

# ALUMINUM ELECTROLYTIC CAPACITORS

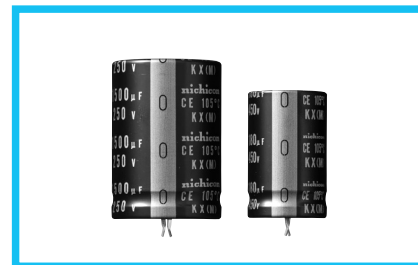
nichicon



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



For Audio Use

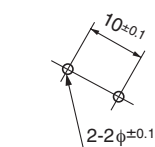
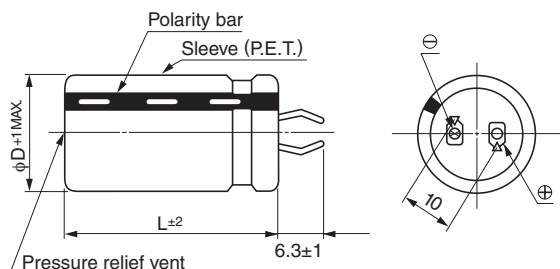


- In order to get high quality sound from 105°C standard series.
- Selected materials to achieve superior acoustic sound.
- Compliant to the RoHS directive (2011/65/EU).

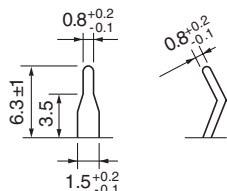
## Specifications

| 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               | After 5 minutes' application of rated voltage, leakage current is not more than $3\sqrt{CV}$ (μA), [C: Rated Capacitance(μF), V: Voltage (V)]                                                                                              |                 |            |                    |                                                   |
| Tangent of loss angle (tan δ) | Rated voltage(V)                                                                                                                                                                                                                           |                 | 200 to 400 | 450                | Measurement frequency : 120Hz at 20°C             |
|                               | tan δ (MAX.)                                                                                                                                                                                                                               |                 | 0.15       | 0.20               |                                                   |
| Stability at Low Temperature  | Rated voltage(V)                                                                                                                                                                                                                           |                 | 200 to 250 | 400 to 450         | Measurement frequency : 120Hz                     |
|                               | Impedance ratio                                                                                                                                                                                                                            | Z − 25°C/Z+20°C | 4          | 8                  |                                                   |
|                               | ZT/Z20(MAX.)                                                                                                                                                                                                                               | Z − 40°C/Z+20°C | 12         | —                  |                                                   |
| Endurance                     | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C.                                                                                       |                 |            | Capacitance change | Within ±20% of the initial capacitance value      |
|                               |                                                                                                                                                                                                                                            |                 |            | tan δ              | 200% or less than the initial specified value     |
|                               |                                                                                                                                                                                                                                            |                 |            | Leakage current    | Less than or equal to 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     |
|                               |                                                                                                                                                                                                                                            |                 |            | Leakage current    | Less than or equal to the initial specified value |
| Marking                       | Printed with gold color letter on black sleeve.                                                                                                                                                                                            |                 |            |                    |                                                   |

## Drawing



(PC board hole dimensions)



(Terminal dimensions)

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

|   |   |   |   |   |   |   |   |   |    |    |                              |    |      |
|---|---|---|---|---|---|---|---|---|----|----|------------------------------|----|------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12                           | 13 | 14   |
| L | K | X | 2 | G | 1 | 2 | 1 | M | E  | S  | A                            | 2  | 5    |
|   |   |   |   |   |   |   |   |   |    |    | Case length code             |    |      |
|   |   |   |   |   |   |   |   |   |    |    | Case dia.code                |    |      |
|   |   |   |   |   |   |   |   |   |    |    | Configuration                | φD | Code |
|   |   |   |   |   |   |   |   |   |    |    | Capacitance tolerance (±20%) | 20 | Y    |
|   |   |   |   |   |   |   |   |   |    |    | Rated capacitance (120μF)    | 22 | Z    |
|   |   |   |   |   |   |   |   |   |    |    | Rated voltage (400V)         | 25 | A    |
|   |   |   |   |   |   |   |   |   |    |    | Series name                  | 30 | B    |
|   |   |   |   |   |   |   |   |   |    |    |                              | 35 | C    |
|   |   |   |   |   |   |   |   |   |    |    | Type                         |    |      |

## 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.

CAT.8100D



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

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

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

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

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

CAT.8100D