |
|      | 3300           | 16        | 31.5   | 1090                                 | 0.29 | 0.8         | 7.5        |              |              | ECEA1AN332U    | 100                |        |
|      | 4700           | 18        | 35.5   | 1200                                 | 0.31 | 0.8         | 7.5        |              |              | ECEA1AN472U    | 50                 |        |
| 16   | 10             | 5         | 11     | 40                                   | 0.20 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1CN100U( ) | 200                | 2000   |
|      | 22             | 5         | 11     | 60                                   | 0.20 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1CN220U( ) | 200                | 2000   |
|      | 33             | 5         | 11     | 80                                   | 0.20 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1CN330U( ) | 200                | 2000   |
|      | 47             | 6.3       | 11.2   | 100                                  | 0.20 | 0.5         | 2.5        | 5.0          | 2.5          | ECEA1CN470U( ) | 200                | 2000   |
|      | 220            | 10        | 12.5   | 260                                  | 0.20 | 0.6         | 5.0        | 5.0          |              | ECEA1CN221X( ) | 200                | 500    |
|      | 330            | 10        | 16     | 330                                  | 0.20 | 0.6         | 5.0        | 5.0          |              | ECEA1CN331U( ) | 200                | 500    |
|      | 470            | 10        | 20     | 380                                  | 0.20 | 0.6         | 5.0        | 5.0          |              | ECEA1CN471U( ) | 200                | 500    |
|      | 1000           | 12.5      | 25     | 560                                  | 0.20 | 0.6         | 5.0        | 5.0          |              | ECEA1CN102U( ) | 200                | 500    |
|      | 2200           | 16        | 31.5   | 750                                  | 0.22 | 0.8         | 7.5        |              |              | ECEA1CN222U    | 100                |        |
|      | 3300           | 18        | 35.5   | 900                                  | 0.24 | 0.8         | 7.5        |              |              | ECEA1CN332U    | 50                 |        |
| 25   | 10             | 5         | 11     | 45                                   | 0.15 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1EN100U( ) | 200                | 2000   |
|      | 22             | 5         | 11     | 60                                   | 0.15 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1EN220X( ) | 200                | 2000   |
|      | 33             | 6.3       | 11.2   | 90                                   | 0.15 | 0.5         | 2.5        | 5.0          | 2.5          | ECEA1EN330U( ) | 200                | 2000   |
|      | 47             | 6.3       | 11.2   | 110                                  | 0.15 | 0.5         | 2.5        | 5.0          | 2.5          | ECEA1EN470U( ) | 200                | 2000   |
|      | 100            | 8         | 11.5   | 180                                  | 0.15 | 0.6         | 3.5        | 5.0          |              | ECEA1EN101U( ) | 200                | 1000   |
|      | 220            | 10        | 16     | 320                                  | 0.15 | 0.6         | 5.0        | 5.0          |              | ECEA1EN221U( ) | 200                | 500    |
|      | 330            | 12.5      | 20     | 350                                  | 0.15 | 0.6         | 5.0        | 5.0          |              | ECEA1EN331U( ) | 200                | 500    |
|      | 470            | 12.5      | 20     | 430                                  | 0.15 | 0.6         | 5.0        | 5.0          |              | ECEA1EN471U( ) | 200                | 500    |
|      | 1000           | 16        | 25     | 680                                  | 0.15 | 0.8         | 7.5        | 7.5          |              | ECEA1EN102U( ) | 100                | 250    |
|      | 2200           | 18        | 35.5   | 900                                  | 0.17 | 0.8         | 7.5        |              |              | ECEA1EN222U    | 50                 |        |
| 35   | 10             | 5         | 11     | 43                                   | 0.15 | 0.5         | 2.0        | 5.0          | 2.5          | ECEA1VN100U( ) | 200                | 2000   |
|      | 22             | 6.3       | 11.2   | 80                                   | 0.15 | 0.5         | 2.5        | 5.0          | 2.5          | ECEA1VN220U( ) | 200                | 2000   |
|      | 33             | 8         | 11.5   | 100                                  | 0.15 | 0.6         | 3.5        | 5.0          |              | ECEA1VN330U( ) | 200                | 1000   |
|      | 47             | 8         | 11.5   | 120                                  | 0.15 | 0.6         | 3.5        | 5.0          |              | ECEA1VN470U( ) | 200                | 1000   |
|      | 100            | 10        | 16     | 230                                  | 0.15 | 0.6         | 5.0        | 5.0          |              | ECEA1VN101U( ) | 200                | 500    |
|      | 220            | 12.5      | 20     | 360                                  | 0.15 | 0.6         | 5.0        | 5.0          |              | ECEA1VN221U( ) | 200                | 500    |

When requesting taped product, please put the letter "B" or "i" between the "( )". Lead wire pitch B=5mm, 7.5mm. i=2.5mm.

The taping dimentions are explained on p.25 of our Catalog. Please use it as a reference guide.

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Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use. Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Standard Products(Bi-polar)

| W.V. | Cap.<br>(±20%) | Case size |        | Specification                                   |      | Lead Length  |            |              |              | Part No.       | Min.Packaging Q'ty |        |
|------|----------------|-----------|--------|-------------------------------------------------|------|--------------|------------|--------------|--------------|----------------|--------------------|--------|
|      |                | Dia.      | Length | Ripple<br>current<br>(120Hz)<br>(+85°C)<br>(mA) | D.F. | Lead<br>Dia. | Lead Space |              |              |                | Straight<br>Leads  | Taping |
|      |                |           |        |                                                 |      |              | Straight   | Taping<br>*B | Taping<br>*i |                |                    |        |
| (V)  | (μF)           | (mm)      | (mm)   |                                                 |      | (mm)         | (mm)       | (mm)         |              |                | (pcs)              | (pcs)  |
| 35   | 330            | 12.5      | 20     | 450                                             | 0.15 | 0.6          | 5.0        | 5.0          |              | ECEA1VN331U( ) | 200                | 500    |
|      | 470            | 12.5      | 25     | 590                                             | 0.15 | 0.6          | 5.0        | 5.0          |              | ECEA1VN471U( ) | 200                | 500    |
| 50   | 0.47           | 5         | 11     | 10                                              | 0.15 | 0.5          | 2.0        | 5.0          | 2.5          | ECEA1HNR47U( ) | 200                | 2000   |
|      | 1              | 5         | 11     | 10                                              | 0.15 | 0.5          | 2.0        | 5.0          | 2.5          | ECEA1HN010U( ) | 200                | 2000   |
|      | 2.2            | 5         | 11     | 18                                              | 0.15 | 0.5          | 2.0        | 5.0          | 2.5          | ECEA1HN2R2U( ) | 200                | 2000   |
|      | 3.3            | 5         | 11     | 25                                              | 0.15 | 0.5          | 2.0        | 5.0          | 2.5          | ECEA1HN3R3U( ) | 200                | 2000   |
|      | 4.7            | 5         | 11     | 30                                              | 0.15 | 0.5          | 2.0        | 5.0          | 2.5          | ECEA1HN4R7U( ) | 200                | 2000   |
|      | 10             | 6.3       | 11.2   | 50                                              | 0.15 | 0.5          | 2.5        | 5.0          | 2.5          | ECEA1HN100U( ) | 200                | 2000   |
|      | 22             | 8         | 11.5   | 90                                              | 0.15 | 0.6          | 3.5        | 5.0          |              | ECEA1HN220U( ) | 200                | 1000   |
|      | 33             | 8         | 11.5   | 110                                             | 0.15 | 0.6          | 3.5        | 5.0          |              | ECEA1HN330U( ) | 200                | 1000   |
|      | 47             | 10        | 12.5   | 140                                             | 0.15 | 0.6          | 5.0        | 5.0          |              | ECEA1HN470U( ) | 200                | 500    |
|      | 100            | 10        | 20     | 250                                             | 0.15 | 0.6          | 5.0        | 5.0          |              | ECEA1HN101U( ) | 200                | 500    |
|      | 220            | 12.5      | 25     | 360                                             | 0.15 | 0.6          | 5.0        | 5.0          |              | ECEA1HN221U( ) | 200                | 500    |
|      | 330            | 16        | 25     | 450                                             | 0.15 | 0.8          | 7.5        | 7.5          |              | ECEA1HN331U( ) | 100                | 250    |
| 470  | 16             | 31.5      | 590    | 0.15                                            | 0.8  | 7.5          |            |              | ECEA1HN471U  | 100            |                    |        |

When requesting taped product, please put the letter "B" or "i" between the "( )". Lead wire pitch B=5mm, 7.5mm. i=2.5mm.

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