

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

**AK** series

Snap-in Terminal Type, 105°C Permissible Abnormal Voltage

- Withstanding 2000 hours application of rated ripple current at 105°C.
- Extended voltage range at 200V, 400V and 420V.
- Improved safety features for abnormally excessive voltage.
- Ideally suited for the equipment used at voltage fluctuating area.
- Compliant the RoHS directive (2011/65/EU).

**AK**

Smaller

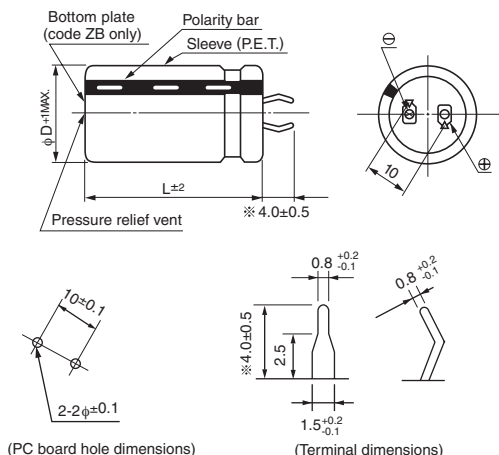
**AQ**



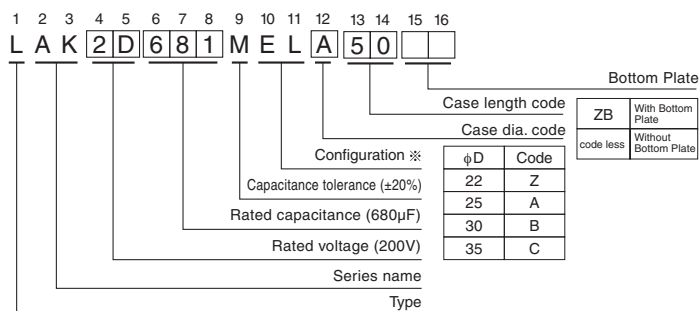
## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                 |                  |                    |                    |                                                   |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------|--------------------|---------------------------------------------------|
| Category Temperature Range    | - 25 to +105°C                                                                                                                                                                                                              |                  |                    |                    |                                                   |
| Rated Voltage Range           | 200 · 400 · 420V                                                                                                                                                                                                            |                  |                    |                    |                                                   |
| Rated Capacitance Range       | 33 to 1200μF                                                                                                                                                                                                                |                  |                    |                    |                                                   |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                         |                  |                    |                    |                                                   |
| Leakage Current               | I ≤ 3√CV (μA) (After 5 minutes' application of rated voltage) [C : Rated Capacitance (μF) V : Voltage (V)]                                                                                                                  |                  |                    |                    |                                                   |
| Tangent of loss angle (tan δ) | 0.20MAX. 120Hz at 20°C                                                                                                                                                                                                      |                  |                    |                    |                                                   |
| Stability at Low Temperature  | Rated voltage(V)                                                                                                                                                                                                            |                  | 200                | 400 · 420          | Measurement frequency : 120Hz                     |
|                               | Impedance ratio (MAX)                                                                                                                                                                                                       | Z - 25°C/Z+20°C  | 8                  | 8                  |                                                   |
| 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     |
|                               |                                                                                                                                                                                                                             |                  |                    | 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 requirements 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 |
| Safety Performance            | The pressure relief vent will operate in normal conditions, with no dangerous conditions such as flames, ignitions or dispersion of pieces of the capacitor and/or case.                                                    |                  |                    |                    |                                                   |
|                               | rating                                                                                                                                                                                                                      |                  |                    | test conditions    |                                                   |
|                               | Voltage (V)                                                                                                                                                                                                                 | Capacitance (μF) | Limited DC current | Test voltage       |                                                   |
|                               | 200                                                                                                                                                                                                                         | C < 330          | 4 A                | 300VDC and 375VDC  |                                                   |
|                               |                                                                                                                                                                                                                             | 330 ≤ C < 470    | 5 A                |                    |                                                   |
|                               |                                                                                                                                                                                                                             | 470 ≤ C          | 7 A                |                    |                                                   |
|                               | 400                                                                                                                                                                                                                         | C < 100          | 2 A                | 500VDC and 600VDC  |                                                   |
|                               |                                                                                                                                                                                                                             | 100 ≤ C < 220    | 4 A                |                    |                                                   |
|                               |                                                                                                                                                                                                                             | 220 ≤ C          | 7 A                |                    |                                                   |
|                               | 420                                                                                                                                                                                                                         | C < 100          | 2 A                | 520VDC and 630VDC  |                                                   |
| 100 ≤ C < 220                 |                                                                                                                                                                                                                             | 4 A              |                    |                    |                                                   |
| 220 ≤ C                       |                                                                                                                                                                                                                             | 7 A              |                    |                    |                                                   |
| Marking                       | Printed with white color letter on black sleeve                                                                                                                                                                             |                  |                    |                    |                                                   |

## Drawing



## Type numbering system (Example : 200V 680μF)



※ Please contact to us if other configurations are required.

Minimum order quantity : 50pcs.

- Dimension table in next page.

CAT.8100D

| 200V (2D)    |                    |                |                         |                |
|--------------|--------------------|----------------|-------------------------|----------------|
| Cap.<br>(μF) | Size<br>φD × L(mm) | Ripple<br>(mA) | Leakage Current<br>(mA) | Code           |
| 47           | 22 × 20            | 350            | 0.29                    | LAK2D470MELZ20 |
| 100          | 22 × 20            | 500            | 0.42                    | LAK2D101MELZ20 |
| 150          | 25 × 20            | 650            | 0.51                    | LAK2D151MELA20 |
| 180          | 22 × 25            | 700            | 0.56                    | LAK2D181MELZ25 |
|              | 30 × 20            | 700            | 0.56                    | LAK2D181MELB20 |
| 220          | 22 × 25            | 740            | 0.62                    | LAK2D221MELZ25 |
| 270          | 22 × 30            | 900            | 0.69                    | LAK2D271MELZ30 |
|              | 25 × 25            | 850            | 0.69                    | LAK2D271MELA25 |
|              | 35 × 20            | 1100           | 0.69                    | LAK2D271MELC20 |
| 330          | 22 × 30            | 1050           | 0.77                    | LAK2D331MELZ30 |
|              | 25 × 30            | 1050           | 0.77                    | LAK2D331MELA30 |
|              | 30 × 25            | 1050           | 0.77                    | LAK2D331MELB25 |
| 390          | 22 × 35            | 1200           | 0.83                    | LAK2D391MELZ35 |
|              | 25 × 30            | 1200           | 0.83                    | LAK2D391MELA30 |
|              | 30 × 25            | 1200           | 0.83                    | LAK2D391MELB25 |
| 470          | 22 × 40            | 1300           | 0.91                    | LAK2D471MELZ40 |
|              | 25 × 35            | 1300           | 0.91                    | LAK2D471MELA35 |
|              | 30 × 25            | 1350           | 0.91                    | LAK2D471MELB25 |
| 560          | 22 × 45            | 1500           | 1.00                    | LAK2D561MELZ45 |
|              | 25 × 40            | 1500           | 1.00                    | LAK2D561MELA40 |
|              | 30 × 35            | 1550           | 1.00                    | LAK2D561MELB35 |
|              | 35 × 25            | 1550           | 1.00                    | LAK2D561MELC25 |
| 680          | 25 × 50            | 1700           | 1.10                    | LAK2D681MELA50 |
|              | 30 × 40            | 1700           | 1.10                    | LAK2D681MELB40 |
|              | 35 × 30            | 1700           | 1.10                    | LAK2D681MELC30 |
| 820          | 30 × 45            | 1990           | 1.21                    | LAK2D821MELB45 |
|              | 35 × 35            | 1990           | 1.21                    | LAK2D821MELC35 |
| 1000         | 30 × 50            | 2100           | 1.34                    | LAK2D102MELB50 |
|              | 35 × 40            | 2100           | 1.34                    | LAK2D102MELC40 |
| 1200         | 35 × 50            | 2300           | 1.46                    | LAK2D122MELC50 |

| 420V (W6)    |                    |                |                         |                |
|--------------|--------------------|----------------|-------------------------|----------------|
| Cap.<br>(μF) | Size<br>φD × L(mm) | Ripple<br>(mA) | Leakage Current<br>(mA) | Code           |
| 33           | 22 × 25            | 250            | 0.35                    | LAKW6330MELZ25 |
| 47           | 22 × 25            | 350            | 0.42                    | LAKW6470MELZ25 |
| 56           | 22 × 25            | 380            | 0.46                    | LAKW6560MELZ25 |
| 68           | 22 × 30            | 450            | 0.50                    | LAKW6680MELZ30 |
|              | 25 × 25            | 450            | 0.50                    | LAKW6680MELA25 |
| 82           | 22 × 35            | 640            | 0.55                    | LAKW6820MELZ35 |
|              | 25 × 30            | 640            | 0.55                    | LAKW6820MELA30 |
| 100          | 22 × 40            | 690            | 0.61                    | LAKW6101MELZ40 |
|              | 25 × 30            | 690            | 0.61                    | LAKW6101MELA30 |
|              | 30 × 25            | 690            | 0.61                    | LAKW6101MELB25 |
| 120          | 22 × 45            | 750            | 0.67                    | LAKW6121MELZ45 |
|              | 25 × 35            | 750            | 0.67                    | LAKW6121MELA35 |
|              | 30 × 30            | 750            | 0.67                    | LAKW6121MELB30 |
|              | 35 × 25            | 750            | 0.67                    | LAKW6121MELC25 |
| 150          | 25 × 40            | 820            | 0.75                    | LAKW6151MELA40 |
|              | 30 × 30            | 820            | 0.75                    | LAKW6151MELB30 |
|              | 35 × 25            | 820            | 0.75                    | LAKW6151MELC25 |
| 180          | 25 × 45            | 900            | 0.82                    | LAKW6181MELA45 |
|              | 30 × 35            | 900            | 0.82                    | LAKW6181MELB35 |
|              | 35 × 30            | 900            | 0.82                    | LAKW6181MELC30 |
| 220          | 30 × 40            | 1000           | 0.91                    | LAKW6221MELB40 |
|              | 35 × 35            | 1000           | 0.91                    | LAKW6221MELC35 |
| 270          | 30 × 45            | 1100           | 1.01                    | LAKW6271MELB45 |
|              | 35 × 40            | 1100           | 1.01                    | LAKW6271MELC40 |
| 330          | 35 × 45            | 1200           | 1.11                    | LAKW6331MELC45 |

Rated ripple current (mA<sub>rms</sub>) at 105°C 120Hz

| 400V (2G)    |                    |                |                         |                |
|--------------|--------------------|----------------|-------------------------|----------------|
| Cap.<br>(μF) | Size<br>φD × L(mm) | Ripple<br>(mA) | Leakage Current<br>(mA) | Code           |
| 33           | 22 × 20            | 220            | 0.34                    | LAK2G330MELZ20 |
| 39           | 22 × 20            | 300            | 0.37                    | LAK2G390MELZ20 |
| 47           | 22 × 25            | 350            | 0.41                    | LAK2G470MELZ25 |
|              | 25 × 20            | 350            | 0.41                    | LAK2G470MELA20 |
|              | 30 × 20            | 400            | 0.41                    | LAK2G470MELB20 |
| 56           | 22 × 25            | 380            | 0.44                    | LAK2G560MELZ25 |
|              | 25 × 20            | 380            | 0.44                    | LAK2G560MELA20 |
| 68           | 22 × 25            | 400            | 0.49                    | LAK2G680MELZ25 |
|              | 25 × 25            | 450            | 0.49                    | LAK2G680MELA25 |
|              | 30 × 20            | 500            | 0.49                    | LAK2G680MELB20 |
| 82           | 22 × 30            | 500            | 0.54                    | LAK2G820MELZ30 |
|              | 25 × 25            | 500            | 0.54                    | LAK2G820MELA25 |
|              | 30 × 20            | 500            | 0.54                    | LAK2G820MELB20 |
| 100          | 22 × 35            | 550            | 0.60                    | LAK2G101MELZ35 |
|              | 25 × 30            | 530            | 0.60                    | LAK2G101MELA30 |
|              | 30 × 25            | 530            | 0.60                    | LAK2G101MELB25 |
|              | 35 × 20            | 550            | 0.60                    | LAK2G101MELC20 |
| 120          | 22 × 40            | 600            | 0.65                    | LAK2G121MELZ40 |
|              | 25 × 30            | 600            | 0.65                    | LAK2G121MELA30 |
|              | 30 × 25            | 600            | 0.65                    | LAK2G121MELB25 |
| 150          | 22 × 45            | 700            | 0.73                    | LAK2G151MELZ45 |
|              | 25 × 35            | 700            | 0.73                    | LAK2G151MELA35 |
|              | 30 × 30            | 700            | 0.73                    | LAK2G151MELB30 |
|              | 35 × 25            | 700            | 0.73                    | LAK2G151MELC25 |
| 180          | 22 × 50            | 800            | 0.80                    | LAK2G181MELZ50 |
|              | 25 × 40            | 800            | 0.80                    | LAK2G181MELA40 |
|              | 30 × 30            | 800            | 0.80                    | LAK2G181MELB30 |
|              | 35 × 25            | 800            | 0.80                    | LAK2G181MELC25 |
| 220          | 25 × 45            | 900            | 0.88                    | LAK2G221MELA45 |
|              | 30 × 35            | 900            | 0.88                    | LAK2G221MELB35 |
|              | 35 × 30            | 900            | 0.88                    | LAK2G221MELC30 |
| 270          | 30 × 40            | 980            | 0.98                    | LAK2G271MELB40 |
|              | 35 × 35            | 960            | 0.98                    | LAK2G271MELC35 |
| 330          | 30 × 50            | 1210           | 1.08                    | LAK2G331MELB50 |
|              | 35 × 40            | 1210           | 1.08                    | LAK2G331MELC40 |
| 390          | 35 × 45            | 1320           | 1.18                    | LAK2G391MELC45 |
| 470          | 35 × 50            | 1450           | 1.30                    | LAK2G471MELC50 |

## ● Frequency coefficient of rated ripple current

| Frequency (Hz) |          | 50   | 60   | 120  | 1k   | 10k or more |
|----------------|----------|------|------|------|------|-------------|
| Coefficient    | 200V     | 0.85 | 0.88 | 1.00 | 1.15 | 1.20        |
|                | 400・420V | 0.88 | 0.90 | 1.00 | 1.10 | 1.15        |



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

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**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331