

# ALUMINUM ELECTROLYTIC CAPACITORS



**DQ** series 105°C Horizontal Mounting Type



**DQ**



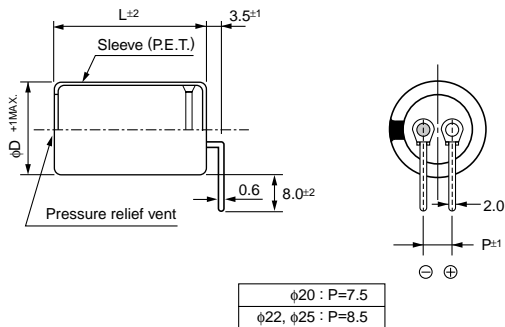
- Horizontal mounting version for  $\phi 20$ ,  $\phi 22$  and  $\phi 25$ .
- Suited for use in flat electronic devices where height space is limited.
- Adapted to the RoHS directive (2002/95/EC).

Products which are scheduled to be discontinued. Not recommended for new designs

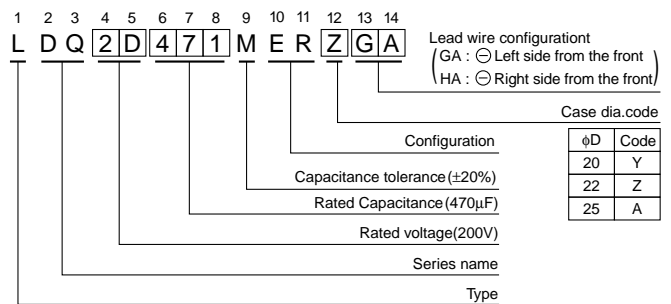
## Specifications

| Item                                  | Performance Characteristics   |  |
|---------------------------------------|---|--|
| Category Temperature Range            | - 40 to +105°C (200V), - 25 to +105°C (400V)  |  |
| Rated Voltage Range                   | 200 · 400V  |  |
| Rated Capacitance Range               | 68 to 1200 $\mu$ F  |  |
| Capacitance Tolerance                 | $\pm 20\%$ at 120Hz, 20°C   |  |
| Leakage Current                       | $I \leq 3\sqrt{CV}$ ( $\mu$ A) (After 5 minutes' application of rated voltage) [C : Rated Capacitance ( $\mu$ F) V : Voltage (V)]   |  |
| Tangent of loss angle (tan $\delta$ ) | Measurement frequency : 120Hz, Temperature : 20°C   |  |
|                                       | Rated voltage (V)   | 200      400   |
|                                       | tan $\delta$ (MAX.)   | 0.15      0.15   |
| Stability at Low Temperature          | Measurement frequency : 120Hz   |  |
|                                       | Rated voltage (V)   | 200      400   |
|                                       | Impedance ratio   | Z - 25°C/Z+20°C      3      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 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 $\pm 20\%$ of initial value             |
|                                       |   | tan $\delta$ 200% or less of initial specified value                   |
| Shelf Life                            | After storing the capacitors under no load at 105°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the requirements listed at right.                       | Leakage current      Less than or equal to the initial specified value |
|                                       |   | Capacitance change      Within $\pm 15\%$ of initial value             |
|                                       |   | tan $\delta$ 150% or less of initial specified value                   |
|                                       |   | Leakage current      Less than or equal to the initial specified value |
| Marking                               | Printed with white color letter on black sleeve.  |  |

## Drawing



## Type numbering system (Example : 200V 470 $\mu$ F)



## Dimensions

| Cap. ( $\mu$ F) | V(Code) | Code  | 200V (2D) |       |      |       | 400V (2G) |       |      |                                     |                 |
|-----------------|---------|-------|-----------|-------|------|-------|-----------|-------|------|-------------------------------------|-----------------|
|                 |         |       | $\phi D$  | 20    | 22   | 25    | 20        | 22    | 25   |                                     |                 |
| 68              | 680     |       |           |       |      | 20×30 | 0.56      |       |      |                                     |                 |
| 82              | 820     |       |           |       |      | 20×30 | 0.64      |       |      |                                     |                 |
| 100             | 101     |       |           |       |      | 20×35 | 0.70      |       |      |                                     |                 |
| 120             | 121     |       |           |       |      | 20×40 | 0.75      | 22×35 | 0.75 |                                     |                 |
| 150             | 151     |       |           |       |      | 20×45 | 0.83      | 22×40 | 0.88 |                                     |                 |
| 180             | 181     |       |           |       |      | 20×50 | 0.95      | 22×45 | 0.95 | 25×35                               | 0.95            |
| 220             | 221     |       |           |       |      |       |           | 22×50 | 1.10 | 25×40                               | 1.10            |
| 270             | 271     | 20×30 | 1.10      |       |      |       |           | 22×60 | 1.22 | 25×45                               | 1.22            |
| 330             | 331     | 20×35 | 1.20      |       |      |       |           |       |      | 25×50                               | 1.44            |
| 390             | 391     | 20×40 | 1.31      |       |      |       |           |       |      |                                     |                 |
| 470             | 471     | 20×45 | 1.45      | 22×35 | 1.45 |       |           |       |      |                                     |                 |
| 560             | 561     | 20×50 | 1.58      | 22×40 | 1.60 | 25×35 | 1.60      |       |      |                                     |                 |
| 680             | 681     |       |           | 22×45 | 1.78 | 25×40 | 1.78      |       |      |                                     |                 |
| 820             | 821     |       |           | 22×60 | 2.04 | 25×45 | 2.04      |       |      |                                     |                 |
| 1000            | 102     |       |           |       |      | 25×50 | 2.30      |       |      |                                     |                 |
| 1200            | 122     |       |           |       |      | 25×60 | 2.65      |       |      |                                     |                 |
|                 |         |       |           |       |      |       |           |       |      | Case size<br>$\phi D \times L$ (mm) | Rated<br>ripple |

\* Other rating also available on request.

Rated Ripple (Arms) at 105°C, 120Hz

## Frequency coefficient of rated ripple current

| Frequency (Hz) | 50   | 60   | 120  | 300  | 1k   | 10k  | 50k or more |
|----------------|------|------|------|------|------|------|-------------|
| 200V           | 0.81 | 0.85 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50        |
| 400V           | 0.77 | 0.82 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43        |

Minimum order quantity : 50pcs.

CAT.8100X