

# ALUMINUM ELECTROLYTIC CAPACITORS

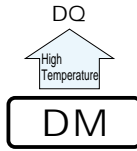
**DM** series 85°C Horizontal Mounting Type



Smaller

- For  $\phi 20$ ,  $\phi 22$  and  $\phi 25$ , but suited for horizontal mounting to assure flat and low-profile design.
- Adapted to the RoHS directive (2002/95/EC).

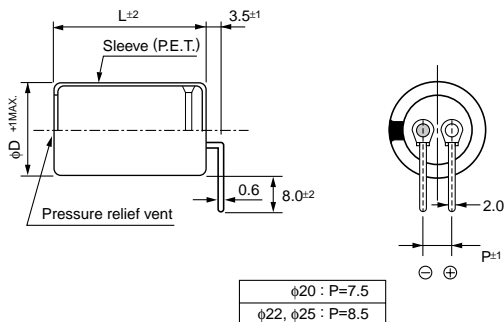
Products which are scheduled to be discontinued. Not recommended for new designs



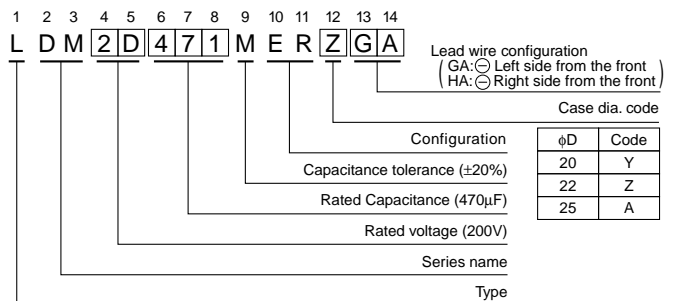
## Specifications

Item	Performance Characteristics							
Category Temperature Range	- 40 to + 85°C (200V), - 25 to + 85°C (400V)							
Rated Voltage Range	200 - 400V							
Rated Capacitance Range	82 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 85°C, the peak voltage shall not exceed the rated voltage.	<table border="1"> <tr> <td>Capacitance change</td> <td>Within <math>\pm 20\%</math> of initial value</td> </tr> <tr> <td>tan <math>\delta</math></td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	Capacitance change	Within $\pm 20\%$ of initial value	tan $\delta$	200% or less of initial specified value	Leakage current	Less than or equal to the initial specified value
	Capacitance change	Within $\pm 20\%$ of initial value						
tan $\delta$	200% or less of initial specified value							
Leakage current	Less than or equal to the initial specified value							
Shelf Life	After storing the capacitors under no load at 85°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 characteristic requirements at right.	<table border="1"> <tr> <td>Capacitance change</td> <td>Within <math>\pm 15\%</math> of initial value</td> </tr> <tr> <td>tan <math>\delta</math></td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	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
	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	$\phi D$	200V (2D)			400V (2G)					
				20	22	25	20	22	25			
82	820						20 × 30	0.78				
100	101						20 × 30	0.90				
120	121						20 × 35	1.02				
150	151						20 × 40	1.17	22 × 35	1.20		
180	181						20 × 50	1.30	22 × 40	1.38	25 × 35	1.25
220	221								22 × 45	1.55	25 × 40	1.56
270	271	20 × 30	1.32						22 × 60	1.70	25 × 45	1.70
330	331	20 × 30	1.49								25 × 50	1.90
390	391	20 × 35	1.66								25 × 60	2.15
470	471	20 × 40	1.93	22 × 35	1.88							
560	561	20 × 45	2.00	22 × 40	1.96							
680	681	20 × 50	2.30	22 × 45	2.43	25 × 35	2.68					
820	821			22 × 50	2.80	25 × 40	2.80					
1000	102			22 × 60	3.00	25 × 45	3.12					
1200	122					25 × 60	3.44				Case size $\phi D \times L$ (mm)	Rated ripple

\* Other ratings also available on request.

Rated Ripple (Arms) at 85°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.