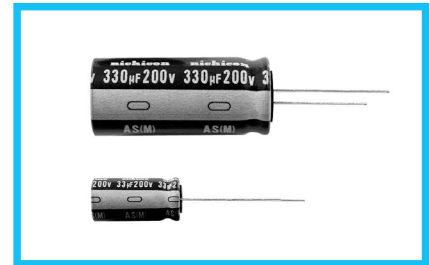
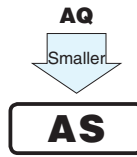


# ALUMINUM ELECTROLYTIC CAPACITORS

# AS

Wide Temperature Range, Miniature Type Permissible  
Abnormal Voltage  
series

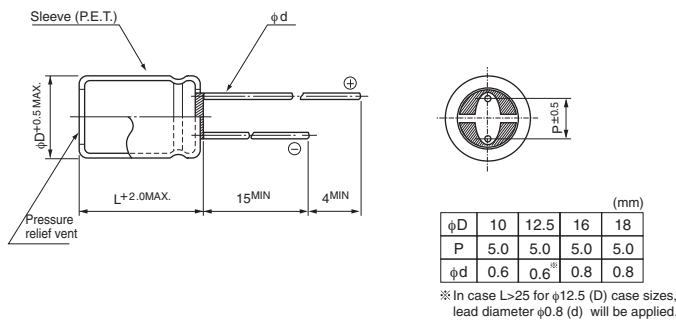


- Improved safety feature for abnormally excessive voltage.
- High ripple current product.
- Compliant to the RoHS directive (2011/65/EU).

## Specifications

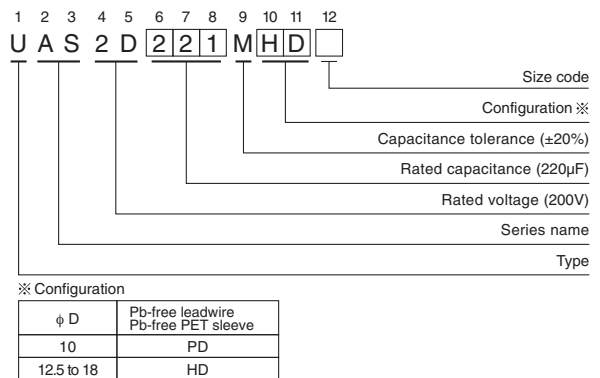
Item	Performance Characteristics												
Category Temperature Range	-40 to +105°C												
Rated Voltage Range	200V, 400V												
Rated Capacitance Range	4.7 to 330µF												
Capacitance Tolerance	±20% at 120Hz, 20°C												
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is 0.04CV+100 (µA) or less.												
Tangent of loss angle (tan δ)	<table border="1"> <tr> <th>Rated voltage (V)</th> <th>200</th> <th>400</th> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.15</td> <td>0.15</td> </tr> </table>	Rated voltage (V)	200	400	tan δ (MAX.)	0.15	0.15	Measurement frequency: 120Hz at 20°C					
Rated voltage (V)	200	400											
tan δ (MAX.)	0.15	0.15											
Stability at Low Temperature	<table border="1"> <tr> <th colspan="2">Rated voltage (V)</th> <th>200</th> <th>400</th> </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	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	3	8	Z-40°C / Z+20°C	6	10	Measurement frequency : 120Hz
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										
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	Less than or equal to the initial specified value					
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 leaving capacitors under no load at 105°C for 1000 hours 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 conditions such as flames, ignitions or dispersion of pieces of the capacitor and / or case.												
Marking	Printed with white color letter on dark brown sleeve.	<table border="1"> <tr> <th rowspan="3">voltage (V)</th> <th colspan="2">Test conditions</th> </tr> <tr> <th>Limited DC current</th> <th>Test Voltage</th> </tr> <tr> <td>200</td> <td>300VDC and 375VDC</td> </tr> <tr> <td>400</td> <td>2A (4A : 100µF or more)</td> <td>500VDC and 600VDC</td> </tr> </table>	voltage (V)	Test conditions		Limited DC current	Test Voltage	200	300VDC and 375VDC	400	2A (4A : 100µF or more)	500VDC and 600VDC	
		voltage (V)		Test conditions									
				Limited DC current	Test Voltage								
200	300VDC and 375VDC												
400	2A (4A : 100µF or more)	500VDC and 600VDC											

## Radial Lead Type



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

## Type numbering system (Example : 200V 220µF)



## Dimensions

Cap. (µF)	Code	200 (2D)				400 (2G)			
		φ10	φ12.5	φ16	φ18	φ10	φ12.5	φ16	φ18
4.7	4R7					10 × 9	60		
22	220						12.5 × 20	165	
27	270						12.5 × 25	200	
33	330	10 × 20	160					16 × 20	225
39	390							16 × 25	255
47	470	10 × 25	195	▲12.5 × 20	195			16 × 25	290
56	560			12.5 × 20	210			▲18 × 20	280
68	680			12.5 × 25	320			▲18 × 25	320
82	820			12.5 × 25	360			▲18 × 25	360
100	101			12.5 × 31.5	430	▲16 × 20	430	▲18 × 31.5	430
120	121							18 × 35.5	490
150	151					16 × 25	460	▲18 × 40	540
180	181			16 × 31.5	600	▲18 × 25	600		
220	221					18 × 31.5	710		
270	271					18 × 35.5	890		
330	331					18 × 40	910		

## 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

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. 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

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