

# ALUMINUM ELECTROLYTIC CAPACITORS

# UAQ

Wide Temperature Range, Permissible Abnormal Voltage

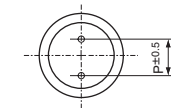
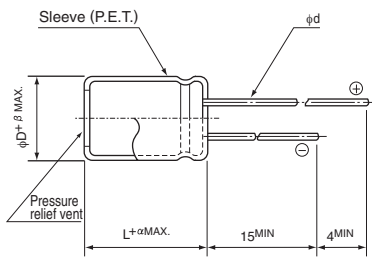
- Improved safety feature for abnormally excessive voltage.
- High ripple current product.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



## Specifications

Item	Performance Characteristics									
Category Temperature Range	-40 to +105°C									
Rated Voltage Range	200 · 400V									
Rated Capacitance Range	10 to 220µF									
Capacitance Tolerance	±20% at 120Hz, 20°C									
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is 0.04CV+100 (µA) or less.									
Tangent of loss angle (tan δ)	Rated voltage (V)	200	400	Measurement frequency:120Hz at 20°C						
	tan δ (MAX.)	0.15	0.15							
Stability at Low Temperature	Rated voltage (V)		200	400	Measurement frequency : 120Hz					
	Impedance ratio (MAX.)		Z-25°C / Z+20°C	3		8				
			Z-40°C / Z+20°C	6	10					
	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.			<table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>200% or less than the 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 ±20% of the initial capacitance value	tan δ	200% or less than the initial specified value	Leakage current
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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 above.									
Safety Performance	The pressure relief vent will operate in normal conditions, with no dangerous conditons such as flames, ignitions or dispersion of pieces of the capacitor and / or case.									
	voltage (V)	Test conditions								
		Limited DC current	Test Voltage							
200	4A	300VDC and 375VDC								
400	2A	500VDC and 600VDC								
Marking	Printed with white color letter on dark brown sleeve.									

## Radial Lead Type

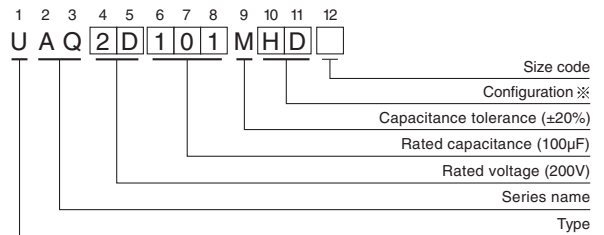


	(mm)				
φD	10	12.5	16	18	22
P	5.0	5.0	7.5	7.5	10
φd	0.6	0.6*	0.8	0.8	1.0
β	0.5	0.5	0.5	0.5	1.0

\* In case L>25 for φ12.5 (D) case sizes, lead diameter φ0.8 (d) will be applied.

α	(φD ≤ 18) 2.0
	(φD > 18) 3.0

## Type numbering system (Example : 200V 100µF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD
22	RD

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

## Frequency coefficient of rated ripple current

Frequency	50, 60Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.80	1.00	1.25	1.40	1.60

● Dimension table in next page.

## UAQ

### ■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 1 minute)	Rated Ripple (mArms) (105°C/120Hz)	Part Number
200 (2D)	22	10×20	0.15	276	120	UAQ2D220MPD
	33	10×25	0.15	364	160	UAQ2D330MPD
	33	12.5×20	0.15	364	160	UAQ2D330MHD6
	47	10×31.5	0.15	476	195	UAQ2D470MPD
	47	12.5×20	0.15	476	195	UAQ2D470MHD6
	56	12.5×25	0.15	548	210	UAQ2D560MHD
	68	12.5×25	0.15	644	250	UAQ2D680MHD
	82	12.5×31.5	0.15	756	285	UAQ2D820MHD
	82	16×20	0.15	756	285	UAQ2D820MHD6
	100	12.5×35.5	0.15	900	335	UAQ2D101MHD
	100	16×25	0.15	900	335	UAQ2D101MHD6
	100	18×20	0.15	900	335	UAQ2D101MHD3
	150	16×31.5	0.15	1300	435	UAQ2D151MHD
	150	18×25	0.15	1300	435	UAQ2D151MHD6
	150	22×20	0.15	1300	435	UAQ2D151MRD3
	180	16×35.5	0.15	1540	495	UAQ2D181MHD
	180	18×31.5	0.15	1540	495	UAQ2D181MHD6
	180	22×25	0.15	1540	495	UAQ2D181MRD3
	220	18×35.5	0.15	1860	575	UAQ2D221MHD
400 (2G)	10	12.5×20	0.15	260	100	UAQ2G100MHD
	22	12.5×31.5	0.15	452	145	UAQ2G220MHD
	22	16×20	0.15	452	145	UAQ2G220MHD6
	33	12.5×40	0.15	628	195	UAQ2G330MHD
	33	16×25	0.15	628	195	UAQ2G330MHD6
	33	18×20	0.15	628	195	UAQ2G330MHD3
	47	16×35.5	0.15	852	280	UAQ2G470MHD
	47	18×25	0.15	852	280	UAQ2G470MHD6
	47	22×20	0.15	852	280	UAQ2G470MRD3
	56	16×35.5	0.15	996	320	UAQ2G560MHD
	56	18×31.5	0.15	996	320	UAQ2G560MHD6
	56	22×25	0.15	996	320	UAQ2G560MRD3
	68	16×40	0.15	1188	350	UAQ2G680MHD
	68	18×35.5	0.15	1188	350	UAQ2G680MHD6
	82	18×40	0.15	1412	420	UAQ2G820MHD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

• For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.