

# 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

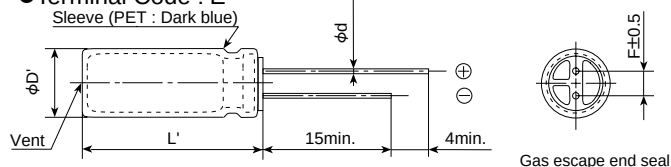


## SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                                                                         |                                      |                  |  |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|--|
| Category                                               | -55 to +105°C                                                                                                                                                                                                                                                                           |                                      |                  |  |
| Temperature Range                                      |                                                                                                                                                                                                                                                                                         |                                      |                  |  |
| Rated Voltage Range                                    | 25 & 35V <sub>dc</sub>                                                                                                                                                                                                                                                                  |                                      |                  |  |
| Capacitance Range                                      | 1,000 to 11,000μF                                                                                                                                                                                                                                                                       |                                      | (at 20°C, 120Hz) |  |
| Capacitance Tolerance                                  | 0 to +30% (A)                                                                                                                                                                                                                                                                           |                                      | (at 20°C, 120Hz) |  |
| Leakage Current                                        | I=0.01CV<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                                                                                                                                         |                                      |                  |  |
| Dissipation Factor (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                        | 25V                                  | 35V              |  |
|                                                        | tanδ (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°C, 120Hz)                                                                                                                                                                       |                                      |                  |  |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                        | 25V                                  | 35V              |  |
|                                                        | Z(-55°C)/Z(+20°C)                                                                                                                                                                                                                                                                       | 3                                    | 3                |  |
|                                                        | Impedance at -40°C and 20°C 100kHz in the STANDARD RATINGS (at 120Hz)                                                                                                                                                                                                                   |                                      |                  |  |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 5,000 hours at 105°C.                                                                                               |                                      |                  |  |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                      | ≤±20% of the initial value           |                  |  |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                                                                                             | ≤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°C after exposing them for 1,000 hours at 105°C 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. (tanδ)                                                                                                                                                                                                                                                                             | ≤200% of the initial specified value |                  |  |
|                                                        | Leakage current                                                                                                                                                                                                                                                                         | ≤The initial specified value         |                  |  |

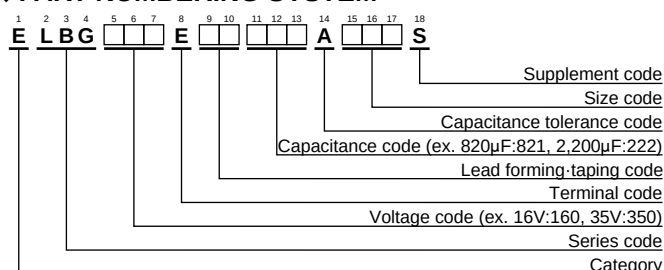
## DIMENSIONS [mm]

### 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>(Vdc) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance (Ωmax/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 |
|             | 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 |
| 35          | 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.