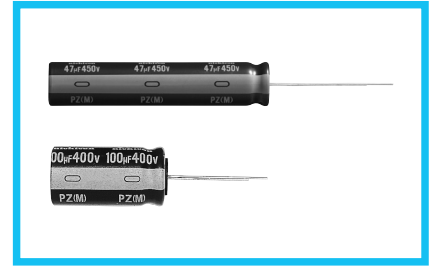
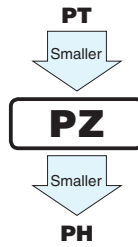


# ALUMINUM ELECTROLYTIC CAPACITORS

**PZ** High Voltage, Miniature-sized series



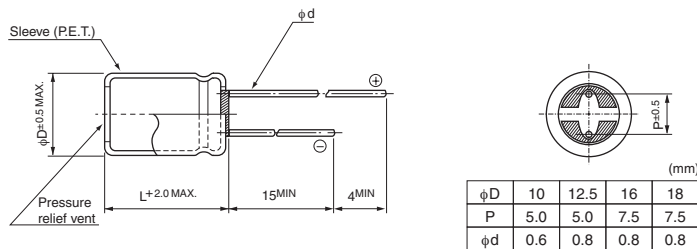
- High ripple current.
- Load life of 2000 hours at 105°C.
- Suited for ballast applications.
- Compliant to the RoHS directive (2011/65/EU).



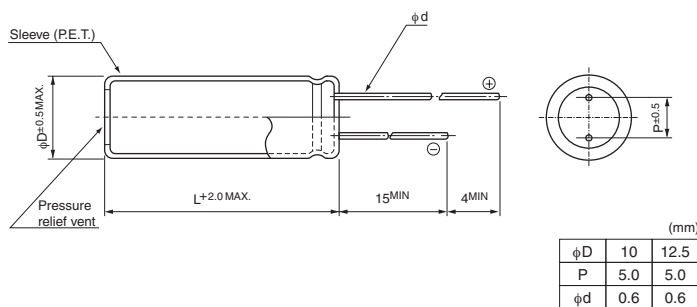
## Specifications

Item	Performance Characteristics												
Category Temperature Range	-25 to +105°C												
Rated Voltage Range	200 to 450V												
Rated Capacitance Range	18 to 470μF												
Capacitance Tolerance	±20% at 120Hz, 20°C												
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.04CV+100 (μA).												
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C												
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>200</td> <td>250</td> <td>400</td> <td>420</td> <td>450</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.12</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> </tr> </table>	Rated voltage (V)	200	250	400	420	450	tan δ (MAX.)	0.12	0.15	0.15	0.20	0.20
Rated voltage (V)	200	250	400	420	450								
tan δ (MAX.)	0.12	0.15	0.15	0.20	0.20								
Stability at Low Temperature	Measurement frequency : 120Hz												
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>200</td> <td>250</td> <td>400</td> <td>420</td> <td>450</td> </tr> <tr> <td>Impedance ratio ZT / Z20 (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>3</td> <td>3</td> <td>8</td> <td>8</td> <td>8</td> </tr> </table>	Rated voltage (V)	200	250	400	420	450	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	3	3	8	8
Rated voltage (V)	200	250	400	420	450								
Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	3	3	8	8	8							
Endurance	<p>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.</p> <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						
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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.												
Marking	Printed with white color letter on dark brown sleeve.												

## Radial Lead Type

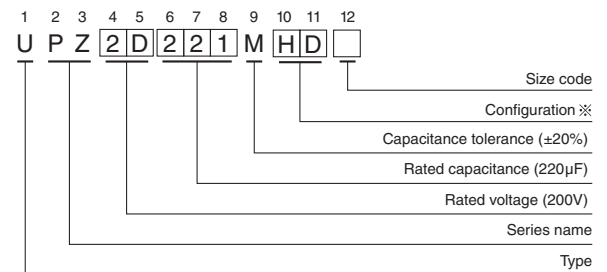


## Pencil - shaped Type



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

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



※ Configuration

Size code	Blank, 6	9
φ D	Pb-free leadwire Pb-free PET sleeve	
10	PD	ND
12.5 to 18	HD	NY

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

- Dimension table in next page.

## ■ Dimensions

Cap.( $\mu$ F) \ V		200		400		420		450	
		Code	2D	2G	W6	2W			
18	180							10 × 31.5	180
22	220					10 × 31.5	200		
27	270			10 × 31.5	240				
33	330							12.5 × 31.5	280
39	390					12.5 × 31.5	310	12.5 × 35.5	320
47	470			12.5 × 31.5	370	12.5 × 35.5	360	12.5 × 40	380
56	560			12.5 × 35.5	420	12.5 × 40	430	16 × 31.5	440
68	680			12.5 × 40	480	16 × 31.5	510	16 × 35.5	490
82	820	10 × 31.5	400			16 × 35.5	570	16 × 40	550
								▲ 18 × 31.5	550
100	101			16 × 31.5	580	16 × 40	610	18 × 35.5	650
								▲ 18 × 31.5	610
120	121			16 × 35.5	670	18 × 35.5	660	18 × 40	740
				▲ 18 × 31.5	670				
150	151	12.5 × 31.5	620	16 × 40	770	18 × 40	710		
				▲ 18 × 35.5	770				
180	181	12.5 × 35.5	700	18 × 40	880				
220	221	12.5 × 40	800						
270	271	16 × 31.5	870						
330	331	16 × 35.5	1010						
		▲ 18 × 31.5	1010						
390	391	16 × 40	1130						
		▲ 18 × 35.5	1120						
470	471	18 × 40	1270					Case size $\phi$ D × L (mm)	Rated ripple

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

▲ : In this case, [6] will be put at 12th digit of type numbering system.

## Pencil-shaped Type

Cap.( $\mu$ F) \ V		200		250		400		450	
		Code	2D	2E	2G	2W			
33	330							● 10 × 40	360
47	470					● 10 × 40	435	● 10 × 50	450
56	560					● 10 × 50	520		
82	820			● 10 × 40	610			● 12.5 × 50	730
100	101					● 12.5 × 50	770		
120	121	● 10 × 40	680	● 10 × 50	740				
150	151	● 10 × 50	830						
220	221			● 12.5 × 50	1140				
270	271	● 12.5 × 50	1265					Case size $\phi$ D × L (mm)	Rated ripple

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

● : In this case, [9] will be put at 12th digit of type numbering system.

## ● Frequency coefficient of rated ripple current

V	60Hz	120Hz	500Hz	1kHz	10kHz or more
200	0.80	1.00	1.20	1.30	1.40
400 to 450	0.80	1.00	1.25	1.40	1.50