ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

AQ

Wide Temperature Range, Permissible Abnormal Voltage
(Radial Lead Type) series

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

AQ
Smaller
AS

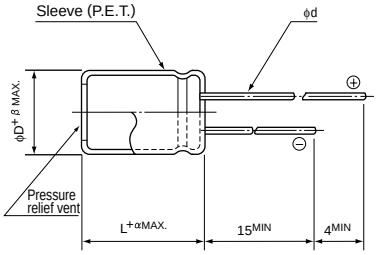
■Specifications

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, leakage current is 0.04CV+100 (μA) or less.
Tangent of loss angle (tan δ)	Rated voltage (V): 200 / 400; tan δ (MAX.): 0.15 / 0.15. Measurement frequency:120Hz at 20°C
Stability at Low Temperature	Rated voltage (V): 200 / 400. Impedance ratio ZT / Z20 (MAX.): Z−25°C / Z+20°C: 3 / 8; Z−40°C / Z+20°C: 6 / 10. Measurement frequency : 120Hz
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 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.

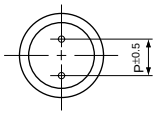
Safety Performance	voltage (V)	Test conditions: Limited DC current	Test conditions: Test Voltage
	200	4A	300VDC and 375VDC
	400	2A	500VDC and 600VDC

Marking	Printed with white color letter on dark brown sleeve.

■Radial Lead Type



• Please refer to page 20 about the end seal configuration.



(mm)

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

1	2	3	4	5	6	7	8	9	10	11	12
U	A	Q	2	D	1	0	1	M	H	D	

Size code
Configuration※
Capacitance tolerance (±20%)
Rated capacitance (100μF)
Rated voltage (200V)
Series name
Type

※Configuration

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

■Dimensions

Cap.(μF) \ V(Code) / Code / ϕD	200 (2D) ϕ10	ϕ12.5	ϕ16	ϕ18	ϕ22	400 (2G) ϕ12.5	ϕ16	ϕ18	ϕ22
10 / 100						12.5×20 / 100			
22 / 220	10×20 / 120					12.5×31.5 / 145	○16×20 / 145		
33 / 330	10×25 / 160	○12.5×20 / 160				12.5×40 / 195	○16×25 / 195	※18×20 / 195	
47 / 470	10×31.5 / 195	○12.5×20 / 195					16×35.5 / 280	○18×25 / 280	※22×20 / 280
56 / 560		12.5×25 / 210					16×35.5 / 320	○18×31.5 / 320	※22×25 / 320
68 / 680		12.5×25 / 250					16×40 / 350	○18×35.5 / 350	
82 / 820		12.5×31.5 / 285	○16×20 / 285					18×40 / 420	
100 / 101		12.5×35.5 / 335	○16×25 / 335	※18×20 / 335					
150 / 151			16×31.5 / 435	○18×25 / 435	※22×20 / 435				
180 / 181			16×35.5 / 495	○18×31.5 / 495	※22×25 / 495				
220 / 221				18×35.5 / 575					Case size ϕDxL (mm) / Rated ripple

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

○ : In case of low profile type, 6 will be put at 12th digit of type numbering system.
※ : For further low profile product, 3 will be put at 12th digit.

●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

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.