

# LBG Series

- For airbag application
- High capacitance, low impedance, and good low temperature behavior
- Endurance with ripple current : 5,000 hours at 105°C
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

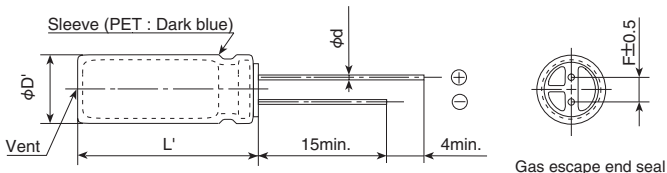


## SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                                                                       |                                      |      |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|
| Category                                               | -55 to +105℃                                                                                                                                                                                                                                                                          |                                      |      |
| Temperature Range                                      |                                                                                                                                                                                                                                                                                       |                                      |      |
| Rated Voltage Range                                    | 25 & 35V <sub>dc</sub>                                                                                                                                                                                                                                                                |                                      |      |
| Capacitance Range                                      | 1,000 to 11,000μF (at 20℃, 120Hz)                                                                                                                                                                                                                                                     |                                      |      |
| Capacitance Tolerance                                  | 0 to +30% (A) (at 20℃, 120Hz)                                                                                                                                                                                                                                                         |                                      |      |
| Leakage Current                                        | I=0.01CV<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 (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 25V                                  | 35V  |
|                                                        | tan δ (Max.)                                                                                                                                                                                                                                                                          | 0.20                                 | 0.16 |
|                                                        | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)                                                                                                                                                                      |                                      |      |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 25V                                  | 35V  |
|                                                        | Z(-55℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 3                                    | 3    |
|                                                        | Impedance at -40℃and 20℃ 100kHz in the STANDARD RATINGS (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 5,000 hours at 105℃.                                         |                                      |      |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value          |      |
|                                                        | D.F. (tan δ )                                                                                                                                                                                                                                                                         | ≤200% 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                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value          |      |
|                                                        | D.F. (tan δ )                                                                                                                                                                                                                                                                         | ≤200% of the initial specified value |      |
|                                                        | Leakage current                                                                                                                                                                                                                                                                       | ≤The initial specified value         |      |

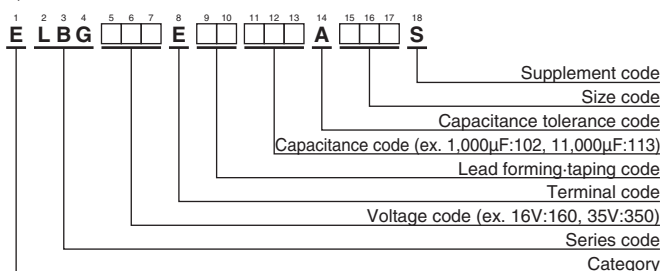
## DIMENSIONS [mm]

### Terminal Code : E



|     |            |      |     |     |
|-----|------------|------|-----|-----|
| φD  | 12.5       | 14.5 | 16  | 18  |
| φd  | 0.6        | 0.8  | 0.8 | 0.8 |
| F   | 5.0        | 7.5  | 7.5 | 7.5 |
| φD' | φD+0.5max. |      |     |     |
| L'  | L+1.5max.  |      |     |     |

## PART NUMBERING SYSTEM



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

### ◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φ D×L(mm) | Impedance (Ω max./100kHz) |       | Rated ripple current<br>(mA <sub>rms</sub> /105°C, 100kHz) | Part No.             |
|--------------------------|-------------|------------------------|---------------------------|-------|------------------------------------------------------------|----------------------|
|                          |             |                        | 20°C                      | -40°C |                                                            |                      |
| 25                       | 1,700       | 12.5 × 20              | 0.057                     | 0.29  | 1,700                                                      | ELBG250E □□ 172AK20S |
|                          | 2,400       | 12.5 × 25              | 0.045                     | 0.23  | 2,000                                                      | ELBG250E □□ 242AK25S |
|                          | 2,400       | 14.5 × 20              | 0.051                     | 0.26  | 2,000                                                      | ELBG250E □□ 242AU20S |
|                          | 2,800       | 12.5 × 30              | 0.039                     | 0.20  | 2,300                                                      | ELBG250E □□ 282AK30S |
|                          | 3,000       | 16 × 20                | 0.044                     | 0.22  | 2,250                                                      | ELBG250E □□ 302AL20S |
|                          | 3,400       | 14.5 × 25              | 0.041                     | 0.21  | 2,400                                                      | ELBG250E □□ 342AU25S |
|                          | 3,500       | 12.5 × 35              | 0.033                     | 0.17  | 2,700                                                      | ELBG250E □□ 352AK35S |
|                          | 4,200       | 16 × 25                | 0.033                     | 0.17  | 2,600                                                      | ELBG250E □□ 422AL25S |
|                          | 4,200       | 18 × 20                | 0.042                     | 0.21  | 2,500                                                      | ELBG250E □□ 422AM20S |
|                          | 4,500       | 12.5 × 40              | 0.027                     | 0.14  | 3,100                                                      | ELBG250E □□ 452AK40S |
|                          | 4,600       | 14.5 × 31.5            | 0.032                     | 0.16  | 2,700                                                      | ELBG250E □□ 462AUN3S |
|                          | 5,400       | 14.5 × 35.5            | 0.028                     | 0.14  | 3,100                                                      | ELBG250E □□ 542AUP1S |
|                          | 5,600       | 16 × 31.5              | 0.026                     | 0.13  | 3,200                                                      | ELBG250E □□ 562ALN3S |
|                          | 6,000       | 18 × 25                | 0.030                     | 0.15  | 2,800                                                      | ELBG250E □□ 602AM25S |
|                          | 6,400       | 14.5 × 40              | 0.025                     | 0.13  | 3,400                                                      | ELBG250E □□ 642AU40S |
|                          | 6,600       | 16 × 35.5              | 0.023                     | 0.12  | 3,500                                                      | ELBG250E □□ 662ALP1S |
|                          | 7,800       | 16 × 40                | 0.021                     | 0.11  | 3,800                                                      | ELBG250E □□ 782AL40S |
|                          | 7,900       | 18 × 31.5              | 0.024                     | 0.12  | 3,500                                                      | ELBG250E □□ 792AMN3S |
| 35                       | 9,200       | 18 × 35.5              | 0.022                     | 0.11  | 3,700                                                      | ELBG250E □□ 922AMP1S |
|                          | 11,000      | 18 × 40                | 0.020                     | 0.10  | 4,000                                                      | ELBG250E □□ 113AM40S |
|                          | 1,000       | 12.5 × 20              | 0.057                     | 0.29  | 1,700                                                      | ELBG350E □□ 102AK20S |
|                          | 1,400       | 12.5 × 25              | 0.045                     | 0.23  | 2,000                                                      | ELBG350E □□ 142AK25S |
|                          | 1,400       | 14.5 × 20              | 0.051                     | 0.26  | 2,000                                                      | ELBG350E □□ 142AU20S |
|                          | 1,600       | 12.5 × 30              | 0.039                     | 0.20  | 2,300                                                      | ELBG350E □□ 162AK30S |
|                          | 1,800       | 16 × 20                | 0.044                     | 0.22  | 2,250                                                      | ELBG350E □□ 182AL20S |
|                          | 2,000       | 14.5 × 25              | 0.041                     | 0.21  | 2,400                                                      | ELBG350E □□ 202AU25S |
|                          | 2,100       | 12.5 × 35              | 0.033                     | 0.17  | 2,700                                                      | ELBG350E □□ 212AK35S |
|                          | 2,500       | 16 × 25                | 0.033                     | 0.17  | 2,600                                                      | ELBG350E □□ 252AL25S |
|                          | 2,500       | 18 × 20                | 0.042                     | 0.21  | 2,500                                                      | ELBG350E □□ 252AM20S |
|                          | 2,700       | 12.5 × 40              | 0.027                     | 0.14  | 3,100                                                      | ELBG350E □□ 272AK40S |
|                          | 2,800       | 14.5 × 31.5            | 0.032                     | 0.16  | 2,700                                                      | ELBG350E □□ 282AUN3S |
|                          | 3,200       | 14.5 × 35.5            | 0.028                     | 0.14  | 3,100                                                      | ELBG350E □□ 322AUP1S |
|                          | 3,400       | 16 × 31.5              | 0.026                     | 0.13  | 3,200                                                      | ELBG350E □□ 342ALN3S |
|                          | 3,600       | 18 × 25                | 0.030                     | 0.15  | 2,800                                                      | ELBG350E □□ 362AM25S |
|                          | 3,800       | 14.5 × 40              | 0.025                     | 0.13  | 3,400                                                      | ELBG350E □□ 382AU40S |
|                          | 4,000       | 16 × 35.5              | 0.023                     | 0.12  | 3,500                                                      | ELBG350E □□ 402ALP1S |
|                          | 4,700       | 16 × 40                | 0.021                     | 0.11  | 3,800                                                      | ELBG350E □□ 472AL40S |
|                          | 4,800       | 18 × 31.5              | 0.024                     | 0.12  | 3,500                                                      | ELBG350E □□ 482AMN3S |
|                          | 5,600       | 18 × 35.5              | 0.022                     | 0.11  | 3,700                                                      | ELBG350E □□ 562AMP1S |
|                          | 6,700       | 18 × 40                | 0.020                     | 0.10  | 4,000                                                      | ELBG350E □□ 672AM40S |

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

### ◆RATED RIPPLE CURRENT MULTIPLIERS

#### ● Frequency Multipliers

| Capacitance(μF) \ Frequency(Hz) | 120  | 1k   | 10k  | 100k |
|---------------------------------|------|------|------|------|
| 1,000 to 2,000                  | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,100 to 3,800                  | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,000 to 11,000                 | 0.85 | 0.95 | 0.98 | 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°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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