

## Aluminum Electrolytic Capacitors

### Radial Lead Type

### KA-A (Bi-polar) series



#### Features

- Endurance : 85 °C 1000 h
- 7 mm height
- RoHS compliant

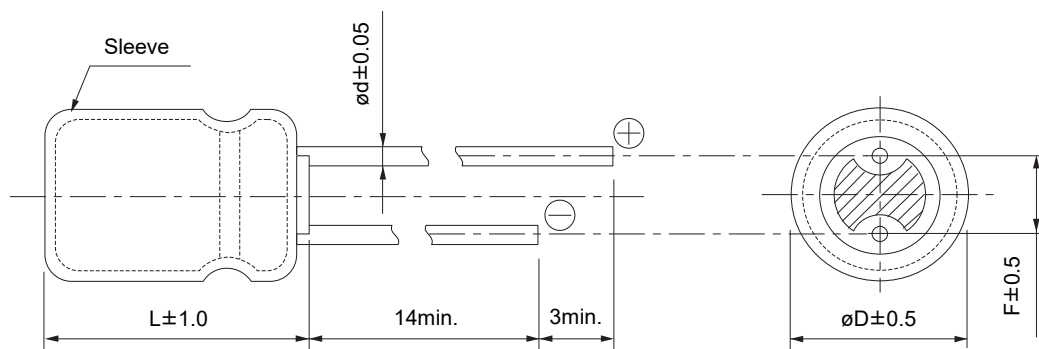
#### Specifications

|                            |   |                                   |
|----------------------------|---|-----------------------------------|
| Category temp. range       | -40 °C to +85 °C  |                                   |
| Rated voltage range        | 4 V to 50 V   |                                   |
| Capacitance range          | 2.2 µF to 100 µF  |                                   |
| Capacitance tolerance      | ±20 % (120 Hz / +20°C)  |                                   |
| Leakage current            | I ≤ 0.05 CV or 10 (µA) After 2 minutes (Whichever is greater)   |                                   |
| Dissipation factor (tan δ) | Please see the attached characteristics list  |                                   |
| Endurance                  | After 1000 h application of DC working voltage (500 h for each polarity) at +85 °C±2 °C, when the capacitors are restored to 20 °C, the capacitors shall meet the following limits.       |                                   |
|                            | Capacitance change  | Within ±20 % of the initial value |
|                            | Dissipation factor (tan δ)  | ≤ 200 % of the initial limit      |
|                            | DC leakage current  | Within the initial limit          |
| Shelf life                 | After storage for 1000 h at +85 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance.<br>(With voltage treatment) |                                   |

#### Frequency correction factor for ripple current

| Freq. (Hz) | 50, 60 | 120  | 1 k  | 10 k to |
|------------|--------|------|------|---------|
| Cap. (µF)  |        |      |      |         |
| 2.2 to 100 | 0.70   | 1.00 | 1.30 | 1.70    |

#### Dimensions



| Unit : mm |      |      |      |
|-----------|------|------|------|
| øD        | 4.0  | 5.0  | 6.3  |
| ød        | 0.45 | 0.45 | 0.45 |
| F         | 1.5  | 2.0  | 2.5  |

## Characteristics list

Endurance : 85 °C 1000 h (500 h for each polarity)

| Rated voltage<br>(V) | Capacitance<br>(±20 %)<br>(μF) | Case size<br>(mm) |     | Specification                               |                     | Lead length<br>(mm)  |            |              |              | Part No.       | Min. Packaging<br>Q'ty (PCS) |        |
|----------------------|--------------------------------|-------------------|-----|---|---------------------|----------------------|------------|--------------|--------------|----------------|------------------------------|--------|
|                      |                                | øD                | L   | Ripple<br>current <sup>*1</sup><br>(mA rms) | tan δ <sup>*2</sup> | Lead<br>dia.<br>(ød) | Lead space |              |              |                | Strai-<br>ght<br>leads       | Taping |
|                      |                                |                   |     |   |                     |                      | Straight   | Taping<br>*B | Taping<br>*i |                |                              |        |
| 4                    | 100                            | 6.3               | 7.0 | 61  | 0.35                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA0GKN101( ) | 200                          | 2000   |
| 6.3                  | 22                             | 5.0               | 7.0 | 29  | 0.24                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA0JKN220( ) | 200                          | 2000   |
|                      | 33                             | 5.0               | 7.0 | 38  | 0.24                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA0JKN330( ) | 200                          | 2000   |
|                      | 47                             | 6.3               | 7.0 | 46  | 0.24                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA0JKN470( ) | 200                          | 2000   |
| 10                   | 10                             | 4.0               | 7.0 | 25  | 0.20                | 0.45                 | 1.5        | 5.0          | 2.5          | ECEA1AKN100( ) | 200                          | 2000   |
|                      | 22                             | 5.0               | 7.0 | 35  | 0.20                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1AKN220( ) | 200                          | 2000   |
|                      | 33                             | 6.3               | 7.0 | 43  | 0.20                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1AKN330( ) | 200                          | 2000   |
|                      | 47                             | 6.3               | 7.0 | 65  | 0.20                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1AKN470( ) | 200                          | 2000   |
| 16                   | 4.7                            | 4.0               | 7.0 | 20  | 0.16                | 0.45                 | 1.5        | 5.0          | 2.5          | ECEA1CKN4R7( ) | 200                          | 2000   |
|                      | 10                             | 5.0               | 7.0 | 25  | 0.16                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1CKN100( ) | 200                          | 2000   |
|                      | 22                             | 6.3               | 7.0 | 39  | 0.16                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1CKN220( ) | 200                          | 2000   |
|                      | 33                             | 6.3               | 7.0 | 60  | 0.16                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1CKN330( ) | 200                          | 2000   |
| 25                   | 3.3                            | 4.0               | 7.0 | 16  | 0.16                | 0.45                 | 1.5        | 5.0          | 2.5          | ECEA1EKN3R3( ) | 200                          | 2000   |
|                      | 4.7                            | 5.0               | 7.0 | 21  | 0.16                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1EKN4R7( ) | 200                          | 2000   |
|                      | 10                             | 6.3               | 7.0 | 28  | 0.16                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1EKN100( ) | 200                          | 2000   |
|                      | 22                             | 6.3               | 7.0 | 55  | 0.16                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1EKN220( ) | 200                          | 2000   |
| 35                   | 2.2                            | 4.0               | 7.0 | 12  | 0.14                | 0.45                 | 1.5        | 5.0          | 2.5          | ECEA1VKN2R2( ) | 200                          | 2000   |
|                      | 3.3                            | 5.0               | 7.0 | 16  | 0.14                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1VKN3R3( ) | 200                          | 2000   |
|                      | 4.7                            | 5.0               | 7.0 | 22  | 0.14                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1VKN4R7( ) | 200                          | 2000   |
|                      | 10                             | 6.3               | 7.0 | 30  | 0.14                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1VKN100( ) | 200                          | 2000   |
| 50                   | 2.2                            | 5.0               | 7.0 | 16  | 0.12                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1HKN2R2( ) | 200                          | 2000   |
|                      | 3.3                            | 5.0               | 7.0 | 16  | 0.12                | 0.45                 | 2.0        | 5.0          | 2.5          | ECEA1HKN3R3( ) | 200                          | 2000   |
|                      | 4.7                            | 6.3               | 7.0 | 23  | 0.12                | 0.45                 | 2.5        | 5.0          | 2.5          | ECEA1HKN4R7( ) | 200                          | 2000   |

\*1: Ripple current (120 Hz / +85 °C)

\*2: tan δ (120 Hz / +20 °C)

• When requesting taped product, please put the letter "B" or "i" between the "( )".

Lead wire pitch \*B=5 mm, i=2.5 mm.

• Please refer to the page of "Taping dimensions".