

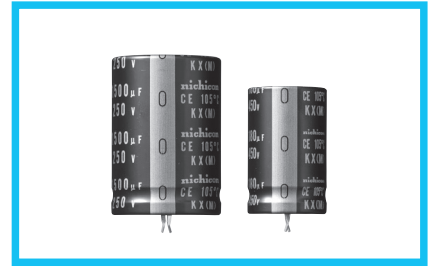
# ALUMINUM ELECTROLYTIC CAPACITORS



Snap-in Terminal Type, For Audio Equipment, of Switching Power Supplies



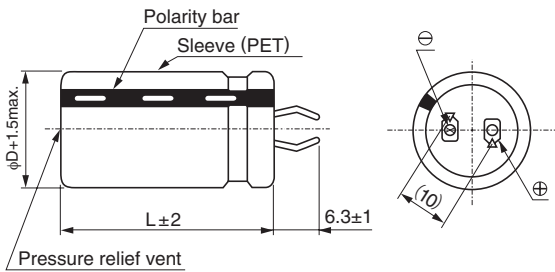
- In order to get high quality sound from 105°C standard series.
- Selected materials to achieve superior acoustic sound.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



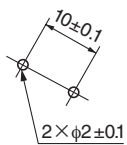
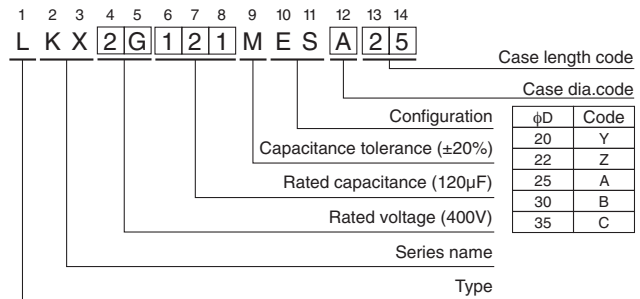
## Specifications

| Item                          | Performance Characteristics  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
|-------------------------------|--|---|-------------------|------------|------------|------------------------|---------------------|---|---|--|---------------------|----|---|
| Category Temperature Range    | - 40 to +105°C (200 • 250V), - 25 to + 105°C (400 • 450V)  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Rated Voltage Range           | 200 to 450V  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Rated Capacitance Range       | 56 to 2200µF   |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Leakage Current               | $I \leq 3\sqrt{3V}$ (µA) (After 5 minutes' application of rated voltage at 20°C) [C: Rated Capacitance(µF), V: Voltage (V)]  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Tangent of loss angle (tan δ) | See refer to next page (Measurement frequency : 120Hz at 20°C)   |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Stability at Low Temperature  | <table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>200 to 250</th> <th>400 to 450</th> </tr> </thead> <tbody> <tr> <td>Impedance ratio (max.)</td> <td>Z(-25°C) / Z(+20°C)</td> <td>4</td> <td>8</td> </tr> <tr> <td></td> <td>Z(-40°C) / Z(+20°C)</td> <td>12</td> <td>—</td> </tr> </tbody> </table> |   | Rated voltage (V) | 200 to 250 | 400 to 450 | Impedance ratio (max.) | Z(-25°C) / Z(+20°C) | 4 | 8 |  | Z(-40°C) / Z(+20°C) | 12 | — |
|                               | Rated voltage (V)  | 200 to 250                                    | 400 to 450        |            |            |                        |                     |   |   |  |                     |    |   |
| Impedance ratio (max.)        | Z(-25°C) / Z(+20°C)  | 4   | 8                 |            |            |                        |                     |   |   |  |                     |    |   |
|                               | Z(-40°C) / Z(+20°C)  | 12  | —                 |            |            |                        |                     |   |   |  |                     |    |   |
|                               | Measurement frequency : 120Hz  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Endurance                     | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage.  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
|                               | Capacitance change   | Within ±20% of the initial capacitance value  |                   |            |            |                        |                     |   |   |  |                     |    |   |
|                               | tan δ  | 200% or less than the initial specified value |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Shelf Life                    | After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed at right.   |   |                   |            |            |                        |                     |   |   |  |                     |    |   |
|                               | Capacitance change   | Within ±15% of the initial capacitance value  |                   |            |            |                        |                     |   |   |  |                     |    |   |
|                               | tan δ  | 150% or less than the initial specified value |                   |            |            |                        |                     |   |   |  |                     |    |   |
| Marking                       | Printed with gold color letter on black sleeve.  |   |                   |            |            |                        |                     |   |   |  |                     |    |   |

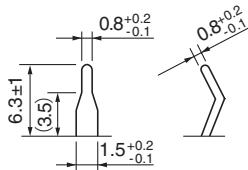
## Drawing



Type numbering system (Example : 400 V 120µF , Dia.φ25)



(PC board hole dimensions)



(Terminal dimensions)

## Frequency coefficient of rated ripple current

| Frequency (Hz) | 50          | 60   | 120  | 300  | 1k   | 10k  | 50k or more |
|----------------|-------------|------|------|------|------|------|-------------|
| Coeff.         | 200 to 250V | 0.81 | 0.85 | 1.00 | 1.17 | 1.32 | 1.45        |
|                | 400 to 450V | 0.77 | 0.82 | 1.00 | 1.16 | 1.30 | 1.41        |

● Dimension table in next page.



■ Dimensions

| 200V (2D) |                 |                     |       |                |
|-----------|-----------------|---------------------|-------|----------------|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Code           |
| 220       | 20 × 25         | 0.90                | 0.15  | LKX2D221MESY25 |
| 270       | 20 × 30         | 0.99                | 0.15  | LKX2D271MESY30 |
|           | 22 × 25         | 0.99                | 0.15  | LKX2D271MESZ25 |
| 330       | 20 × 35         | 1.20                | 0.15  | LKX2D331MESY35 |
| 390       | 20 × 40         | 1.31                | 0.15  | LKX2D391MESY40 |
|           | 22 × 30         | 1.31                | 0.15  | LKX2D391MESZ30 |
|           | 25 × 25         | 1.31                | 0.15  | LKX2D391MESA25 |
| 470       | 20 × 45         | 1.48                | 0.15  | LKX2D471MESY45 |
|           | 22 × 35         | 1.48                | 0.15  | LKX2D471MESZ35 |
|           | 25 × 30         | 1.48                | 0.15  | LKX2D471MESA30 |
| 560       | 20 × 50         | 1.60                | 0.15  | LKX2D561MESY50 |
|           | 22 × 40         | 1.60                | 0.15  | LKX2D561MESZ40 |
|           | 25 × 35         | 1.60                | 0.15  | LKX2D561MESA35 |
| 680       | 22 × 45         | 1.75                | 0.15  | LKX2D681MESZ45 |
|           | 25 × 40         | 1.75                | 0.15  | LKX2D681MESA40 |
|           | 30 × 30         | 1.75                | 0.15  | LKX2D681MESB30 |
|           | 35 × 25         | 1.75                | 0.15  | LKX2D681MESC25 |
| 820       | 25 × 45         | 2.04                | 0.15  | LKX2D821MESA45 |
|           | 30 × 35         | 2.04                | 0.15  | LKX2D821MESB35 |
| 1000      | 25 × 50         | 2.30                | 0.15  | LKX2D102MESA50 |
|           | 30 × 40         | 2.30                | 0.15  | LKX2D102MESB40 |
|           | 35 × 30         | 2.30                | 0.15  | LKX2D102MESC30 |
| 1200      | 30 × 45         | 2.65                | 0.15  | LKX2D122MESB45 |
|           | 35 × 35         | 2.65                | 0.15  | LKX2D122MESC35 |
| 1500      | 30 × 50         | 2.80                | 0.15  | LKX2D152MESB50 |
|           | 35 × 40         | 2.80                | 0.15  | LKX2D152MESC40 |
| 1800      | 35 × 45         | 3.08                | 0.15  | LKX2D182MESC45 |
| 2200      | 35 × 50         | 3.48                | 0.15  | LKX2D222MESC50 |

| 400V (2G) |                 |                     |       |                |
|-----------|-----------------|---------------------|-------|----------------|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Code           |
| 68        | 20 × 25         | 0.49                | 0.15  | LKX2G680MESY25 |
| 82        | 20 × 30         | 0.64                | 0.15  | LKX2G820MESY30 |
|           | 22 × 25         | 0.64                | 0.15  | LKX2G820MESZ25 |
| 100       | 20 × 35         | 0.68                | 0.15  | LKX2G101MESY35 |
| 120       | 20 × 35         | 0.73                | 0.15  | LKX2G121MESY35 |
|           | 22 × 30         | 0.73                | 0.15  | LKX2G121MESZ30 |
|           | 25 × 25         | 0.73                | 0.15  | LKX2G121MESA25 |
| 150       | 20 × 45         | 0.85                | 0.15  | LKX2G151MESY45 |
|           | 22 × 35         | 0.85                | 0.15  | LKX2G151MESZ35 |
|           | 25 × 30         | 0.85                | 0.15  | LKX2G151MESA30 |
| 180       | 20 × 50         | 0.95                | 0.15  | LKX2G181MESY50 |
|           | 22 × 40         | 0.95                | 0.15  | LKX2G181MESZ40 |
|           | 25 × 35         | 0.95                | 0.15  | LKX2G181MESA35 |
| 220       | 22 × 50         | 1.10                | 0.15  | LKX2G221MESZ50 |
|           | 25 × 40         | 1.10                | 0.15  | LKX2G221MESA40 |
|           | 30 × 30         | 1.10                | 0.15  | LKX2G221MESB30 |
|           | 35 × 25         | 1.10                | 0.15  | LKX2G221MESC25 |
| 270       | 25 × 45         | 1.22                | 0.15  | LKX2G271MESA45 |
|           | 30 × 35         | 1.22                | 0.15  | LKX2G271MESB35 |
| 330       | 25 × 50         | 1.44                | 0.15  | LKX2G331MESA50 |
|           | 30 × 40         | 1.44                | 0.15  | LKX2G331MESB40 |
|           | 35 × 30         | 1.44                | 0.15  | LKX2G331MESC30 |
| 390       | 30 × 45         | 1.55                | 0.15  | LKX2G391MESB45 |
|           | 35 × 35         | 1.55                | 0.15  | LKX2G391MESC35 |
| 470       | 30 × 50         | 1.68                | 0.15  | LKX2G471MESB50 |
|           | 35 × 40         | 1.68                | 0.15  | LKX2G471MESC40 |
| 560       | 35 × 45         | 1.90                | 0.15  | LKX2G561MESC45 |
| 680       | 35 × 50         | 2.12                | 0.15  | LKX2G681MESC50 |

| 250V (2E) |                 |                     |       |                |
|-----------|-----------------|---------------------|-------|----------------|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Code           |
| 180       | 20 × 25         | 0.90                | 0.15  | LKX2E181MESY25 |
| 220       | 20 × 30         | 1.00                | 0.15  | LKX2E221MESY30 |
|           | 22 × 25         | 1.00                | 0.15  | LKX2E221MESZ25 |
| 270       | 20 × 35         | 1.10                | 0.15  | LKX2E271MESY35 |
|           | 22 × 30         | 1.10                | 0.15  | LKX2E271MESZ30 |
| 330       | 20 × 40         | 1.20                | 0.15  | LKX2E331MESY40 |
|           | 22 × 35         | 1.20                | 0.15  | LKX2E331MESZ35 |
|           | 25 × 25         | 1.20                | 0.15  | LKX2E331MESA25 |
| 390       | 20 × 45         | 1.30                | 0.15  | LKX2E391MESY45 |
|           | 22 × 40         | 1.30                | 0.15  | LKX2E391MESZ40 |
|           | 25 × 30         | 1.30                | 0.15  | LKX2E391MESA30 |
| 470       | 20 × 50         | 1.40                | 0.15  | LKX2E471MESY50 |
|           | 22 × 45         | 1.40                | 0.15  | LKX2E471MESZ45 |
|           | 25 × 35         | 1.40                | 0.15  | LKX2E471MESA35 |
| 560       | 30 × 25         | 1.40                | 0.15  | LKX2E471MESB25 |
|           | 22 × 50         | 1.50                | 0.15  | LKX2E561MESZ50 |
|           | 25 × 40         | 1.50                | 0.15  | LKX2E561MESA40 |
|           | 30 × 30         | 1.50                | 0.15  | LKX2E561MESB30 |
| 680       | 35 × 25         | 1.50                | 0.15  | LKX2E561MESC25 |
|           | 25 × 50         | 1.70                | 0.15  | LKX2E681MESA50 |
|           | 30 × 35         | 1.70                | 0.15  | LKX2E681MESB35 |
| 820       | 30 × 40         | 2.00                | 0.15  | LKX2E821MESB40 |
|           | 35 × 30         | 2.00                | 0.15  | LKX2E821MESC30 |
| 1000      | 30 × 45         | 2.20                | 0.15  | LKX2E102MESB45 |
|           | 35 × 35         | 2.20                | 0.15  | LKX2E102MESC35 |
| 1200      | 35 × 40         | 2.30                | 0.15  | LKX2E122MESC40 |
| 1500      | 35 × 50         | 2.50                | 0.15  | LKX2E152MESC50 |

| 450V (2W) |                 |                     |       |                |
|-----------|-----------------|---------------------|-------|----------------|
| Cap. (μF) | Size φD × L(mm) | Rated ripple (Arms) | tan δ | Code           |
| 56        | 20 × 25         | 0.44                | 0.20  | LKX2W560MESY25 |
| 68        | 20 × 30         | 0.50                | 0.20  | LKX2W680MESY30 |
| 82        | 20 × 35         | 0.64                | 0.20  | LKX2W820MESY35 |
|           | 22 × 30         | 0.64                | 0.20  | LKX2W820MESZ30 |
| 100       | 20 × 40         | 0.69                | 0.20  | LKX2W101MESY40 |
|           | 22 × 30         | 0.69                | 0.20  | LKX2W101MESZ30 |
|           | 25 × 25         | 0.69                | 0.20  | LKX2W101MESA25 |
| 120       | 20 × 45         | 0.72                | 0.20  | LKX2W121MESY45 |
|           | 22 × 35         | 0.72                | 0.20  | LKX2W121MESZ35 |
|           | 25 × 30         | 0.72                | 0.20  | LKX2W121MESA30 |
| 150       | 22 × 45         | 0.79                | 0.20  | LKX2W151MESZ45 |
|           | 25 × 35         | 0.79                | 0.20  | LKX2W151MESA35 |
|           | 30 × 25         | 0.79                | 0.20  | LKX2W151MESB25 |
| 180       | 22 × 50         | 0.87                | 0.20  | LKX2W181MESZ50 |
|           | 25 × 40         | 0.87                | 0.20  | LKX2W181MESA40 |
|           | 30 × 30         | 0.87                | 0.20  | LKX2W181MESB30 |
|           | 35 × 25         | 0.87                | 0.20  | LKX2W181MESC25 |
| 220       | 25 × 45         | 1.05                | 0.20  | LKX2W221MESA45 |
|           | 30 × 35         | 1.05                | 0.20  | LKX2W221MESB35 |
| 270       | 30 × 40         | 1.23                | 0.20  | LKX2W271MESB40 |
|           | 35 × 30         | 1.23                | 0.20  | LKX2W271MESC30 |
| 330       | 30 × 45         | 1.38                | 0.20  | LKX2W331MESB45 |
|           | 35 × 35         | 1.38                | 0.20  | LKX2W331MESC35 |
| 390       | 35 × 40         | 1.61                | 0.20  | LKX2W391MESC40 |
| 470       | 35 × 45         | 1.78                | 0.20  | LKX2W471MESC45 |
| 560       | 35 × 50         | 1.99                | 0.20  | LKX2W561MESC50 |

Rated ripple current (Arms) at 105°C 120Hz