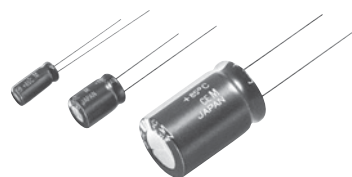


## Radial Lead Type

Series : **M** Type : **A**



### Features

- Endurance : 85 °C 2000 h
- Smaller than series SU
- RoHS compliant

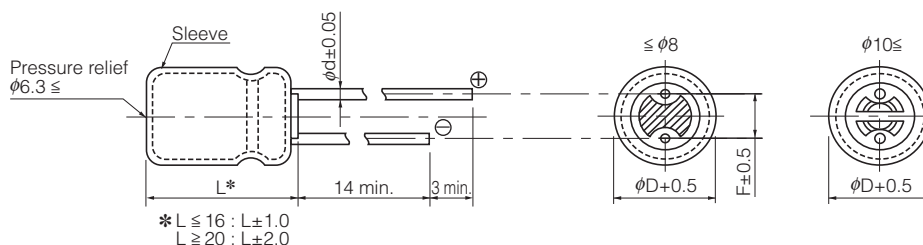
### Specifications

|                            |                                                                                                                                                                                            |                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Category temperature range | -40 °C to + 85 °C                                                                                                                                                                          | -25 °C to +85 °C                           |
| Rated voltage range        | 6.3 V.DC to 100 V.DC                                                                                                                                                                       | 160 V.DC to 450 V.DC                       |
| Capacitance range          | 2.2 μF to 22000 μF                                                                                                                                                                         | 2.2 μF to 470 μF                           |
| Capacitance tolerance      | ±20 % (120 Hz/+20 °C)                                                                                                                                                                      |                                            |
| Leakage current            | $I \leq 0.01 CV$ or 3 (μA) After 2 minutes<br>(Whichever is greater)                                                                                                                       | $I \leq 0.06 CV + 10$ (μA) After 2 minutes |
| Dissipation factor (tan δ) | Please see the attached characteristics list                                                                                                                                               |                                            |
| Endurance                  | After applying rated working voltage for 2000 hours at +85°C±2 °C, when the capacitors are restored to 20 °C, capacitors shall meet the following limits.                                  |                                            |
|                            | Capacitance change                                                                                                                                                                         | Within ±20 % of the initial value          |
|                            | tan δ                                                                                                                                                                                      | ≤ 150 % of the initial limit               |
|                            | DC leakage current                                                                                                                                                                         | Within the initial limit                   |
| Shelf life                 | After storage for 1000 hours at +85 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment) |                                            |

### Frequency correction factor for ripple current

|                   |        |      |      |         |
|-------------------|--------|------|------|---------|
| Frequency (Hz)    | 50, 60 | 120  | 1 k  | 10 k to |
| Correction factor | 0.70   | 1.00 | 1.30 | 1.70    |

### Dimensions



(Unit : mm)

|    |     |     |     |     |      |     |     |
|----|-----|-----|-----|-----|------|-----|-----|
| φD | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| F  | 2.0 | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |

## Characteristics list

Endurance : 85 °C 2000 h

| Rated voltage<br>(V.DC) | Cap.<br>(±20 %) (μF) | Case size (mm) |      | Specification                                         |                               | Lead length (mm) |            |              |              | Part No.     | Min. Packaging Q'ty     |                 |
|-------------------------|----------------------|----------------|------|-------------------------------------------------------|-------------------------------|------------------|------------|--------------|--------------|--------------|-------------------------|-----------------|
|                         |                      | φD             | L    | Ripple current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead dia.<br>φd  | Lead space |              |              |              | Straight leads<br>(pcs) | Taping<br>(pcs) |
|                         |                      |                |      |                                                       |                               |                  | Straight   | Taping<br>*B | Taping<br>*i |              |                         |                 |
| 6.3                     | 220                  | 5              | 11   | 240                                                   | 0.28                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA0JM221( ) | 200                     | 2000            |
|                         | 470                  | 6.3            | 11.2 | 380                                                   | 0.28                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA0JM471( ) | 200                     | 2000            |
|                         | 1000                 | 8              | 11.5 | 580                                                   | 0.28                          | 0.6              | 3.5        | 5.0          |              | ECA0JM102( ) | 200                     | 1000            |
|                         | 2200                 | 10             | 16   | 890                                                   | 0.30                          | 0.6              | 5.0        | 5.0          |              | ECA0JM222( ) | 200                     | 500             |
|                         | 3300                 | 10             | 20   | 1020                                                  | 0.32                          | 0.6              | 5.0        | 5.0          |              | ECA0JM332( ) | 200                     | 500             |
|                         | 4700                 | 12.5           | 20   | 1170                                                  | 0.34                          | 0.6              | 5.0        | 5.0          |              | ECA0JM472( ) | 200                     | 500             |
|                         | 6800                 | 12.5           | 25   | 1270                                                  | 0.38                          | 0.6              | 5.0        | 5.0          |              | ECA0JM682( ) | 200                     | 500             |
|                         | 10000                | 16             | 25   | 1450                                                  | 0.46                          | 0.8              | 7.5        | 7.5          |              | ECA0JM103( ) | 100                     | 250             |
|                         | 15000                | 16             | 31.5 | 1700                                                  | 0.56                          | 0.8              | 7.5        |              |              | ECA0JM153    | 100                     |                 |
|                         | 22000                | 18             | 35.5 | 1900                                                  | 0.70                          | 0.8              | 7.5        |              |              | ECA0JM223    | 50                      |                 |
| 10                      | 330                  | 6.3            | 11.2 | 330                                                   | 0.24                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1AM331( ) | 200                     | 2000            |
|                         | 1000                 | 10             | 12.5 | 630                                                   | 0.24                          | 0.6              | 5.0        | 5.0          |              | ECA1AM102( ) | 200                     | 500             |
|                         | 2200                 | 10             | 20   | 920                                                   | 0.26                          | 0.6              | 5.0        | 5.0          |              | ECA1AM222( ) | 200                     | 500             |
|                         | 3300                 | 12.5           | 20   | 1090                                                  | 0.28                          | 0.6              | 5.0        | 5.0          |              | ECA1AM332( ) | 200                     | 500             |
|                         | 4700                 | 12.5           | 25   | 1200                                                  | 0.30                          | 0.6              | 5.0        | 5.0          |              | ECA1AM472( ) | 200                     | 500             |
|                         | 6800                 | 16             | 25   | 1400                                                  | 0.34                          | 0.8              | 7.5        | 7.5          |              | ECA1AM682( ) | 100                     | 250             |
|                         | 10000                | 16             | 31.5 | 1600                                                  | 0.42                          | 0.8              | 7.5        |              |              | ECA1AM103    | 100                     |                 |
|                         | 15000                | 18             | 35.5 | 1850                                                  | 0.52                          | 0.8              | 7.5        |              |              | ECA1AM153    | 50                      |                 |
| 16                      | 10                   | 5              | 11   | 30                                                    | 0.20                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1CM100( ) | 200                     | 2000            |
|                         | 22                   | 5              | 11   | 75                                                    | 0.20                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1CM220( ) | 200                     | 2000            |
|                         | 33                   | 5              | 11   | 110                                                   | 0.20                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1CM330( ) | 200                     | 2000            |
|                         | 47                   | 5              | 11   | 130                                                   | 0.20                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1CM470( ) | 200                     | 2000            |
|                         | 100                  | 5              | 11   | 180                                                   | 0.20                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1CM101( ) | 200                     | 2000            |
|                         | 220                  | 6.3            | 11.2 | 280                                                   | 0.20                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1CM221( ) | 200                     | 2000            |
|                         | 470                  | 8              | 11.5 | 440                                                   | 0.20                          | 0.6              | 3.5        | 5.0          |              | ECA1CM471( ) | 200                     | 1000            |
|                         | 1000                 | 10             | 16   | 680                                                   | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA1CM102( ) | 200                     | 500             |
|                         | 2200                 | 12.5           | 20   | 1000                                                  | 0.22                          | 0.6              | 5.0        | 5.0          |              | ECA1CM222( ) | 200                     | 500             |
|                         | 3300                 | 12.5           | 25   | 1200                                                  | 0.24                          | 0.6              | 5.0        | 5.0          |              | ECA1CM332( ) | 200                     | 500             |
|                         | 4700                 | 16             | 25   | 1360                                                  | 0.26                          | 0.8              | 7.5        | 7.5          |              | ECA1CM472( ) | 100                     | 250             |
|                         | 6800                 | 16             | 31.5 | 1600                                                  | 0.30                          | 0.8              | 7.5        |              |              | ECA1CM682    | 100                     |                 |
|                         | 10000                | 18             | 35.5 | 1800                                                  | 0.38                          | 0.8              | 7.5        |              |              | ECA1CM103    | 50                      |                 |
| 25                      | 100                  | 6.3            | 11.2 | 180                                                   | 0.16                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1EM101( ) | 200                     | 2000            |
|                         | 330                  | 8              | 11.5 | 390                                                   | 0.16                          | 0.6              | 3.5        | 5.0          |              | ECA1EM331( ) | 200                     | 1000            |
|                         | 470                  | 10             | 12.5 | 480                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA1EM471( ) | 200                     | 500             |
|                         | 1000                 | 10             | 20   | 850                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA1EM102( ) | 200                     | 500             |
|                         | 2200                 | 12.5           | 25   | 1200                                                  | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA1EM222( ) | 200                     | 500             |
|                         | 3300                 | 16             | 25   | 1300                                                  | 0.20                          | 0.8              | 7.5        | 7.5          |              | ECA1EM332( ) | 100                     | 250             |
|                         | 4700                 | 16             | 31.5 | 1500                                                  | 0.22                          | 0.8              | 7.5        |              |              | ECA1EM472    | 100                     |                 |
|                         | 6800                 | 18             | 35.5 | 1750                                                  | 0.26                          | 0.8              | 7.5        |              |              | ECA1EM682    | 50                      |                 |

· When requesting taped product, please put the letter "B" or "i" between the "( )". Lead wire pitch \*B=5 mm, 7.5 mm, i=2.5 mm.  
 · Please refer to the page of "Taping dimensions".

## Characteristics list

Endurance : 85 °C 2000 h

| Rated voltage<br>(V.DC) | Cap.<br>(±20 %)<br>(μF) | Case size (mm) |      | Specification                                         |                               | Lead length (mm) |            |              |              | Part No.     | Min. Packaging Q'ty     |                 |
|-------------------------|-------------------------|----------------|------|-------------------------------------------------------|-------------------------------|------------------|------------|--------------|--------------|--------------|-------------------------|-----------------|
|                         |                         | φD             | L    | Ripple current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead dia.<br>φd  | Lead space |              |              |              | Straight leads<br>(pcs) | Taping<br>(pcs) |
|                         |                         |                |      |                                                       |                               |                  | Straight   | Taping<br>*B | Taping<br>*i |              |                         |                 |
| 35                      | 47                      | 5              | 11   | 130                                                   | 0.14                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1VM470( ) | 200                     | 2000            |
|                         | 100                     | 6.3            | 11.2 | 210                                                   | 0.14                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1VM101( ) | 200                     | 2000            |
|                         | 220                     | 8              | 11.5 | 350                                                   | 0.14                          | 0.6              | 3.5        | 5.0          |              | ECA1VM221( ) | 200                     | 1000            |
|                         | 330                     | 10             | 12.5 | 440                                                   | 0.14                          | 0.6              | 5.0        | 5.0          |              | ECA1VM331( ) | 200                     | 500             |
|                         | 470                     | 10             | 16   | 550                                                   | 0.14                          | 0.6              | 5.0        | 5.0          |              | ECA1VM471( ) | 200                     | 500             |
|                         | 1000                    | 12.5           | 20   | 900                                                   | 0.14                          | 0.6              | 5.0        | 5.0          |              | ECA1VM102( ) | 200                     | 500             |
|                         | 2200                    | 16             | 25   | 1250                                                  | 0.16                          | 0.8              | 7.5        | 7.5          |              | ECA1VM222( ) | 100                     | 250             |
|                         | 3300                    | 16             | 31.5 | 1400                                                  | 0.18                          | 0.8              | 7.5        |              |              | ECA1VM332    | 100                     |                 |
|                         | 4700                    | 18             | 35.5 | 1600                                                  | 0.20                          | 0.8              | 7.5        |              |              | ECA1VM472    | 50                      |                 |
| 50                      | 2.2                     | 5              | 11   | 20                                                    | 0.12                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1HM2R2( ) | 200                     | 2000            |
|                         | 3.3                     | 5              | 11   | 35                                                    | 0.12                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1HM3R3( ) | 200                     | 2000            |
|                         | 4.7                     | 5              | 11   | 45                                                    | 0.12                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1HM4R7( ) | 200                     | 2000            |
|                         | 10                      | 5              | 11   | 65                                                    | 0.12                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1HM100( ) | 200                     | 2000            |
|                         | 22                      | 5              | 11   | 100                                                   | 0.12                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1HM220( ) | 200                     | 2000            |
|                         | 33                      | 5              | 11   | 110                                                   | 0.12                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1HM330( ) | 200                     | 2000            |
|                         | 47                      | 6.3            | 11.2 | 130                                                   | 0.12                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1HM470( ) | 200                     | 2000            |
|                         | 100                     | 8              | 11.5 | 250                                                   | 0.12                          | 0.6              | 3.5        | 5.0          |              | ECA1HM101( ) | 200                     | 1000            |
|                         | 220                     | 10             | 12.5 | 400                                                   | 0.12                          | 0.6              | 5.0        | 5.0          |              | ECA1HM221( ) | 200                     | 500             |
|                         | 330                     | 10             | 16   | 500                                                   | 0.12                          | 0.6              | 5.0        | 5.0          |              | ECA1HM331( ) | 200                     | 500             |
|                         | 470                     | 10             | 20   | 650                                                   | 0.12                          | 0.6              | 5.0        | 5.0          |              | ECA1HM471( ) | 200                     | 500             |
|                         | 1000                    | 12.5           | 25   | 1050                                                  | 0.12                          | 0.6              | 5.0        | 5.0          |              | ECA1HM102( ) | 200                     | 500             |
|                         | 2200                    | 16             | 31.5 | 1300                                                  | 0.14                          | 0.8              | 7.5        |              |              | ECA1HM222    | 100                     |                 |
|                         | 3300                    | 18             | 35.5 | 1500                                                  | 0.16                          | 0.8              | 7.5        |              |              | ECA1HM332    | 50                      |                 |
| 63                      | 10                      | 5              | 11   | 70                                                    | 0.11                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1JM100( ) | 200                     | 2000            |
|                         | 22                      | 5              | 11   | 105                                                   | 0.11                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA1JM220( ) | 200                     | 2000            |
|                         | 33                      | 6.3            | 11.2 | 130                                                   | 0.11                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1JM330( ) | 200                     | 2000            |
|                         | 47                      | 6.3            | 11.2 | 160                                                   | 0.11                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA1JM470( ) | 200                     | 2000            |
|                         | 100                     | 8              | 11.5 | 270                                                   | 0.11                          | 0.6              | 3.5        | 5.0          |              | ECA1JM101( ) | 200                     | 1000            |
|                         | 220                     | 10             | 16   | 450                                                   | 0.11                          | 0.6              | 5.0        | 5.0          |              | ECA1JM221( ) | 200                     | 500             |
|                         | 330                     | 10             | 20   | 550                                                   | 0.11                          | 0.6              | 5.0        | 5.0          |              | ECA1JM331( ) | 200                     | 500             |
|                         | 470                     | 12.5           | 20   | 750                                                   | 0.11                          | 0.6              | 5.0        | 5.0          |              | ECA1JM471( ) | 200                     | 500             |
|                         | 1000                    | 16             | 25   | 1100                                                  | 0.11                          | 0.8              | 7.5        | 7.5          |              | ECA1JM102( ) | 100                     | 250             |
|                         | 2200                    | 18             | 35.5 | 1400                                                  | 0.13                          | 0.8              | 7.5        |              |              | ECA1JM222    | 50                      |                 |

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

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

## Characteristics list

Endurance : 85 °C 2000 h

| Rated voltage<br>(V.DC) | Cap.<br>(±20 %)<br>(μF) | Case size (mm) |      | Specification                                         |                               | Lead length (mm) |            |              |              | Part No.     | Min. Packaging Q'ty     |                 |
|-------------------------|-------------------------|----------------|------|-------------------------------------------------------|-------------------------------|------------------|------------|--------------|--------------|--------------|-------------------------|-----------------|
|                         |                         | φD             | L    | Ripple current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead dia.<br>φd  | Lead space |              |              |              | Straight leads<br>(pcs) | Taping<br>(pcs) |
|                         |                         |                |      |                                                       |                               |                  | Straight   | Taping<br>*B | Taping<br>*i |              |                         |                 |
| 100                     | 2.2                     | 5              | 11   | 30                                                    | 0.10                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA2AM2R2( ) | 200                     | 2000            |
|                         | 3.3                     | 5              | 11   | 40                                                    | 0.10                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA2AM3R3( ) | 200                     | 2000            |
|                         | 4.7                     | 5              | 11   | 50                                                    | 0.10                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA2AM4R7( ) | 200                     | 2000            |
|                         | 10                      | 5              | 11   | 70                                                    | 0.10                          | 0.5              | 2.0        | 5.0          | 2.5          | ECA2AM100( ) | 200                     | 2000            |
|                         | 22                      | 6.3            | 11.2 | 115                                                   | 0.10                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2AM220( ) | 200                     | 2000            |
|                         | 33                      | 8              | 11.5 | 145                                                   | 0.10                          | 0.6              | 3.5        | 5.0          |              | ECA2AM330( ) | 200                     | 1000            |
|                         | 47                      | 8              | 11.5 | 180                                                   | 0.10                          | 0.6              | 3.5        | 5.0          |              | ECA2AM470( ) | 200                     | 1000            |
|                         | 100                     | 10             | 16   | 350                                                   | 0.10                          | 0.6              | 5.0        | 5.0          |              | ECA2AM101( ) | 200                     | 500             |
|                         | 220                     | 12.5           | 20   | 550                                                   | 0.10                          | 0.6              | 5.0        | 5.0          |              | ECA2AM221( ) | 200                     | 500             |
|                         | 330                     | 12.5           | 25   | 700                                                   | 0.10                          | 0.6              | 5.0        | 5.0          |              | ECA2AM331( ) | 200                     | 500             |
|                         | 470                     | 16             | 25   | 900                                                   | 0.10                          | 0.8              | 7.5        | 7.5          |              | ECA2AM471( ) | 100                     | 250             |
| 1000                    | 18                      | 35.5           | 1300 | 0.10                                                  | 0.8                           | 7.5              |            |              | ECA2AM102    | 50           |                         |                 |
| 160                     | 2.2                     | 6.3            | 11.2 | 53                                                    | 0.16                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2CM2R2( ) | 200                     | 2000            |
|                         | 3.3                     | 6.3            | 11.2 | 66                                                    | 0.16                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2CM3R3( ) | 200                     | 2000            |
|                         | 4.7                     | 6.3            | 11.2 | 78                                                    | 0.16                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2CM4R7( ) | 200                     | 2000            |
|                         | 10                      | 10             | 12.5 | 105                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA2CM100( ) | 200                     | 500             |
|                         | 22                      | 10             | 16   | 175                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA2CM220( ) | 200                     | 500             |
|                         | 33                      | 10             | 20   | 235                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA2CM330( ) | 200                     | 500             |
|                         | 47                      | 12.5           | 20   | 320                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA2CM470( ) | 200                     | 500             |
|                         | 100                     | 12.5           | 25   | 515                                                   | 0.16                          | 0.6              | 5.0        | 5.0          |              | ECA2CM101( ) | 200                     | 500             |
|                         | 220                     | 16             | 31.5 | 830                                                   | 0.16                          | 0.8              | 7.5        |              |              | ECA2CM221    | 100                     |                 |
|                         | 330                     | 18             | 31.5 | 1090                                                  | 0.16                          | 0.8              | 7.5        |              |              | ECA2CM331    | 50                      |                 |
|                         | 470                     | 18             | 40   | 1440                                                  | 0.16                          | 0.8              | 7.5        |              |              | ECA2CM471    | 50                      |                 |
| 200                     | 2.2                     | 6.3            | 11.2 | 50                                                    | 0.18                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2DM2R2( ) | 200                     | 2000            |
|                         | 3.3                     | 6.3            | 11.2 | 62                                                    | 0.18                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2DM3R3( ) | 200                     | 2000            |
|                         | 4.7                     | 8              | 11.5 | 86                                                    | 0.18                          | 0.6              | 3.5        | 5.0          |              | ECA2DM4R7( ) | 200                     | 1000            |
|                         | 10                      | 10             | 12.5 | 100                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2DM100( ) | 200                     | 500             |
|                         | 22                      | 10             | 20   | 180                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2DM220( ) | 200                     | 500             |
|                         | 33                      | 10             | 20   | 220                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2DM330( ) | 200                     | 500             |
|                         | 47                      | 12.5           | 20   | 300                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2DM470( ) | 200                     | 500             |
|                         | 100                     | 16             | 25   | 475                                                   | 0.18                          | 0.8              | 7.5        | 7.5          |              | ECA2DM101( ) | 100                     | 250             |
|                         | 220                     | 18             | 31.5 | 835                                                   | 0.18                          | 0.8              | 7.5        |              |              | ECA2DM221    | 50                      |                 |
|                         | 330                     | 18             | 40   | 1140                                                  | 0.18                          | 0.8              | 7.5        |              |              | ECA2DM331    | 50                      |                 |

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

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

## Characteristics list

Endurance : 85 °C 2000 h

| Rated voltage<br>(V.DC) | Cap.<br>(±20 %)<br>(μF) | Case size (mm) |      | Specification                                         |                               | Lead length (mm) |            |              |              | Part No.     | Min. Packaging Q'ty     |                 |
|-------------------------|-------------------------|----------------|------|-------------------------------------------------------|-------------------------------|------------------|------------|--------------|--------------|--------------|-------------------------|-----------------|
|                         |                         | φD             | L    | Ripple current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead dia.<br>φd  | Lead space |              |              |              | Straight leads<br>(pcs) | Taping<br>(pcs) |
|                         |                         |                |      |                                                       |                               |                  | Straight   | Taping<br>*B | Taping<br>*i |              |                         |                 |
| 250                     | 2.2                     | 6.3            | 11.2 | 50                                                    | 0.18                          | 0.5              | 2.5        | 5.0          | 2.5          | ECA2EM2R2( ) | 200                     | 2000            |
|                         | 3.3                     | 8              | 11.5 | 72                                                    | 0.18                          | 0.6              | 3.5        | 5.0          |              | ECA2EM3R3( ) | 200                     | 1000            |
|                         | 4.7                     | 8              | 11.5 | 86                                                    | 0.18                          | 0.6              | 3.5        | 5.0          |              | ECA2EM4R7( ) | 200                     | 1000            |
|                         | 10                      | 10             | 16   | 110                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2EM100( ) | 200                     | 500             |
|                         | 22                      | 10             | 20   | 180                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2EM220( ) | 200                     | 500             |
|                         | 33                      | 12.5           | 20   | 250                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2EM330( ) | 200                     | 500             |
|                         | 47                      | 12.5           | 25   | 330                                                   | 0.18                          | 0.6              | 5.0        | 5.0          |              | ECA2EM470( ) | 200                     | 500             |
|                         | 100                     | 16             | 31.5 | 530                                                   | 0.18                          | 0.8              | 7.5        |              |              | ECA2EM101    | 100                     |                 |
|                         | 220                     | 18             | 40   | 930                                                   | 0.18                          | 0.8              | 7.5        |              |              | ECA2EM221    | 50                      |                 |
| 350                     | 2.2                     | 8              | 11.5 | 55                                                    | 0.20                          | 0.6              | 3.5        | 5.0          |              | ECA2VM2R2( ) | 200                     | 1000            |
|                         | 3.3                     | 8              | 11.5 | 60                                                    | 0.20                          | 0.6              | 3.5        | 5.0          |              | ECA2VM3R3( ) | 200                     | 1000            |
|                         | 4.7                     | 10             | 12.5 | 65                                                    | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2VM4R7( ) | 200                     | 500             |
|                         | 10                      | 10             | 20   | 115                                                   | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2VM100( ) | 200                     | 500             |
|                         | 22                      | 12.5           | 20   | 195                                                   | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2VM220( ) | 200                     | 500             |
|                         | 33                      | 16             | 25   | 300                                                   | 0.20                          | 0.8              | 7.5        | 7.5          |              | ECA2VM330( ) | 100                     | 250             |
|                         | 47                      | 16             | 25   | 325                                                   | 0.20                          | 0.8              | 7.5        | 7.5          |              | ECA2VM470( ) | 100                     | 250             |
|                         | 100                     | 18             | 31.5 | 535                                                   | 0.20                          | 0.8              | 7.5        |              |              | ECA2VM101    | 50                      |                 |
| 400                     | 2.2                     | 8              | 11.5 | 50                                                    | 0.20                          | 0.6              | 3.5        | 5.0          |              | ECA2GM2R2( ) | 200                     | 1000            |
|                         | 3.3                     | 10             | 12.5 | 54                                                    | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2GM3R3( ) | 200                     | 500             |
|                         | 4.7                     | 10             | 16   | 72                                                    | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2GM4R7( ) | 200                     | 500             |
|                         | 10                      | 10             | 20   | 115                                                   | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2GM100( ) | 200                     | 500             |
|                         | 22                      | 12.5           | 25   | 215                                                   | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2GM220( ) | 200                     | 500             |
|                         | 33                      | 16             | 25   | 275                                                   | 0.20                          | 0.8              | 7.5        | 7.5          |              | ECA2GM330( ) | 100                     | 250             |
|                         | 47                      | 16             | 31.5 | 350                                                   | 0.20                          | 0.8              | 7.5        |              |              | ECA2GM470    | 100                     |                 |
|                         | 100                     | 18             | 40   | 600                                                   | 0.20                          | 0.8              | 7.5        |              |              | ECA2GM101    | 50                      |                 |
| 450                     | 2.2                     | 10             | 12.5 | 44                                                    | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2WM2R2( ) | 200                     | 500             |
|                         | 3.3                     | 10             | 16   | 60                                                    | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2WM3R3( ) | 200                     | 500             |
|                         | 4.7                     | 10             | 20   | 79                                                    | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2WM4R7( ) | 200                     | 500             |
|                         | 10                      | 12.5           | 20   | 130                                                   | 0.20                          | 0.6              | 5.0        | 5.0          |              | ECA2WM100( ) | 200                     | 500             |
|                         | 22                      | 16             | 25   | 210                                                   | 0.20                          | 0.8              | 7.5        | 7.5          |              | ECA2WM220( ) | 100                     | 250             |
|                         | 33                      | 16             | 31.5 | 285                                                   | 0.20                          | 0.8              | 7.5        |              |              | ECA2WM330    | 100                     |                 |

- When requesting taped product, please put the letter "B" or "i" between the "( )". Lead wire pitch \*B=5 mm, 7.5 mm, i=2.5 mm.
- Please refer to the page of "Taping dimensions".