

Radial Lead Type

Series: **EE** Type: **A**

■ Features

- High ripple current (at high frequency):
40 % higher than ED Series
- Endurance: 105 °C 8000 h to 10000 h
- RoHS directive compliant



■ Specifications

| | | | | | | | | |
|-----------------------|--|------------------------------------|------|------|------|------|------|-----------------|
| Category Temp. Range | -25 °C to + 105 °C | | | | | | | |
| Rated W.V. Range | 160 V .DC to 450 V .DC | | | | | | | |
| Nominal Cap. Range | 10 μF to 330 μF | | | | | | | |
| Capacitance Tolerance | ±20 % (120 Hz/+20 °C) | | | | | | | |
| DC Leakage Current | $I \leq 0.06 CV + 10$ (μA) After 2 minutes | | | | | | | |
| tan δ | W.V. | 160 | 200 | 250 | 350 | 400 | 450 | (120 Hz/+20 °C) |
| | tan δ | 0.15 | 0.15 | 0.15 | 0.20 | 0.24 | 0.24 | |
| Endurance | After following life test with DC voltage and +105 °C±2 °C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage), when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below. Duration φ10 : 8000 hours φ12.5 to φ18 : 10000 hours | | | | | | | |
| | Capacitance change | ±20 % of initial measured value | | | | | | |
| | tan δ | ≤ 200 % of initial specified value | | | | | | |
| | DC leakage current | ≤ initial specified value | | | | | | |
| Shelf Life | After storage for 1000 hours at +105 °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

| W. V. (V. DC) | Cap. (μF) | Frequency (Hz) | | | | | |
|------------------|--------------|----------------|-------|-------|-------|--------|---------|
| | | 60 ≤ | 120 ≤ | 300 ≤ | 1 k ≤ | 10 k ≤ | 100 k ≤ |
| 160 to 450 | 10 to 82 | 0.25 | 0.35 | 0.50 | 0.65 | 0.90 | 1.00 |
| | 100 to 330 | 0.30 | 0.40 | 0.55 | 0.70 | 0.90 | 1.00 |

■ Dimensions in mm (not to scale)

(Unit : mm)



| | | | | |
|--------------|-----|------|-----|-----|
| Body Dia. φD | 10 | 12.5 | 16 | 18 |
| Lead Dia. φd | 0.6 | 0.6 | 0.8 | 0.8 |
| Lead space F | 5.0 | 5.0 | 7.5 | 7.5 |

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 Nov. 2012

■ Case size/Impedance/Ripple current

| Cap. (μ F) | 160 V | | | 200 V | | |
|--------------------|----------------------------|--------------------------------------|--------------|----------------------------|--------------------------------------|--------------|
| | Case size (ϕ D×L) | Ripple current (mA r.m.s.) 105 °C | | Case size (ϕ D×L) | Ripple current (mA r.m.s.) 105 °C | |
| | | 120 Hz | 100 kHz | | 120 Hz | 100 kHz |
| 22 | 10 × 20 | 245 | 700 | 10 × 20 | 300 | 850 |
| 33 | 10 × 20 | 280 | 810 | 10 × 20 | 320 | 920 |
| 47 | 10 × 20 | 370 | 1065 | 12.5 × 20 | 385 | 1100 |
| 68 | 12.5 × 20 | 470 | 1350 | 12.5 × 25 16 × 20S | 465 465 | 1330 1330 |
| 82 | 12.5 × 25 | 520 | 1480 | 16 × 20S | 510 | 1460 |
| 100 | 12.5 × 25 16 × 20S | 660 680 | 1660 1700 | 16 × 25 18 × 20S | 690 670 | 1730 1665 |
| 150 | 16 × 25 18 × 20S | 755 730 | 1890 1820 | 16 × 25 | 740 | 1860 |
| 220 | 16 × 31.5 18 × 25S | 910 780 | 2280 1950 | 18 × 31.5 | 1175 | 2600 |
| 330 | 18 × 31.5 | 1040 | 2600 | 18 × 40 | 1250 | 3120 |

| Cap. (μ F) | 250 V | | | 350 V | | |
|--------------------|----------------------------|--------------------------------------|--------------|----------------------------|--------------------------------------|--------------|
| | Case size (ϕ D×L) | Ripple current (mA r.m.s.) 105 °C | | Case size (ϕ D×L) | Ripple current (mA r.m.s.) 105 °C | |
| | | 120 Hz | 100 kHz | | 120 Hz | 100 kHz |
| 15 | | | | 10 × 20 | 170 | 480 |
| 22 | 10 × 20 | 275 | 785 | 12.5 × 20 | 230 | 660 |
| 33 | 12.5 × 20 | 350 | 995 | 12.5 × 25 16 × 20S | 275 315 | 790 900 |
| 47 | 12.5 × 25 16 × 20S | 450 490 | 1290 1400 | 16 × 25 18 × 20S | 375 375 | 1070 1070 |
| 68 | 16 × 20S | 490 | 1400 | 16 × 31.5 18 × 25S | 535 465 | 1530 1330 |
| 82 | 16 × 25 18 × 20S | 590 590 | 1680 1680 | 18 × 25S | 535 | 1530 |
| 100 | 16 × 31.5 18 × 25S | 840 840 | 2100 2100 | 18 × 31.5 | 640 | 1600 |
| 150 | 18 × 31.5 | 1010 | 2520 | | | |
| 220 | 18 × 40 | 1175 | 2940 | | | |

| Cap. (μ F) | 400 V | | | 450 V | | |
|--------------------|----------------------------|--------------------------------------|--------------|----------------------------|--------------------------------------|--------------|
| | Case size (ϕ D×L) | Ripple current (mA r.m.s.) 105 °C | | Case size (ϕ D×L) | Ripple current (mA r.m.s.) 105 °C | |
| | | 120 Hz | 100 kHz | | 120 Hz | 100 kHz |
| 10 | 10 × 20 | 150 | 430 | 10 × 20U 12.5 × 20 | 115 170 | 330 490 |
| 15 | 12.5 × 20 | 205 | 590 | 12.5 × 25 | 270 | 780 |
| 22 | 12.5 × 25 16 × 20S | 265 300 | 760 860 | 16 × 20S | 330 | 945 |
| 33 | 16 × 20S | 355 | 1020 | 16 × 25 18 × 20S | 350 350 | 1000 1000 |
| 47 | 16 × 25 18 × 20S | 410 410 | 1180 1180 | 16 × 31.5 18 × 25S | 420 420 | 1200 1200 |
| 56 | | | | 18 × 31.5 | 480 | 1380 |
| 68 | 18 × 25 | 515 | 1470 | 18 × 40 | 630 | 1800 |
| 82 | 18 × 31.5 | 575 | 1645 | | | |
| 100 | 18 × 40 | 825 | 2060 | | | |

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.

Standard Products

Endurance : 105 °C ϕ 10=8000 h, ϕ 12.5 to ϕ 18=10000 h

| W.V. | Cap. ($\pm 20\%$) | Case size | | Specification | | | Lead Length | | | Part No. | Min. Packaging Q'ty | | |
|------|------------------------|-----------|--------|---|--------------------------------------|----------------------|-------------|------------|--------------|----------------|-------------------------|-----------------|-----|
| | | Dia. | Length | Ripple Current (100 kHz) (+105 °C) (mA r.m.s.) | tan δ (120 Hz) (+20 °C) | Endurance (hours) | Lead Dia. | Lead Space | | | Straight Leads (pcs) | Taping (pcs) | |
| | | | | | | | | Straight | Taping *B | | | | |
| (V) | (μ F) | (mm) | (mm) | (mA r.m.s.) | (120 Hz) (+20 °C) | (hours) | (mm) | (mm) | (mm) | | (pcs) | (pcs) | |
| 160 | 22 | 10 | 20 | 700 | 0.15 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2C220() | 200 | 500 | |
| | 33 | 10 | 20 | 810 | 0.15 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2C330() | 200 | 500 | |
| | 47 | 10 | 20 | 1065 | 0.15 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2C470() | 200 | 500 | |
| | 68 | 12.5 | 20 | 1350 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2C680() | 200 | 500 | |
| | 82 | 12.5 | 25 | 1480 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2C820() | 200 | 500 | |
| | 100 | 100 | 12.5 | 25 | 1660 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2C101() | 200 | 500 |
| | | | 16 | 20 | 1700 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2C101S() | 100 | 250 |
| | 150 | 150 | 16 | 25 | 1890 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2C151() | 100 | 250 |
| | | | 18 | 20 | 1820 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2C151S() | 100 | 250 |
| | 220 | 220 | 16 | 31.5 | 2280 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2C221 | 100 | |
| 18 | | | 25 | 1950 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2C221S() | 100 | 250 | |
| 330 | 330 | 18 | 31.5 | 2600 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2C331 | 50 | | |
| 200 | 22 | 10 | 20 | 850 | 0.15 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2D220() | 200 | 500 | |
| | 33 | 10 | 20 | 920 | 0.15 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2D330() | 200 | 500 | |
| | 47 | 12.5 | 20 | 1100 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2D470() | 200 | 500 | |
| | 68 | 68 | 12.5 | 25 | 1330 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2D680() | 200 | 500 |
| | | | 16 | 20 | 1330 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2D680S() | 100 | 250 |
| | 82 | 16 | 20 | 1460 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2D820S() | 100 | 250 | |
| | 100 | 100 | 16 | 25 | 1730 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2D101() | 100 | 250 |
| | | | 18 | 20 | 1665 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2D101S() | 100 | 250 |
| | 150 | 150 | 16 | 25 | 1860 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2D151() | 100 | 250 |
| | 220 | 220 | 18 | 31.5 | 2600 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2D221 | 100 | |
| 330 | 330 | 18 | 40 | 3120 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2D331 | 50 | | |
| 250 | 22 | 10 | 20 | 785 | 0.15 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2E220() | 200 | 500 | |
| | 33 | 12.5 | 20 | 995 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2E330() | 200 | 500 | |
| | 47 | 47 | 12.5 | 25 | 1290 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2E470() | 200 | 500 |
| | | | 16 | 20 | 1400 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2E470S() | 100 | 250 |
| | 68 | 16 | 20 | 1400 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2E680S() | 100 | 250 | |
| | 82 | 82 | 16 | 25 | 1680 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2E820() | 100 | 250 |
| | | | 18 | 20 | 1680 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2E820S() | 100 | 250 |
| | 100 | 100 | 16 | 31.5 | 2100 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2E101 | 100 | |
| | | | 18 | 25 | 2100 | 0.15 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2E101S() | 100 | 250 |
| | 150 | 150 | 18 | 31.5 | 2520 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2E151 | 50 | |
| 220 | 220 | 18 | 40 | 2940 | 0.15 | 10000 | 0.8 | 7.5 | | EEUEE2E221 | 50 | | |
| 350 | 15 | 10 | 20 | 480 | 0.20 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2V150() | 200 | 500 | |
| | 22 | 12.5 | 20 | 660 | 0.20 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2V220() | 200 | 500 | |
| | 33 | 33 | 12.5 | 25 | 790 | 0.20 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2V330() | 200 | 500 |
| | | | 16 | 20 | 900 | 0.20 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2V330S() | 100 | 250 |
| | 47 | 47 | 16 | 25 | 1070 | 0.20 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2V470() | 100 | 250 |
| | | | 18 | 20 | 1070 | 0.20 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2V470S() | 100 | 250 |
| | 68 | 68 | 16 | 31.5 | 1530 | 0.20 | 10000 | 0.8 | 7.5 | | EEUEE2V680 | 100 | |
| | | | 18 | 25 | 1330 | 0.20 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2V680S() | 100 | 250 |
| | 82 | 82 | 18 | 25 | 1530 | 0.20 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2V820S() | 100 | 250 |
| | 100 | 100 | 18 | 31.5 | 1600 | 0.20 | 10000 | 0.8 | 7.5 | | EEUEE2V101 | 50 | |

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

■ Standard Products

Endurance : 105 °C ϕ 10=8000 h, ϕ 12.5 to ϕ 18=10000 h

| W.V. (V) | Cap. (\pm 20 %) (μ F) | Case size | | Specification | | | Lead Length | | | Part No. | Min. Packaging Q'ty | |
|-------------|-------------------------------------|--------------|----------------|---|---------------------------------------|----------------------|-------------------|------------------|----------------------|----------------|-------------------------|-----------------|
| | | Dia. (mm) | Length (mm) | Ripple Current (100 kHz) (+105 °C) (mA r.m.s.) | $\tan \delta$ (120 Hz) (+20 °C) | Endurance (hours) | Lead Dia. (mm) | Lead Space | | | Straight Leads (pcs) | Taping (pcs) |
| | | | | | | | | Straight (mm) | Taping *B (mm) | | | |
| 400 | 10 | 10 | 20 | 430 | 0.24 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2G100() | 200 | 500 |
| | 15 | 12.5 | 20 | 590 | 0.24 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2G150() | 200 | 500 |
| | 22 | 12.5 | 25 | 760 | 0.24 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2G220() | 200 | 500 |
| | | 16 | 20 | 860 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2G220S() | 100 | 250 |
| | 33 | 16 | 20 | 1020 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2G330S() | 100 | 250 |
| | 47 | 16 | 25 | 1180 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2G470() | 100 | 250 |
| | | 18 | 20 | 1180 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2G470S() | 100 | 250 |
| | 68 | 18 | 25 | 1470 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2G680() | 100 | 250 |
| | 82 | 18 | 31.5 | 1645 | 0.24 | 10000 | 0.8 | 7.5 | | EEUEE2G820 | 50 | |
| 100 | 18 | 40 | 2060 | 0.24 | 10000 | 0.8 | 7.5 | | EEUEE2G101 | 50 | | |
| 450 | 10 | 10 | 20 | 330 | 0.24 | 8000 | 0.6 | 5.0 | 5.0 | EEUEE2W100U() | 200 | 500 |
| | | 12.5 | 20 | 490 | 0.24 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2W100() | 200 | 500 |
| | 15 | 12.5 | 25 | 780 | 0.24 | 10000 | 0.6 | 5.0 | 5.0 | EEUEE2W150() | 200 | 500 |
| | 22 | 16 | 20 | 945 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2W220S() | 100 | 250 |
| | 33 | 16 | 25 | 1000 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2W330() | 100 | 250 |
| | | 18 | 20 | 1000 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2W330S() | 100 | 250 |
| | 47 | 16 | 31.5 | 1200 | 0.24 | 10000 | 0.8 | 7.5 | | EEUEE2W470 | 100 | |
| | | 18 | 25 | 1200 | 0.24 | 10000 | 0.8 | 7.5 | 7.5 | EEUEE2W470S() | 100 | 250 |
| | 56 | 18 | 31.5 | 1380 | 0.24 | 10000 | 0.8 | 7.5 | | EEUEE2W560 | 50 | |
| 68 | 18 | 40 | 1800 | 0.24 | 10000 | 0.8 | 7.5 | | EEUEE2W680 | 50 | | |

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



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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