# LE Series

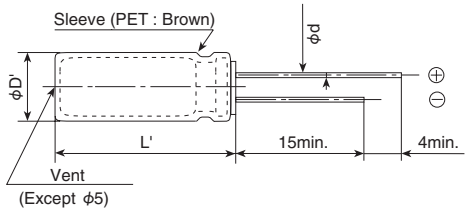
- Suitable for long life products
- Downsize and long life
- Endurance with ripple current : 10,000 hours at 105℃
- Case size range : φ5×11L to φ8×11.5L
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

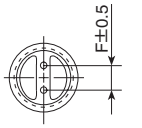
## ◆SPECIFICATION

| Items | Characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Category Temperature Range | -40 to +105℃ | | | | | | | | |
| Rated Voltage Range | 10 to 100Vdc | | | | | | | | |
| Capacitance Tolerance | ±20% (M) | | | | | | | | (at 20℃, 120Hz) |
| Leakage Current | I=0.01CV or 3μA, whichever is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) | | | | | | | | (at 20℃ after 2 minutes) |
| Dissipation Factor (tan δ) | Rated voltage (Vdc) | 10V | 16V | 25V | 35V | 50V | 63V | 100V | |
| | tan δ (Max.) | 0.45 | 0.35 | 0.30 | 0.22 | 0.19 | 0.17 | 0.15 | (at 20℃,120Hz) |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (Vdc) | 10V | 16V | 25V | 35V | 50V | 63V | 100V | |
| | Z(-25℃)/Z(20℃) | 8 | 6 | 4 | 4 | 3 | 3 | 3 | (at 120Hz) |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 10,000 hours at 105℃. | | | | | | | | |
| | Capacitance change | ≦±25% of the initial value | | | | | | | |
| | D.F. (tan δ) | ≦300% of the initial specified value | | | | | | | |
| | Leakage current | ≦The initial specified value | | | | | | | |
| Shelf Life | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. | | | | | | | | |
| | Capacitance change | ≦±25% of the initial value | | | | | | | |
| | D.F. (tan δ) | ≦300% of the initial specified value | | | | | | | |
| | Leakage current | ≦The initial specified value | | | | | | | |

## ◆DIMENSIONS [mm]

●Terminal Code : E

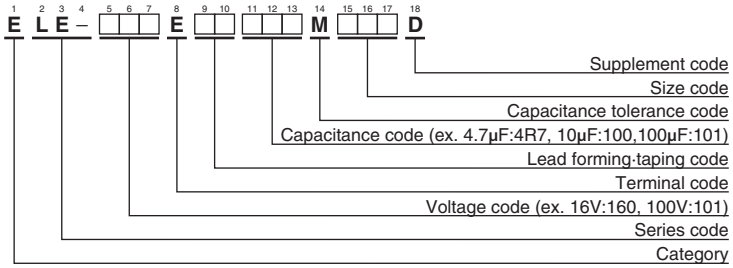



Gas escape end seal

| φD | 5 | 6.3 | 8 |
|---|---|---|---|
| φd | 0.5 | 0.5 | 0.6 |
| F | 2.0 | 2.5 | 3.5 |
| φD' | φD+0.5max. | | |
| L' | L+1.5max. | | |

## ◆PART NUMBERING SYSTEM




Please refer to "Product code guide (radial lead type)"

# LE Series

## ◆STANDARD RATINGS

| WV ($V_{dc}$) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (mArms/105℃, 100kHz) | Part No. |
|---|---|---|---|---|---|
| 10 | 100 | 5×11 | 0.45 | 130 | ELE-100E□□101ME11D |
| | 220 | 6.3×11 | 0.45 | 210 | ELE-100E□□221MF11D |
| | 330 | 8×11.5 | 0.45 | 330 | ELE-100E□□331MHB5D |
| 16 | 47 | 5×11 | 0.35 | 130 | ELE-160E□□470ME11D |
| | 100 | 6.3×11 | 0.35 | 210 | ELE-160E□□101MF11D |
| | 220 | 8×11.5 | 0.35 | 330 | ELE-160E□□221MHB5D |
| 25 | 33 | 5×11 | 0.30 | 130 | ELE-250E□□330ME11D |
| | 47 | 5×11 | 0.30 | 130 | ELE-250E□□470ME11D |
| | 100 | 6.3×11 | 0.30 | 210 | ELE-250E□□101MF11D |
| 35 | 33 | 5×11 | 0.22 | 130 | ELE-350E□□330ME11D |
| | 47 | 6.3×11 | 0.22 | 210 | ELE-350E□□470MF11D |
| | 100 | 8×11.5 | 0.22 | 330 | ELE-350E□□101MHB5D |
| 50 | 1.0 | 5×11 | 0.19 | 25 | ELE-500E□□1R0ME11D |
| | 2.2 | 5×11 | 0.19 | 35 | ELE-500E□□2R2ME11D |
| | 3.3 | 5×11 | 0.19 | 70 | ELE-500E□□3R3ME11D |
| | 4.7 | 5×11 | 0.19 | 80 | ELE-500E□□4R7ME11D |
| | 10 | 5×11 | 0.19 | 90 | ELE-500E□□100ME11D |
| | 22 | 5×11 | 0.19 | 110 | ELE-500E□□220ME11D |
| | 33 | 6.3×11 | 0.19 | 190 | ELE-500E□□330MF11D |
| | 47 | 6.3×11 | 0.19 | 190 | ELE-500E□□470MF11D |
| | 100 | 8×11.5 | 0.19 | 270 | ELE-500E□□101MHB5D |
| 63 | 10 | 5×11 | 0.17 | 80 | ELE-630E□□100ME11D |
| | 22 | 6.3×11 | 0.17 | 170 | ELE-630E□□220MF11D |
| | 33 | 6.3×11 | 0.17 | 170 | ELE-630E□□330MF11D |
| | 47 | 8×11.5 | 0.17 | 240 | ELE-630E□□470MHB5D |
| 100 | 1.0 | 5×11 | 0.15 | 40 | ELE-101E□□1R0ME11D |
| | 2.2 | 5×11 | 0.15 | 50 | ELE-101E□□2R2ME11D |
| | 3.3 | 5×11 | 0.15 | 60 | ELE-101E□□3R3ME11D |
| | 4.7 | 5×11 | 0.15 | 70 | ELE-101E□□4R7ME11D |
| | 10 | 6.3×11 | 0.15 | 150 | ELE-101E□□100MF11D |
| | 22 | 8×11.5 | 0.15 | 230 | ELE-101E□□220MHB5D |

□□ : Enter the appropriate lead forming or taping code.

## ◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Capacitance(μF) \ Frequency(Hz) | 120 | 1k | 10k | 100k |
|---|---|---|---|---|
| 1.0 to 10 | 0.42 | 0.60 | 0.80 | 1.00 |
| 22 to 33 | 0.55 | 0.75 | 0.90 | 1.00 |
| 47 to 330 | 0.70 | 0.85 | 0.95 | 1.00 |

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.