

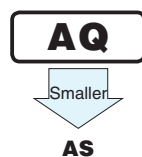
ALUMINUM ELECTROLYTIC CAPACITORS

nichicon



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

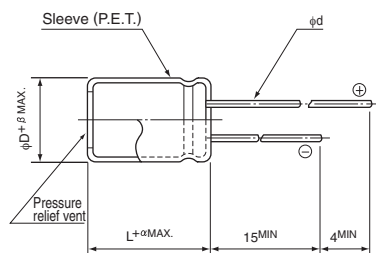
- Improved safety feature for abnormally excessive voltage.
- High ripple current product.
- Compliant to the RoHS directive (2011/65/EU).



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)	<table><tr><td>Rated voltage (V)</td><td>200</td><td>400</td><td rowspan="2">Measurement frequency:120Hz at 20°C</td></tr><tr><td>tan δ (MAX.)</td><td>0.15</td><td>0.15</td></tr></table>				Rated voltage (V)	200	400	Measurement frequency:120Hz at 20°C	tan δ (MAX.)	0.15	0.15					
Rated voltage (V)	200	400	Measurement frequency:120Hz at 20°C													
tan δ (MAX.)	0.15	0.15														
Stability at Low Temperature	<table><tr><td colspan="2">Rated voltage (V)</td><td>200</td><td>400</td><td rowspan="3">Measurement frequency : 120Hz</td></tr><tr><td rowspan="2">Impedance ratio ZT / Z20 (MAX.)</td><td>Z-25°C / Z+20°C</td><td>3</td><td>8</td></tr><tr><td>Z-40°C / Z+20°C</td><td>6</td><td>10</td></tr></table>				Rated voltage (V)		200	400	Measurement frequency : 120Hz	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	3	8	Z-40°C / Z+20°C	6	10
Rated voltage (V)		200	400	Measurement frequency : 120Hz												
Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	3	8													
	Z-40°C / Z+20°C	6	10													
Endurance	<table><tr><td rowspan="3">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.</td><td>Capacitance change</td><td colspan="2">Within ±20% of the initial capacitance value</td></tr><tr><td>tan δ</td><td colspan="2">200% or less than the initial specified value</td></tr><tr><td>Leakage current</td><td colspan="2">Less than or equal to the initial specified value</td></tr></table>				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			
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.															
	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



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

	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	
Series name			Rated voltage (200V)			Rated capacitance (100µF)			Configuration ※		
Size code			Type								

※ Configuration

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

Dimensions

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

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

- : 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.

Please refer to page 20, 21, 22 about the formed or taped product spec.

Please refer to page 4 for the minimum order quantity.

CAT.8100D