

Radial Lead Type

Series: **EB** Type: **A**



■ Features

- Endurance : +105 °C 5000 h to 10000 h
- High ripple high frequency (High Voltage)
- RoHS directive compliant

■ Specifications

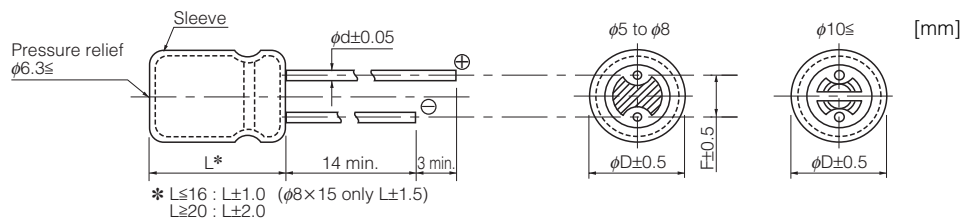
| | | |
|-----------------------|--|---|
| Category Temp. Range | -40 °C to +105 °C | -25 °C to +105 °C |
| Rated W.V. Range | 10 V.DC to 63 V.DC | 160 V.DC to 450 V.DC |
| Nominal Cap. Range | 0.47 μF to 3300 μF | 10 μF to 330 μF |
| Capacitance Tolerance | ±20 % (120 Hz/+20 °C) | |
| DC Leakage Current | I ≤ 0.01 CV or 3 (μA) After 2 minutes application of rated working voltage at +20 °C (Whichever is greater) | |
| tan δ | Please see the attached standard products list | |
| 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. | |
| | (10 to 63 V.DC) Duration : φ5×11 to φ8×11.5 : 5000 hours φ5×15 to φ6.3×15 : 7000 hours φ8×15 to φ12.5×25 : 10000 hours | |
| | Capacitance change | ±30 % of initial measured value |
| | tan δ | ≤ 300 % of initial specified value |
| | DC leakage current | ≤ initial specified value |
| | (160 to 450 V.DC) Duration : 5000 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 (10 ~ 63 V.DC)

| Capacitance (μF) | Frequency (Hz) | | | | |
|------------------|----------------|------|------|------|-------|
| | 60 | 120 | 1 k | 10 k | 100 k |
| 0.47 to 10 | 0.75 | 1.00 | 1.40 | 1.55 | 1.65 |
| 22 to 470 | 0.85 | 1.00 | 1.20 | 1.25 | 1.30 |
| 1000 to 3300 | 0.95 | 1.00 | 1.05 | 1.10 | 1.15 |

| W. V. (V. DC) | Frequency (Hz) | | | |
|---------------|----------------|------|-------------|--------------|
| | 120 | 1 k | 10 k to 30k | 30 k to 100k |
| 160 to 250 | 0.55 | 0.85 | 0.90 | 1.00 |
| 350 to 450 | 0.50 | 0.80 | 0.90 | 1.00 |

■ Dimensions in mm (not to scale)



| | [mm] | | | | | | |
|--------------|------|-----|-----|-----|------|-----|-----|
| Body Dia. φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
| Lead Dia. φd | 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 |

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. (V) | Cap. (±20 %) (μF) | Case size | | Specification | | | Lead Length | | | | Part No. | Min. Packaging Q'ty | |
|-------------|-------------------------|--------------|----------------|--|-------------------------------|----------------------|-------------------|------------------|----------------------|----------------------|----------------|-------------------------|-----------------|
| | | Dia. (mm) | Length (mm) | Ripple Current (120 Hz) (+105 °C) (mA r.m.s.) | tan δ (120 Hz) (+20 °C) | Endurance (hours) | Lead Dia. (mm) | Lead Space | | | | Straight Leads (pcs) | Taping (pcs) |
| | | | | | | | | Straight (mm) | Taping *B (mm) | Taping *H (mm) | | | |
| 10 | 100 | 5 | 15 | 105 | 0.30 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1A101() | 200 | 2000 |
| | | 5 | 11 | 66 | 0.30 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1A101S() | 200 | 2000 |
| | 220 | 6.3 | 15 | 152 | 0.30 | 7000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1A221() | 200 | 2000 |
| | | 6.3 | 11.2 | 100 | 0.30 | 5000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1A221S() | 200 | 2000 |
| | 470 | 8 | 15 | 278 | 0.30 | 10000 | 0.6 | 3.5 | 5.0 | | EEUEB1A471() | 200 | 1000 |
| | | 8 | 11.5 | 180 | 0.30 | 5000 | 0.6 | 3.5 | 5.0 | | EEUEB1A471S() | 200 | 1000 |
| 2200 | 12.5 | 20 | 540 | 0.32 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1A222() | 200 | 500 | |
| | 12.5 | 25 | 802 | 0.34 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1A332() | 200 | 500 | |
| 16 | 1000 | 10 | 20 | 430 | 0.25 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1C102() | 200 | 500 |
| | 2200 | 12.5 | 25 | 706 | 0.27 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1C222() | 200 | 500 |
| 25 | 47 | 5 | 15 | 78 | 0.22 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1E470() | 200 | 2000 |
| | | 5 | 11 | 55 | 0.22 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1E470S() | 200 | 2000 |
| | 100 | 6.3 | 15 | 135 | 0.22 | 7000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1E101() | 200 | 2000 |
| | | 6.3 | 11.2 | 95 | 0.22 | 5000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1E101S() | 200 | 2000 |
| | 220 | 8 | 11.5 | 125 | 0.22 | 5000 | 0.6 | 3.5 | 5.0 | | EEUEB1E221S() | 200 | 1000 |
| | 330 | 8 | 15 | 255 | 0.22 | 10000 | 0.6 | 3.5 | 5.0 | | EEUEB1E331() | 200 | 1000 |
| | 470 | 10 | 16 | 321 | 0.22 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1E471() | 200 | 500 |
| 1000 | 12.5 | 20 | 498 | 0.22 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1E102() | 200 | 500 | |
| 35 | 33 | 5 | 15 | 66 | 0.18 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1V330() | 200 | 2000 |
| | | 5 | 11 | 46 | 0.18 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1V330S() | 200 | 2000 |
| | 220 | 8 | 15 | 197 | 0.18 | 10000 | 0.6 | 3.5 | 5.0 | | EEUEB1V221() | 200 | 1000 |
| | 330 | 10 | 16 | 278 | 0.18 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1V331() | 200 | 500 |
| | 470 | 10 | 20 | 349 | 0.18 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1V471() | 200 | 500 |
| 1000 | 12.5 | 25 | 586 | 0.18 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1V102() | 200 | 500 | |
| 50 | 0.47 | 5 | 11 | 4 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1HR47S() | 200 | 2000 |
| | 1 | 5 | 11 | 8 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H1R0S() | 200 | 2000 |
| | 2.2 | 5 | 11 | 15 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H2R2S() | 200 | 2000 |
| | 3.3 | 5 | 11 | 18 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H3R3S() | 200 | 2000 |
| | 4.7 | 5 | 11 | 18 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H4R7S() | 200 | 2000 |
| | 10 | 5 | 11 | 27 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H100S() | 200 | 2000 |
| | | 5 | 15 | 55 | 0.15 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H220() | 200 | 2000 |
| | 22 | 5 | 11 | 39 | 0.15 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1H220S() | 200 | 2000 |
| | | 6.3 | 15 | 87 | 0.15 | 7000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1H470() | 200 | 2000 |
| | 47 | 6.3 | 11.2 | 61 | 0.15 | 5000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1H470S() | 200 | 2000 |
| | 100 | 8 | 11.5 | 99 | 0.15 | 5000 | 0.6 | 3.5 | 5.0 | | EEUEB1H101S() | 200 | 1000 |
| | 220 | 10 | 16 | 234 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1H221() | 200 | 500 |
| | 330 | 10 | 20 | 293 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1H331() | 200 | 500 |
| | 470 | 12.5 | 20 | 370 | 0.15 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1H471() | 200 | 500 |
| 63 | 0.47 | 5 | 15 | 6 | 0.12 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1JR47() | 200 | 2000 |
| | | 5 | 11 | 4.5 | 0.12 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1JR47S() | 200 | 2000 |
| | 1 | 5 | 15 | 12 | 0.12 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J1R0() | 200 | 2000 |
| | | 5 | 11 | 9 | 0.12 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J1R0S() | 200 | 2000 |
| | 2.2 | 5 | 15 | 22 | 0.12 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J2R2() | 200 | 2000 |
| | | 5 | 11 | 16.5 | 0.12 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J2R2S() | 200 | 2000 |
| | 3.3 | 5 | 15 | 30 | 0.12 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J3R3() | 200 | 2000 |
| | | 5 | 11 | 20 | 0.12 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J3R3S() | 200 | 2000 |
| | 4.7 | 5 | 15 | 30 | 0.12 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J4R7() | 200 | 2000 |
| | | 5 | 11 | 23 | 0.12 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J4R7S() | 200 | 2000 |
| | 10 | 5 | 15 | 46 | 0.12 | 7000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J100() | 200 | 2000 |
| | | 5 | 11 | 30 | 0.12 | 5000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUEB1J100S() | 200 | 2000 |
| | 22 | 6.3 | 15 | 55 | 0.12 | 7000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1J220() | 200 | 2000 |
| | | 6.3 | 11.2 | 40 | 0.12 | 5000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1J220S() | 200 | 2000 |
| | 33 | 6.3 | 15 | 71 | 0.12 | 7000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1J330() | 200 | 2000 |
| | | 6.3 | 11.2 | 50 | 0.12 | 5000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUEB1J330S() | 200 | 2000 |
| | 47 | 8 | 15 | 94 | 0.12 | 10000 | 0.6 | 3.5 | 5.0 | | EEUEB1J470() | 200 | 1000 |
| | | 8 | 11.5 | 80 | 0.12 | 5000 | 0.6 | 3.5 | 5.0 | | EEUEB1J470S() | 200 | 1000 |
| 100 | 8 | 15 | 180 | 0.12 | 10000 | 0.6 | 3.5 | 5.0 | | EEUEB1J101() | 200 | 1000 | |
| 220 | 10 | 20 | 292 | 0.12 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1J221() | 200 | 500 | |
| 330 | 12.5 | 20 | 381 | 0.12 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1J331() | 200 | 500 | |
| 470 | 12.5 | 25 | 454 | 0.12 | 10000 | 0.6 | 5.0 | 5.0 | | EEUEB1J471() | 200 | 500 | |

Endurance : 105 °C ϕ5×11 to ϕ8×11.5=5000 h, ϕ5×15 to ϕ6.3×15=7000 h, ϕ8×15 to ϕ12.5×25=10000 h

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

The taping dimensions are explained on EE189 of our Catalog. Please use it as a reference guide.

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

| W.V. (V) | Cap. (±20 %) (μF) | Case size | | Specification | | | Lead Length | | | Part No. | Min. Packaging Q'ty | | |
|-------------|-------------------------|--------------|----------------|--|-------------------------------|----------------------|-------------------|------------------|----------------------|----------------|-------------------------|-----------------|-----|
| | | Dia. (mm) | Length (mm) | Ripple Current (120 Hz) (+105 °C) (mA r.m.s.) | tan δ (120 Hz) (+20 °C) | Endurance (hours) | Lead Dia. (mm) | Lead Space | | | Straight Leads (pcs) | Taping (pcs) | |
| | | | | | | | | Straight (mm) | Taping *B (mm) | | | | |
| 160 | 22 | 10 | 20 | 470 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2C220() | 200 | 500 | |
| | 33 | 10 | 20 | 470 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2C330() | 200 | 500 | |
| | 47 | 12.5 | 20 | 600 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2C470() | 200 | 500 | |
| | 68 | 12.5 | 25 | 750 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2C680() | 200 | 500 | |
| | | 16 | 20 | 750 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2C680S() | 100 | 250 | |
| | 100 | 16 | 25 | 1060 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2C101() | 100 | 250 | |
| | | 18 | 20 | 1060 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2C101S() | 100 | 250 | |
| | 150 | 16 | 31.5 | 1280 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2C151 | 100 | – | |
| | | 18 | 25 | 1280 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2C151S() | 100 | 250 | |
| | 220 | 16 | 31.5 | 1280 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2C221 | 100 | – | |
| | | 18 | 25 | 1280 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2C221S() | 100 | 250 | |
| | 330 | 18 | 31.5 | 1690 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2C331 | 50 | – | |
| 200 | 22 | 10 | 20 | 470 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2D220() | 200 | 500 | |
| | 33 | 12.5 | 20 | 600 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2D330() | 200 | 500 | |
| | 47 | 12.5 | 20 | 600 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2D470() | 200 | 500 | |
| | 68 | 12.5 | 25 | 750 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2D680() | 200 | 500 | |
| | | 16 | 20 | 750 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2D680S() | 100 | 250 | |
| | 100 | 16 | 25 | 1060 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2D101() | 100 | 250 | |
| | | 18 | 20 | 1060 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2D101S() | 100 | 250 | |
| | 150 | 16 | 31.5 | 1280 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2D151 | 100 | – | |
| | | 18 | 25 | 1280 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2D151S() | 100 | 250 | |
| | 220 | 18 | 31.5 | 1690 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2D221 | 100 | – | |
| | 250 | 22 | 12.5 | 20 | 560 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2E220() | 200 | 500 |
| | | 33 | 12.5 | 20 | 560 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2E330() | 200 | 500 |
| 47 | | 12.5 | 25 | 710 | 0.15 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2E470() | 200 | 500 | |
| | | 16 | 20 | 710 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2E470S() | 100 | 250 | |
| 68 | | 16 | 25 | 990 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2E680() | 100 | 250 | |
| | | 18 | 20 | 990 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2E680S() | 100 | 250 | |
| 100 | | 16 | 31.5 | 1200 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2E101 | 100 | – | |
| | | 18 | 25 | 1200 | 0.15 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2E101S() | 100 | 250 | |
| 150 | | 18 | 31.5 | 1470 | 0.15 | 5000 | 0.8 | 7.5 | – | EEUEB2E151 | 50 | – | |
| 350 | | 10 | 10 | 20 | 270 | 0.20 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2V100() | 200 | 500 |
| | | 22 | 12.5 | 20 | 350 | 0.20 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2V220() | 200 | 500 |
| | | 33 | 16 | 20 | 480 | 0.20 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2V330S() | 100 | 250 |
| | 16 | | 25 | 640 | 0.20 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2V470() | 100 | 250 | |
| | 47 | 18 | 20 | 640 | 0.20 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2V470S() | 100 | 250 | |
| | | 16 | 31.5 | 780 | 0.20 | 5000 | 0.8 | 7.5 | – | EEUEB2V680 | 100 | – | |
| | 68 | 18 | 25 | 780 | 0.20 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2V680S() | 100 | 250 | |
| | | 100 | 18 | 31.5 | 970 | 0.20 | 5000 | 0.8 | 7.5 | – | EEUEB2V101 | 50 | – |
| | 400 | 10 | 10 | 20 | 250 | 0.24 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2G100() | 200 | 500 |
| | | 22 | 12.5 | 25 | 410 | 0.24 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2G220() | 200 | 500 |
| | | | 16 | 20 | 410 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2G220S() | 100 | 250 |
| | | 33 | 16 | 25 | 600 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2G330() | 100 | 250 |
| 18 | | | 20 | 600 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2G330S() | 100 | 250 | |
| 47 | | 16 | 31.5 | 730 | 0.24 | 5000 | 0.8 | 7.5 | – | EEUEB2G470 | 100 | – | |
| | | 18 | 25 | 730 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2G470S() | 100 | 250 | |
| 450 | | 10 | 12.5 | 20 | 310 | 0.24 | 5000 | 0.6 | 5.0 | 5.0 | EEUEB2W100() | 200 | 500 |
| | | 22 | 16 | 25 | 560 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2W220() | 100 | 250 |
| | | | 18 | 20 | 560 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2W220S() | 100 | 250 |
| | | 33 | 16 | 31.5 | 680 | 0.24 | 5000 | 0.8 | 7.5 | – | EEUEB2W330() | 100 | – |
| | | | 18 | 25 | 680 | 0.24 | 5000 | 0.8 | 7.5 | 7.5 | EEUEB2W330S() | 100 | 250 |
| | 47 | 18 | 31.5 | 850 | 0.24 | 5000 | 0.8 | 7.5 | – | EEUEB2W470 | 50 | – | |

Endurance : 105 °C 5000 h

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