

## USA

7mmL, For General Purposes

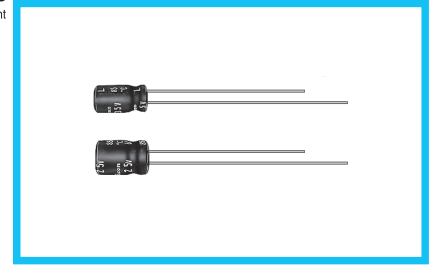
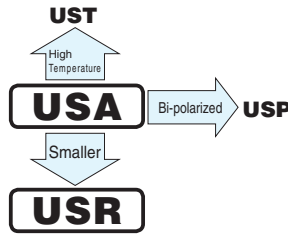
## USR

7mmL, High CV



- Standard miniature series with 7mm height.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).

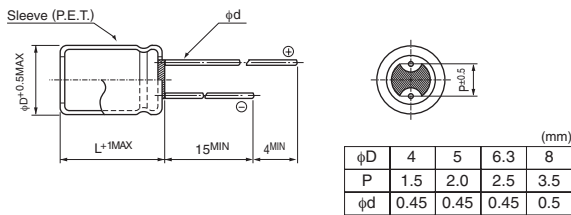
- Higher CV series with 7mm height.



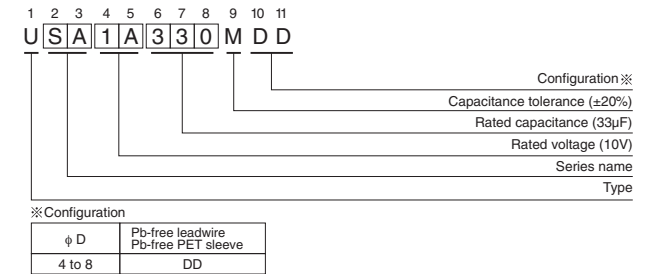
### Specifications

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	1 to 220μF				1 to 470μF									
Capacitance Tolerance	±20% at 120Hz, 20°C				±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						
	tan δ (MAX.)	0.35	0.24	0.20	0.16	0.14	0.12	0.10						
Stability at Low Temperature	Measurement frequency : 120Hz													
	Rated voltage (V)	4	6.3	10	16	25	35	50						
	Impedance ratio	Z-25°C / Z+20°C	6	4	3	2	2	2						
	(MAX.)	Z-40°C / Z+20°C	12	8	6	4	3	3						
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.				<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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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 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.													
Marking	Printed with white color letter on black sleeve.													

### Radial Lead Type



### 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	
1	010													4 × 7	4 × 7
														10	10
2.2	2R2													4 × 7	4 × 7
														19	19
3.3	3R3													4 × 7	4 × 7
														24	24
4.7	4R7											4 × 7	4 × 7	5 × 7	4 × 7
												24	24	29	28
10	100							4 × 7	4 × 7	5 × 7	4 × 7	5 × 7	4 × 7	6.3 × 7	5 × 7
								28	28	33	28	36	31	44	38
22	220			4 × 7	4 × 7	5 × 7	4 × 7	5 × 7	4 × 7	6.3 × 7	5 × 7	6.3 × 7	5 × 7	8 × 7	6.3 × 7
				34	34	38	35	44	39	51	48	57	52	65	58
33	330			4 × 7	4 × 7	5 × 7	4 × 7	6.3 × 7	5 × 7	6.3 × 7	5 × 7	8 × 7	6.3 × 7		8 × 7
				33	42	40	47	57	55	63	58	72	65		75
47	470			4 × 7	5 × 7	4 × 7	6.3 × 7	5 × 7	6.3 × 7	5 × 7	8 × 7	6.3 × 7		8 × 7	
				39	50	48	59	59	68	65	78	71		85	
100	101			5 × 7	6.3 × 7	5 × 7	8 × 7	6.3 × 7	8 × 7	6.3 × 7	8 × 7				
				65	77	78	96	87	107	98	115				
220	221			6.3 × 7	8 × 7	6.3 × 7		8 × 7		8 × 7					
				110	130	120		145		150					
330	331			8 × 7		8 × 7									
				165		180									
470	471			8 × 7											
				240											

Rated ripple current (mA rms) at 85°C 120Hz

### 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

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

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