

Snap-in Type

Series: **ED** Type: **TS**



■ Features

- Endurance : 105 °C 3000 h
- High ripple current capability in high frequency range.
- RoHS directive compliant

■ Specifications

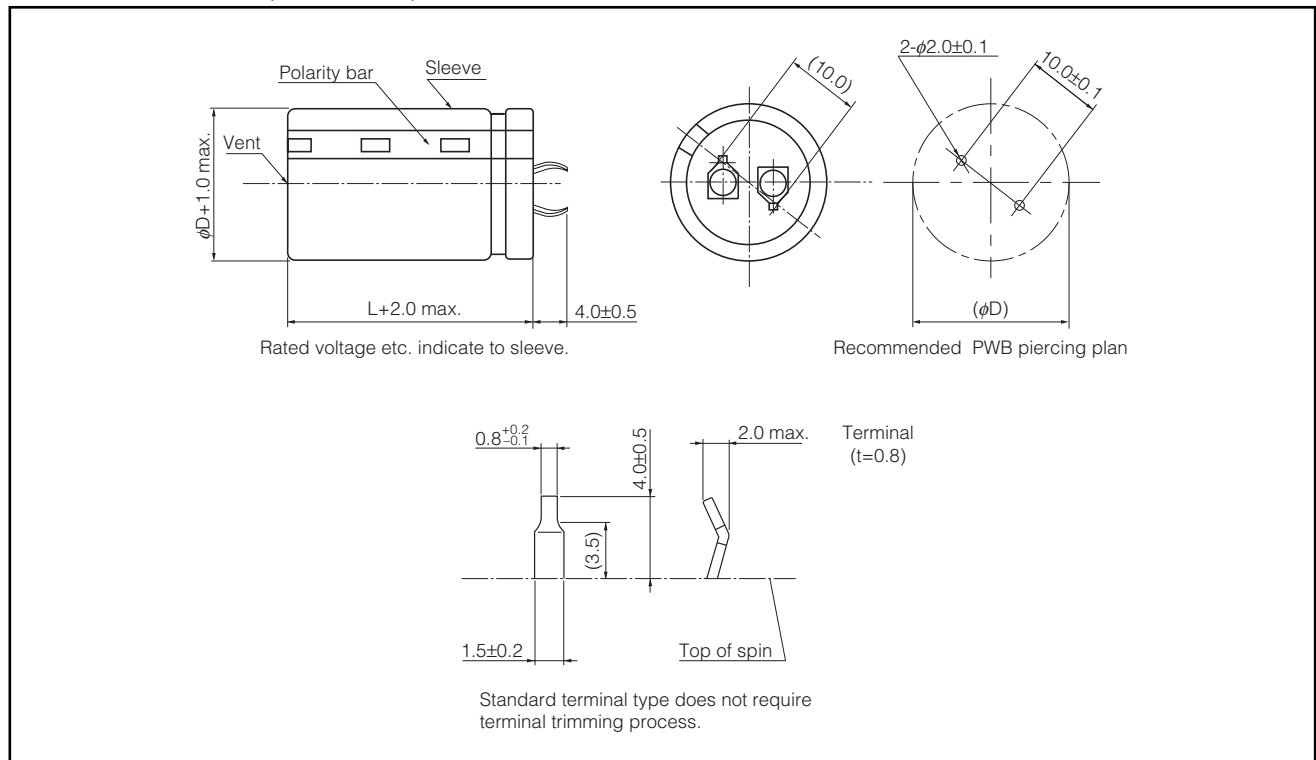
| | | |
|-----------------------|--|------------------------------------|
| Category Temp. Range | -40 °C to + 105 °C | -25 °C to +105 °C |
| Rated W.V. Range | 200 V.DC to 250 V.DC | 400 V.DC to 450 V.DC |
| Nominal Cap. Range | 220 µF to 2200 µF | 56 µF to 560 µF |
| Capacitance Tolerance | ±20 % (120 Hz/+20 °C) | |
| DC Leakage Current | 3√CV (µA) max. After 5 minutes application of rated working voltage at +20 °C C : Capacitance (µF) V: W.V. (V.DC) | |
| tan δ | Please see the attached standard products list | |
| Endurance | After 3000 hours application of DC voltage with specified ripple current (≤ rated DC working voltage) at +105 °C±2 °C, the capacitors shall meet the following limits. | |
| | 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 within 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

| Correction factor | Frequency (Hz) | | | | | | |
|-------------------|----------------|------|------|------|------|------|---------|
| | 50 | 60 | 100 | 120 | 500 | 1 k | 10 k to |
| | 0.50 | 0.55 | 0.68 | 0.70 | 0.85 | 0.90 | 1.00 |

■ Dimensions in mm (not to scale)

(Unit : mm)



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

Standard Products

Endurance : 105 °C 3000 h

| W.V. (V. DC) | Cap. (120 Hz) (±20 %) (μF) | Case size | | Part No. PET sleeve Terminal Length 4.0 mm (Without Top Plate) | Specification | | Min. Packaging Q'ty (pcs) |
|-----------------|-------------------------------------|--------------|----------------|--|---|---------------------------------------|----------------------------------|
| | | Dia. (mm) | Length (mm) | | Ripple Current (50 kHz) (+105 °C) (A r.m.s.) | tan δ (120 Hz) (+20 °C) max. | |
| 200 | 270 | 22 | 25 | EETED2D271HJ | 2.03 | 0.15 | 200 |
| | 330 | 22 | 30 | EETED2D331HJ | 2.23 | 0.15 | 200 |
| | 390 | 22 | 30 | EETED2D391HJ | 2.44 | 0.15 | 200 |
| | | 25 | 25 | EETED2D391JJ | 2.44 | 0.15 | 200 |
| | 470 | 22 | 35 | EETED2D471HJ | 2.64 | 0.15 | 200 |
| | | 25 | 30 | EETED2D471JJ | 2.64 | 0.15 | 200 |
| | 560 | 22 | 40 | EETED2D561HJ | 3.05 | 0.15 | 200 |
| | | 25 | 30 | EETED2D561JJ | 3.05 | 0.15 | 200 |
| | | 30 | 25 | EETED2D561KJ | 3.05 | 0.15 | 200 |
| | 680 | 22 | 45 | EETED2D681HJ | 3.45 | 0.15 | 200 |
| | | 25 | 35 | EETED2D681JJ | 3.45 | 0.15 | 200 |
| | | 30 | 30 | EETED2D681KJ | 3.45 | 0.15 | 200 |
| | 820 | 22 | 50 | EETED2D821HJ | 3.76 | 0.15 | 200 |
| | | 25 | 40 | EETED2D821JJ | 3.76 | 0.15 | 200 |
| | | 30 | 30 | EETED2D821KJ | 3.76 | 0.15 | 200 |
| | | 35 | 25 | EETED2D821LJ | 3.76 | 0.15 | 200 |
| | 1000 | 25 | 45 | EETED2D102JJ | 4.06 | 0.15 | 200 |
| | | 30 | 35 | EETED2D102KJ | 4.06 | 0.15 | 100 |
| | | 35 | 30 | EETED2D102LJ | 4.06 | 0.15 | 200 |
| | 1200 | 30 | 40 | EETED2D122KJ | 4.47 | 0.15 | 100 |
| 35 | | 35 | EETED2D122LJ | 4.47 | 0.15 | 100 | |
| 1500 | 30 | 50 | EETED2D152KJ | 5.08 | 0.15 | 100 | |
| | 35 | 40 | EETED2D152LJ | 5.08 | 0.15 | 100 | |
| * | 1800 | 35 | 45 | EETED2D182LJ | 5.48 | 0.15 | 100 |
| * | 2200 | 35 | 50 | EETED2D222LJ | 5.89 | 0.15 | 100 |
| 220 | 270 | 22 | 30 | EETED2Q271HJ | 2.03 | 0.15 | 200 |
| | 330 | 22 | 30 | EETED2Q331HJ | 2.23 | 0.15 | 200 |
| | | 25 | 25 | EETED2Q331JJ | 2.23 | 0.15 | 200 |
| | 390 | 22 | 35 | EETED2Q391HJ | 2.44 | 0.15 | 200 |
| | | 25 | 30 | EETED2Q391JJ | 2.44 | 0.15 | 200 |
| | 470 | 22 | 40 | EETED2Q471HJ | 2.64 | 0.15 | 200 |
| | | 25 | 30 | EETED2Q471JJ | 2.64 | 0.15 | 200 |
| | | 30 | 25 | EETED2Q471KJ | 2.64 | 0.15 | 200 |
| | 560 | 22 | 45 | EETED2Q561HJ | 3.05 | 0.15 | 200 |
| | | 25 | 35 | EETED2Q561JJ | 3.05 | 0.15 | 200 |
| | | 30 | 30 | EETED2Q561KJ | 3.05 | 0.15 | 200 |
| | 680 | 25 | 40 | EETED2Q681JJ | 3.45 | 0.15 | 200 |
| | | 30 | 30 | EETED2Q681KJ | 3.45 | 0.15 | 200 |
| | | 35 | 25 | EETED2Q681LJ | 3.45 | 0.15 | 200 |
| | 820 | 25 | 45 | EETED2Q821JJ | 3.76 | 0.15 | 200 |
| | | 30 | 35 | EETED2Q821KJ | 3.76 | 0.15 | 100 |
| | | 35 | 30 | EETED2Q821LJ | 3.76 | 0.15 | 200 |
| | 1000 | 30 | 40 | EETED2Q102KJ | 4.06 | 0.15 | 100 |
| | | 35 | 35 | EETED2Q102LJ | 4.06 | 0.15 | 100 |
| | 1200 | 30 | 45 | EETED2Q122KJ | 4.47 | 0.15 | 100 |
| 35 | | 40 | EETED2Q122LJ | 4.47 | 0.15 | 100 | |
| * | 1500 | 35 | 45 | EETED2Q152LJ | 5.08 | 0.15 | 100 |
| * | 1800 | 35 | 50 | EETED2Q182LJ | 5.48 | 0.15 | 100 |

* When capacitors of φ35×45L and φ35×50L are mounted on PWB, reinforce them with mounting clamp or adhesives.
(Avoid using adhesives including halogenated compositions.)

Standard Products

Endurance : 105 °C 3000 h

| W.V. (V. DC) | Cap. (120 Hz) (±20 %) (μF) | Case size | | Part No. PET sleeve Terminal Length 4.0 mm (Without Top Plate) | Specification | | Min. Packaging Q'ty (pcs) |
|-----------------|-------------------------------------|--------------|----------------|--|---|---------------------------------------|----------------------------------|
| | | Dia. (mm) | Length (mm) | | Ripple Current (50 kHz) (+105 °C) (A r.m.s.) | tan δ (120 Hz) (+20 °C) max. | |
| 250 | 220 | 22 | 30 | EETED2E221HJ | 1.83 | 0.15 | 200 |
| | 270 | 22 | 30 | EETED2E271HJ | 2.03 | 0.15 | 200 |
| | | 25 | 25 | EETED2E271JJ | 2.03 | 0.15 | 200 |
| | 330 | 22 | 35 | EETED2E331HJ | 2.23 | 0.15 | 200 |
| | | 25 | 30 | EETED2E331JJ | 2.23 | 0.15 | 200 |
| | 390 | 22 | 40 | EETED2E391HJ | 2.44 | 0.15 | 200 |
| | | 25 | 30 | EETED2E391JJ | 2.44 | 0.15 | 200 |
| | | 30 | 25 | EETED2E391KJ | 2.44 | 0.15 | 200 |
| | 470 | 22 | 45 | EETED2E471HJ | 2.64 | 0.15 | 200 |
| | | 25 | 35 | EETED2E471JJ | 2.64 | 0.15 | 200 |
| | | 30 | 30 | EETED2E471KJ | 2.64 | 0.15 | 200 |
| | 560 | 25 | 40 | EETED2E561JJ | 3.05 | 0.15 | 200 |
| | | 30 | 30 | EETED2E561KJ | 3.05 | 0.15 | 200 |
| | | 35 | 25 | EETED2E561LJ | 3.05 | 0.15 | 200 |
| | 680 | 25 | 45 | EETED2E681JJ | 3.45 | 0.15 | 200 |
| | | 30 | 35 | EETED2E681KJ | 3.45 | 0.15 | 100 |
| | | 35 | 30 | EETED2E681LJ | 3.45 | 0.15 | 200 |
| | 820 | 30 | 40 | EETED2E821KJ | 3.76 | 0.15 | 100 |
| 35 | | 35 | EETED2E821LJ | 3.76 | 0.15 | 100 | |
| 1000 | 30 | 50 | EETED2E102KJ | 4.06 | 0.15 | 100 | |
| | 35 | 40 | EETED2E102LJ | 4.06 | 0.15 | 100 | |
| * | 1200 | 35 | 45 | EETED2E122LJ | 4.47 | 0.15 | 100 |
| * | 1500 | 35 | 50 | EETED2E152LJ | 5.08 | 0.15 | 100 |
| 400 | 82 | 22 | 25 | EETED2G820HJ | 1.14 | 0.15 | 200 |
| | 100 | 22 | 30 | EETED2G101HJ | 1.30 | 0.15 | 200 |
| | | 25 | 25 | EETED2G101JJ | 1.30 | 0.15 | 200 |
| | 120 | 22 | 35 | EETED2G121HJ | 1.46 | 0.15 | 200 |
| | | 25 | 30 | EETED2G121JJ | 1.46 | 0.15 | 200 |
| | 150 | 22 | 40 | EETED2G151HJ | 1.53 | 0.15 | 200 |
| | | 25 | 30 | EETED2G151JJ | 1.53 | 0.15 | 200 |
| | | 30 | 25 | EETED2G151KJ | 1.53 | 0.15 | 200 |
| | 180 | 22 | 45 | EETED2G181HJ | 1.60 | 0.15 | 200 |
| | | 25 | 35 | EETED2G181JJ | 1.60 | 0.15 | 200 |
| | | 30 | 30 | EETED2G181KJ | 1.60 | 0.15 | 200 |
| | 220 | 22 | 50 | EETED2G221HJ | 2.03 | 0.15 | 200 |
| | | 25 | 40 | EETED2G221JJ | 2.03 | 0.15 | 200 |
| | | 30 | 30 | EETED2G221KJ | 2.03 | 0.15 | 200 |
| | | 35 | 25 | EETED2G221LJ | 2.03 | 0.15 | 200 |
| | 270 | 25 | 45 | EETED2G271JJ | 2.23 | 0.15 | 200 |
| | | 30 | 35 | EETED2G271KJ | 2.23 | 0.15 | 100 |
| | | 35 | 30 | EETED2G271LJ | 2.23 | 0.15 | 200 |
| 330 | 30 | 40 | EETED2G331KJ | 2.44 | 0.15 | 100 | |
| | 35 | 30 | EETED2G331LJ | 2.44 | 0.15 | 200 | |
| 390 | 30 | 45 | EETED2G391KJ | 2.64 | 0.15 | 100 | |
| | 35 | 35 | EETED2G391LJ | 2.64 | 0.15 | 100 | |
| 470 | 35 | 40 | EETED2G471LJ | 2.84 | 0.15 | 100 | |
| * | 560 | 35 | 45 | EETED2G561LJ | 3.05 | 0.15 | 100 |

* When capacitors of $\phi 35 \times 45L$ and $\phi 35 \times 50L$ are mounted on PWB, reinforce them with mounting clamp or adhesives. (Avoid using adhesives including halogenated compositions.)

Standard Products

Endurance : 105 °C 3000 h

| W.V. (V. DC) | Cap. (120 Hz) (±20 %) (μF) | Case size | | Part No. PET sleeve Terminal Length 4.0 mm (Without Top Plate) | Specification | | Min. Packaging Q'ty (pcs) |
|-----------------|-------------------------------------|--------------|----------------|--|--|---------------------------------------|----------------------------------|
| | | Dia. (mm) | Length (mm) | | Ripple Current (50 kHz) (+105 °C) (A r.m.s.) | tan δ (120 Hz) (+20 °C) max. | |
| 420 | 68 | 22 | 25 | EETED2S680HJ | 1.08 | 0.15 | 200 |
| | 82 | 22 | 30 | EETED2S820HJ | 1.14 | 0.15 | 200 |
| | | 25 | 25 | EETED2S820JJ | 1.14 | 0.15 | 200 |
| | 100 | 22 | 30 | EETED2S101HJ | 1.30 | 0.15 | 200 |
| | | 25 | 25 | EETED2S101JJ | 1.30 | 0.15 | 200 |
| | 120 | 22 | 35 | EETED2S121HJ | 1.46 | 0.15 | 200 |
| | | 25 | 30 | EETED2S121JJ | 1.46 | 0.15 | 200 |
| | 150 | 22 | 40 | EETED2S151HJ | 1.53 | 0.15 | 200 |
| | | 25 | 35 | EETED2S151JJ | 1.53 | 0.15 | 200 |
| | | 30 | 25 | EETED2S151KJ | 1.53 | 0.15 | 200 |
| | 180 | 22 | 45 | EETED2S181HJ | 1.60 | 0.15 | 200 |
| | | 25 | 40 | EETED2S181JJ | 1.60 | 0.15 | 200 |
| | | 30 | 30 | EETED2S181KJ | 1.60 | 0.15 | 200 |
| | | 35 | 25 | EETED2S181LJ | 1.60 | 0.15 | 200 |
| | 220 | 25 | 45 | EETED2S221JJ | 2.03 | 0.15 | 200 |
| | | 30 | 35 | EETED2S221KJ | 2.03 | 0.15 | 100 |
| | | 35 | 30 | EETED2S221LJ | 2.03 | 0.15 | 200 |
| | 270 | 25 | 50 | EETED2S271JJ | 2.40 | 0.15 | 200 |
| | | 30 | 40 | EETED2S271KJ | 2.40 | 0.15 | 100 |
| | | 35 | 30 | EETED2S271LJ | 2.40 | 0.15 | 200 |
| 330 | 30 | 45 | EETED2S331KJ | 2.54 | 0.15 | 100 | |
| | 35 | 35 | EETED2S331LJ | 2.54 | 0.15 | 100 | |
| 390 | 30 | 50 | EETED2S391KJ | 2.73 | 0.15 | 100 | |
| | 35 | 40 | EETED2S391LJ | 2.73 | 0.15 | 100 | |
| * | 470 | 35 | 45 | EETED2S471LJ | 3.18 | 0.15 | 100 |
| 450 | 56 | 22 | 25 | EETED2W560HJ | 0.95 | 0.15 | 200 |
| | 68 | 22 | 30 | EETED2W680HJ | 1.08 | 0.15 | 200 |
| | | 25 | 25 | EETED2W680JJ | 1.08 | 0.15 | 200 |
| | 82 | 22 | 30 | EETED2W820HJ | 1.14 | 0.15 | 200 |
| | | 25 | 25 | EETED2W820JJ | 1.14 | 0.15 | 200 |
| | 100 | 22 | 35 | EETED2W101HJ | 1.30 | 0.15 | 200 |
| | | 25 | 30 | EETED2W101JJ | 1.30 | 0.15 | 200 |
| | 120 | 22 | 40 | EETED2W121HJ | 1.46 | 0.15 | 200 |
| | | 25 | 35 | EETED2W121JJ | 1.46 | 0.15 | 200 |
| | | 30 | 25 | EETED2W121KJ | 1.46 | 0.15 | 200 |
| | 150 | 22 | 45 | EETED2W151HJ | 1.53 | 0.15 | 200 |
| | | 25 | 40 | EETED2W151JJ | 1.53 | 0.15 | 200 |
| | | 30 | 30 | EETED2W151KJ | 1.53 | 0.15 | 200 |
| | | 35 | 25 | EETED2W151LJ | 1.53 | 0.15 | 200 |
| | 180 | 22 | 50 | EETED2W181HJ | 1.60 | 0.15 | 200 |
| | | 25 | 40 | EETED2W181JJ | 1.60 | 0.15 | 200 |
| | | 30 | 30 | EETED2W181KJ | 1.60 | 0.15 | 200 |
| | | 35 | 25 | EETED2W181LJ | 1.60 | 0.15 | 200 |
| | 220 | 25 | 45 | EETED2W221JJ | 2.03 | 0.15 | 200 |
| | | 30 | 35 | EETED2W221KJ | 2.03 | 0.15 | 100 |
| 35 | | 30 | EETED2W221LJ | 2.03 | 0.15 | 200 | |
| 270 | 30 | 40 | EETED2W271KJ | 2.45 | 0.15 | 100 | |
| | 35 | 35 | EETED2W271LJ | 2.45 | 0.15 | 100 | |
| 330 | 30 | 50 | EETED2W331KJ | 2.64 | 0.15 | 100 | |
| | 35 | 40 | EETED2W331LJ | 2.64 | 0.15 | 100 | |
| 390 | 35 | 40 | EETED2W391LJ | 2.82 | 0.15 | 100 | |
| * | 470 | 35 | 50 | EETED2W471LJ | 3.53 | 0.15 | 100 |

* When capacitors of $\phi 35 \times 45L$ and $\phi 35 \times 50L$ are mounted on PWB, reinforce them with mounting clamp or adhesives. (Avoid using adhesives including halogenated compositions.)

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