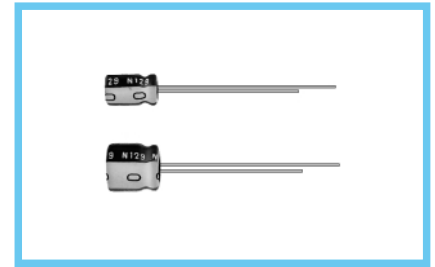
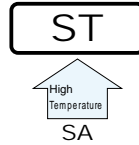


**ST** 7mmL, Wide Temperature Range  
series



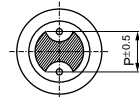
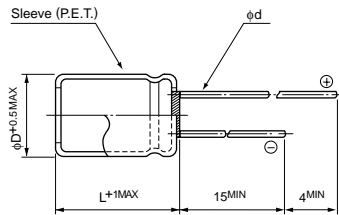
- Wide temperature range of  $-55 \sim +105^{\circ}\text{C}$ , with 7mm height.
- Adapted to the RoHS directive (2002/95/EC).



## Specifications

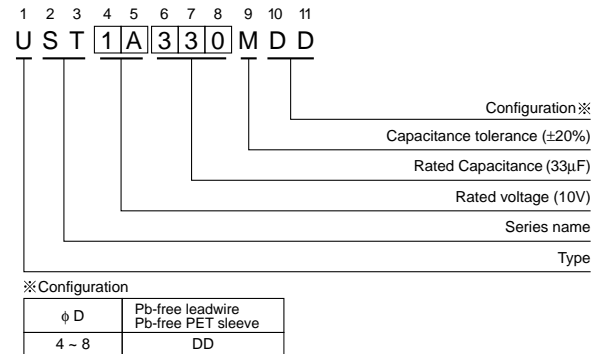
Item	Performance Characteristics																				
Category Temperature Range	$-55 \sim +105^{\circ}\text{C}$																				
Rated Voltage Range	6.3 ~ 50V																				
Rated Capacitance Range	0.1 ~ 220 $\mu\text{F}$																				
Capacitance Tolerance	$\pm 20\%$ at 120Hz, $20^{\circ}\text{C}$																				
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than $0.01\text{CV}$ or $3 (\mu\text{A})$ , whichever is greater.																				
tan $\delta$	Measurement frequency : 120Hz, Temperature : $20^{\circ}\text{C}$																				
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan <math>\delta</math> (MAX.)</td> <td>0.24</td> <td>0.21</td> <td>0.18</td> <td>0.15</td> <td>0.13</td> <td>0.12</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	tan $\delta$ (MAX.)	0.24	0.21	0.18	0.15	0.13	0.12						
Rated voltage (V)	6.3	10	16	25	35	50															
tan $\delta$ (MAX.)	0.24	0.21	0.18	0.15	0.13	0.12															
Stability at Low Temperature	Measurement frequency : 120 Hz																				
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Impedance ratio</td> <td>Z<math>-25^{\circ}\text{C}</math> / Z<math>+20^{\circ}\text{C}</math></td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ZT / Z20 (MAX.)</td> <td>Z<math>-40^{\circ}\text{C}</math> / Z<math>+20^{\circ}\text{C}</math></td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	Impedance ratio	Z $-25^{\circ}\text{C}$ / Z $+20^{\circ}\text{C}$	3	2	2	2	2	ZT / Z20 (MAX.)	Z $-40^{\circ}\text{C}$ / Z $+20^{\circ}\text{C}$	6	5	4	3
Rated voltage (V)	6.3	10	16	25	35	50															
Impedance ratio	Z $-25^{\circ}\text{C}$ / Z $+20^{\circ}\text{C}$	3	2	2	2	2															
ZT / Z20 (MAX.)	Z $-40^{\circ}\text{C}$ / Z $+20^{\circ}\text{C}$	6	5	4	3	3															
Endurance	After 1000 hours' application of rated voltage at $105^{\circ}\text{C}$ , capacitors meet the characteristic requirement listed at right.																				
	<table border="1"> <tr> <td>Capacitance change</td> <td>Within <math>\pm 25\%</math> of initial value (16V or less) Within <math>\pm 20\%</math> of initial value (25V or more)</td> </tr> <tr> <td>tan <math>\delta</math></td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within $\pm 25\%$ of initial value (16V or less) Within $\pm 20\%$ of initial value (25V or more)	tan $\delta$	200% or less of initial specified value	Leakage current	Initial specified value or less														
Capacitance change	Within $\pm 25\%$ of initial value (16V or less) Within $\pm 20\%$ of initial value (25V or more)																				
tan $\delta$	200% or less of initial specified value																				
Leakage current	Initial specified value or less																				
Shelf Life	After storing the capacitors under no load at $105^{\circ}\text{C}$ for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at $20^{\circ}\text{C}$ , they will meet the specified value for endurance characteristics listed above.																				
Marking	Printed with white color letter on black sleeve.																				

## Radial Lead Type



	(mm)			
$\phi\text{D}$	4	5	6.3	8
P	1.5	2.0	2.5	3.5
$\phi\text{d}$	0.45	0.45	0.45	0.5

## Type numbering system (Example : 10V 33 $\mu\text{F}$ )



## Dimensions

Cap. ( $\mu\text{F}$ )	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											4 × 7	1.0
0.22	R22											4 × 7	2.3
0.33	R33											4 × 7	3.5
0.47	R47											4 × 7	5.0
1	010											4 × 7	10
2.2	2R2											4 × 7	19
3.3	3R3											4 × 7	24
4.7	4R7											4 × 7	29
10	100					4 × 7	29	5 × 7	33	4 × 7	24	5 × 7	29
22	220	4 × 7	34	5 × 7	38	5 × 7	44	6.3 × 7	51	5 × 7	36	6.3 × 7	44
33	330	5 × 7	42	5 × 7	47	6.3 × 7	57	6.3 × 7	63	6.3 × 7	57	8 × 7	65
47	470	5 × 7	50	6.3 × 7	59	6.3 × 7	68	6.3 × 7	78	8 × 7	72		
100	101	6.3 × 7	77	8 × 7	96	8 × 7	107						
220	221	8 × 7	130	8 × 7	140							Case size $\phi\text{D} \times \text{L}$ (mm)	Rated ripple

## Frequency coefficient of rated ripple current

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

Rated Ripple (mA rms) at  $105^{\circ}\text{C}$  120Hz

Please refer to page 21, 22, 23 about the formed or taped product spec.  
Please refer to page 3 for the minimum order quantity.