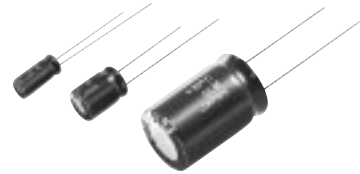


### Radial Lead Type

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

#### ■ Features

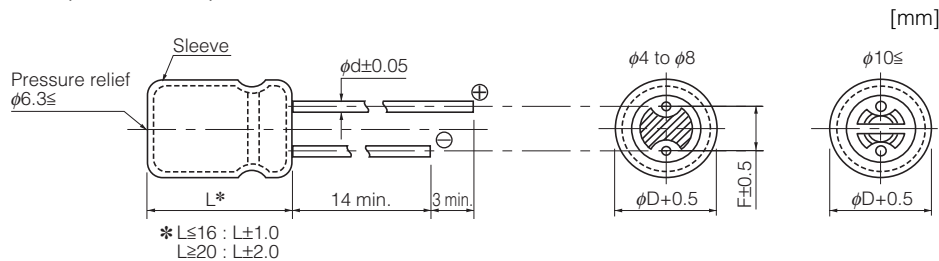
- Endurance : 85 °C 2000 h
- Smaller than series SU
- RoHS directive compliant



#### ■ Specifications

|                       |                                                                                                                                                                                            |                                            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Category Temp. Range  | -40 °C to + 85 °C                                                                                                                                                                          | -25 °C to +85 °C                           |
| Rated W.V. Range      | 6.3 V.DC to 100 V.DC                                                                                                                                                                       | 160 V.DC to 450 V.DC                       |
| Nominal Cap. Range    | 0.1 μF to 22000 μF                                                                                                                                                                         | 1 μF to 470 μF                             |
| Capacitance Tolerance | ±20 % (120 Hz/+20 °C)                                                                                                                                                                      |                                            |
| DC 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 |
| tan δ                 | Please see the attached standard products 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                                                                                                                                                                         | ±20 % of initial measured value            |
|                       | tan δ                                                                                                                                                                                      | ≤150 % of initial specified value          |
|                       | DC leakage current                                                                                                                                                                         | ≤initial specified value                   |
| 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) |                                            |

#### ■ Dimensions in mm (not to scale)



(mm)

|                    |     |     |     |     |      |     |     |
|--------------------|-----|-----|-----|-----|------|-----|-----|
| Body Dia. $\phi D$ | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
| Lead Dia. $\phi d$ | 0.5 | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 |
| Lead space F       | 2.0 | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |

## ■ Standard Products

| W.V.<br><br>(V) | Cap.<br>(±20 %)<br><br>(μF) | Case size |        | Specification                                         |                               | Lead Length           |                      |                      |                      | Part No.     | Min. Packaging Q'ty         |                     |
|-----------------|-----------------------------|-----------|--------|-------------------------------------------------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|--------------|-----------------------------|---------------------|
|                 |                             | Dia.      | Length | Ripple Current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead Dia.<br><br>(mm) | Lead Space           |                      |                      |              | Straight Leads<br><br>(pcs) | Taping<br><br>(pcs) |
|                 |                             |           |        |                                                       |                               |                       | Straight<br><br>(mm) | Taping<br>*B<br>(mm) | Taping<br>*i<br>(mm) |              |                             |                     |
| 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                          |                     |
| 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                |

Endurance : 85 °C 2000 h

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Should a safety concern arise regarding this product, please be sure to contact us immediately.

00 Sep. 2010

■ Standard Products

| W.V. | Cap.<br>(±20 %) | Case size |        | Specification                                            |                               | Lead Length  |            |              |              | Part No.     | Min. Packaging Q'ty |        |
|------|-----------------|-----------|--------|----------------------------------------------------------|-------------------------------|--------------|------------|--------------|--------------|--------------|---------------------|--------|
|      |                 | Dia.      | Length | Ripple<br>Current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead<br>Dia. | Lead Space |              |              |              | Straight<br>Leads   | Taping |
|      |                 |           |        |                                                          |                               |              | Straight   | Taping<br>*B | Taping<br>*i |              |                     |        |
| (V)  | (μF)            | (mm)      | (mm)   | (mA r.m.s.)                                              |                               | (mm)         | (mm)       | (mm)         |              |              | (pcs)               | (pcs)  |
| 35   | 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   | 0.1             | 5         | 11     | 1.3                                                      | 0.12                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA1HM0R1( ) | 200                 | 2000   |
|      | 0.22            | 5         | 11     | 2.9                                                      | 0.12                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA1HMR22( ) | 200                 | 2000   |
|      | 0.33            | 5         | 11     | 4.4                                                      | 0.12                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA1HMR33( ) | 200                 | 2000   |
|      | 0.47            | 5         | 11     | 5                                                        | 0.12                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA1HMR47( ) | 200                 | 2000   |
|      | 1               | 5         | 11     | 10                                                       | 0.12                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA1HM010( ) | 200                 | 2000   |
|      | 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                  |        |
| 100  | 0.47            | 5         | 11     | 10                                                       | 0.10                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA2AMR47( ) | 200                 | 2000   |
|      | 1               | 5         | 11     | 20                                                       | 0.10                          | 0.5          | 2.0        | 5.0          | 2.5          | ECA2AM010( ) | 200                 | 2000   |
|      | 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   |

Endurance : 85 °C 2000 h

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00 Sep. 2010

■ Standard Products

| W.V. | Cap.<br>(±20 %) | Case size |        | Specification                                         |                               | Lead Length |            |              |              | Part No.     | Min. Packaging Q'ty |        |
|------|-----------------|-----------|--------|-------------------------------------------------------|-------------------------------|-------------|------------|--------------|--------------|--------------|---------------------|--------|
|      |                 | Dia.      | Length | Ripple Current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead Dia.   | Lead Space |              |              |              | Straight Leads      | Taping |
|      |                 |           |        |                                                       |                               |             | Straight   | Taping<br>*B | Taping<br>*i |              |                     |        |
| (V)  | (μF)            | (mm)      | (mm)   | (mA r.m.s.)                                           |                               | (mm)        | (mm)       | (mm)         | (mm)         |              | (pcs)               | (pcs)  |
| 100  | 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  | 1               | 6.3       | 11.2   | 36                                                    | 0.16                          | 0.5         | 2.5        | 5.0          | 2.5          | ECA2CM010( ) | 200                 | 2000   |
|      | 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  | 1               | 6.3       | 11.2   | 34                                                    | 0.18                          | 0.5         | 2.5        | 5.0          | 2.5          | ECA2DM010( ) | 200                 | 2000   |
|      | 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                  |        |
| 250  | 1               | 6.3       | 11.2   | 34                                                    | 0.18                          | 0.5         | 2.5        | 5.0          | 2.5          | ECA2EM010( ) | 200                 | 2000   |
|      | 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  | 1               | 6.3       | 11.2   | 32                                                    | 0.20                          | 0.5         | 2.5        | 5.0          | 2.5          | ECA2VM010( ) | 200                 | 2000   |
|      | 2.2             | 8         | 11.5   | 55                                                    | 0.20                          | 0.6         | 3.5        | 5.0          |              | ECA2VM2R2( ) | 200                 | 1000   |

Endurance : 85 °C 2000 h

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Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

00 Sep. 2010

### ■ Standard Products

| W.V.<br><br>(V) | Cap.<br>(±20 %)<br><br>(μF) | Case size |        | Specification                                         |                               | Lead Length           |                      |                      |                      | Part No.     | Min. Packaging Q'ty         |                     |
|-----------------|-----------------------------|-----------|--------|-------------------------------------------------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------|--------------|-----------------------------|---------------------|
|                 |                             | Dia.      | Length | Ripple Current<br>(120 Hz)<br>(+85 °C)<br>(mA r.m.s.) | tan δ<br>(120 Hz)<br>(+20 °C) | Lead Dia.<br><br>(mm) | Lead Space           |                      |                      |              | Straight Leads<br><br>(pcs) | Taping<br><br>(pcs) |
|                 |                             |           |        |                                                       |                               |                       | Straight<br><br>(mm) | Taping<br>*B<br>(mm) | Taping<br>*i<br>(mm) |              |                             |                     |
| 350             | 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             | 1                           | 6.3       | 11.2   | 32                                                    | 0.20                          | 0.5                   | 2.5                  | 5.0                  | 2.5                  | ECA2GM010( ) | 200                         | 2000                |
|                 | 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             | 1                           | 8         | 11.5   | 37                                                    | 0.20                          | 0.6                   | 3.5                  | 5.0                  |                      | ECA2WM010( ) | 200                         | 1000                |
|                 | 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                         |                     |

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