

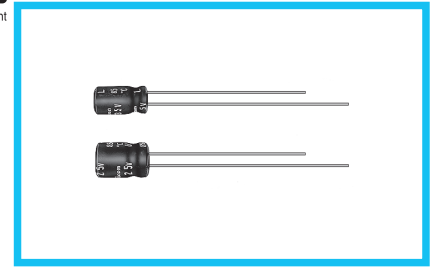
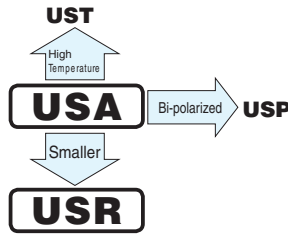
# ALUMINUM ELECTROLYTIC CAPACITORS

**USA** 7mmL, For General Purposes

- Standard miniature series with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

**USR** 7mmL, High CV

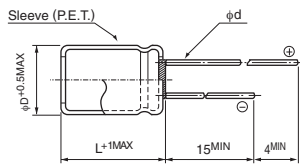
- Higher CV series with 7mm height.



## Specifications

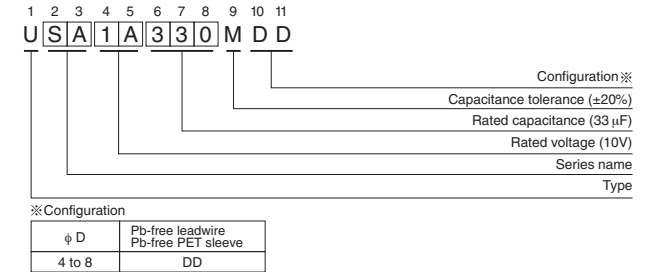
Item	USA	USR						
Category Temperature Range	-40 to +85°C	-40 to +85°C						
Rated Voltage Range	6.3 to 50V	4 to 50V						
Rated Capacitance Range	0.1 to 220µF	0.1 to 470µF						
Capacitance Tolerance	±20% at 120Hz, 20°C							
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (µA), whichever is greater.							
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C							
	Rated voltage (V)	4	6.3	10	16	25	35	50
Stability at Low Temperature	Measurement frequency : 120Hz							
	Rated voltage (V)	4	6.3	10	16	25	35	50
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.		Capacitance change		Within ±20% of the initial capacitance value			
			tan δ		200% or less than the initial specified value			
Shelf Life	After storing the capacitors under no load at 85°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.		Leakage current		Less than or equal to the initial specified value			
Marking	Printed with white color letter on black sleeve.							

## Radial Lead Type



	(mm)			
φD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
φd	0.45	0.45	0.45	0.5

## Type numbering system (Example : USA : 10V 33µF)



## Dimensions

Cap.(µF)	V(Code) Type-Series Code	4 (0G)		6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)	
		USR	USA	USR	USA	USR	USA	USR	USA	USR	USA	USR	USA	USR	
0.1	0R1													4 × 7 1.0	4 × 7 1.0
0.22	R22													4 × 7 2.3	4 × 7 2.3
0.33	R33													4 × 7 3.5	4 × 7 3.5
0.47	R47													4 × 7 5.0	4 × 7 5.0
1	010													4 × 7 10	4 × 7 10
2.2	2R2													4 × 7 19	4 × 7 19
3.3	3R3													4 × 7 24	4 × 7 24
4.7	4R7											4 × 7 24	4 × 7 24	5 × 7 29	4 × 7 28
10	100							4 × 7 28	4 × 7 28	5 × 7 33	4 × 7 28	5 × 7 36	4 × 7 31	6.3 × 7 44	5 × 7 38
22	220		4 × 7 34	4 × 7 34	5 × 7 38	4 × 7 35	5 × 7 44	4 × 7 39	6.3 × 7 51	5 × 7 48	6.3 × 7 57	5 × 7 52	8 × 7 65	6.3 × 7 65	6.3 × 7 58
33	330	4 × 7 33	5 × 7 42	4 × 7 40	5 × 7 47	4 × 7 43	6.3 × 7 57	5 × 7 55	6.3 × 7 63	5 × 7 58	8 × 7 72	6.3 × 7 65	8 × 7 75	8 × 7 75	8 × 7 75
47	470	4 × 7 39	5 × 7 50	4 × 7 48	6.3 × 7 59	5 × 7 59	6.3 × 7 68	5 × 7 65	8 × 7 78	6.3 × 7 71	8 × 7 85	8 × 7 85			
100	101	5 × 7 65	6.3 × 7 77	5 × 7 78	8 × 7 96	6.3 × 7 87	8 × 7 107	6.3 × 7 98	8 × 7 115						
220	221	6.3 × 7 110	8 × 7 130	6.3 × 7 120	8 × 7 145			8 × 7 150							
330	331	8 × 7 165		8 × 7 180											
470	471	8 × 7 240													Case size φD × L (mm) Rated ripple

## Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Rated ripple current (mA rms) at 85°C 120Hz  
Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.