

# SURFACE MOUNT ALUMINUM ELECTROLYTIC CAPACITORS

**UR** Chip type, High Reliability Series

 Low ESR  
 Long Life  
 Solvent Proof  
 WV ≤ 100V



- Chip type, high temperature range, for 125°C use
- Lower ESR than UC series
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- Application to automotive system
- Complied to the RoHS directive

Item	Characteristics	
<b>Operating temperature range</b>	-40 ~ +125°C	
<b>Leakage current max.</b>	WV ≤ 100	WV ≥ 160
	I = 0.01CV or 3μA whichever is greater (after 2 minutes)	I = 0.04CV + 100μA (after 2 minutes)
<b>Capacitance tolerance</b>	±20% at 120Hz, 20°C	
<b>Dissipation factor max. (at 120Hz, 20°C)</b>	WV	10    16    25    35    50 ~ 80    100    160 ~ 250    400
	tanδ	0.22    0.19    0.16    0.14    0.12    0.10    0.20    0.24
<b>Temperature characteristics (Impedance ratio at 120Hz)</b>	WV	10    16    25    35 ~ 100    160 ~ 250    400
	Z-25°C/Z+20°C	3    2    2    2    3    6
	Z-40°C/Z+20°C	4    3    3    3    6    10
<b>Load life (after application of the rated voltage for 5000 hours at 125°C)</b>	Leakage current	Less than specified value
	Capacitance change	Within ±30% of initial value
	tanδ	Less than 300% of specified value
	∅D	~ 80V    100V    160V ~
	∅D = 4, 5, 6, 3	1000 hours    -    -
	8 × 6.2	3000 hours    -    -
<b>Shelf life (at 125°C)</b>	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value. The measurement shall be performed at 20°C by the KS C IEC 60384-4	
	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 10 seconds.	
<b>Resistance to soldering heat</b>	Leakage current	Less than specified value
	Capacitance change	Within ±10% of initial value
	tanδ	Less than specified value

● DRAWING - Series code of UR is "R"

Unit : mm

<p>(∅4, ∅5)</p> <p>∅D±0.5 5.3±0.2 0.3 max.</p>	<p>(∅6.3, ∅8 × 6.2)</p> <p>∅D±0.5 L±0.3 ∅6.3 × 7.7 : L ± 0.4 ∅8 × 6.2 : L ± 0.4 0.3 max.</p>	<p>(∅8 × 10, ∅10 × 10)</p> <p>∅D±0.5 L±0.5 0.3 max. Safety vent</p>	<p>(∅12.5)</p> <p>∅D±0.5 L±0.5 0.3 max. Safety vent</p>	<table border="1"> <thead> <tr> <th>∅D × L</th> <th>W</th> <th>A</th> <th>B</th> <th>C</th> <th>E</th> <th>R</th> </tr> </thead> <tbody> <tr> <td>4 × 5.3</td> <td>4.8</td> <td></td> <td>4.3</td> <td>4.3</td> <td>1.0</td> <td>0.5 ~ 0.8</td> </tr> <tr> <td>5 × 5.3</td> <td>5.8</td> <td></td> <td>5.3</td> <td>5.3</td> <td>1.4</td> <td>0.5 ~ 0.8</td> </tr> <tr> <td>6.3 × 5.3</td> <td></td> <td>2.4</td> <td>6.6</td> <td>6.6</td> <td>2.2</td> <td>0.5 ~ 0.8</td> </tr> <tr> <td>6.3 × 5.8</td> <td></td> <td>2.4</td> <td>6.6</td> <td>6.6</td> <td>2.2</td> <td>0.5 ~ 0.8</td> </tr> <tr> <td>6.3 × 7.7</td> <td></td> <td>2.4</td> <td>6.6</td> <td>6.6</td> <td>2.2</td> <td>0.5 ~ 0.8</td> </tr> <tr> <td>8 × 6.2</td> <td></td> <td>3.3</td> <td>8.3</td> <td>8.3</td> <td>2.3</td> <td>0.5 ~ 0.8</td> </tr> <tr> <td>8 × 10</td> <td></td> <td>2.9</td> <td>8.3</td> <td>8.3</td> <td>3.1</td> <td>0.8 ~ 1.1</td> </tr> <tr> <td>10 × 10</td> <td></td> <td>3.2</td> <td>10.3</td> <td>10.3</td> <td>4.5</td> <td>0.8 ~ 1.1</td> </tr> <tr> <td>12.5 × 13.5</td> <td></td> <td>4.6</td> <td>12.8</td> <td>12.8</td> <td>4.5</td> <td>0.8 ~ 1.4</td> </tr> </tbody> </table>	∅D × L	W	A	B	C	E	R	4 × 5.3	4.8		4.3	4.3	1.0	0.5 ~ 0.8	5 × 5.3	5.8		5.3	5.3	1.4	0.5 ~ 0.8	6.3 × 5.3		2.4	6.6	6.6	2.2	0.5 ~ 0.8	6.3 × 5.8		2.4	6.6	6.6	2.2	0.5 ~ 0.8	6.3 × 7.7		2.4	6.6	6.6	2.2	0.5 ~ 0.8	8 × 6.2		3.3	8.3	8.3	2.3	0.5 ~ 0.8	8 × 10		2.9	8.3	8.3	3.1	0.8 ~ 1.1	10 × 10		3.2	10.3	10.3	4.5	0.8 ~ 1.1	12.5 × 13.5		4.6	12.8	12.8	4.5	0.8 ~ 1.4
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CHIP TYPES

# SURFACE MOUNT ALUMINUM ELECTROLYTIC CAPACITORS

**UR** series

## ● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

$\mu\text{F}$ \diagdown WV	10			16			25			35		
10				4×5.3	7.00	12	5×5.3	3.30	23	6.3×5.8	1.60	69
22	5×5.3	3.30	23	5×5.3	3.30	23	6.3×5.3	2.00	40	6.3×5.8	1.60	69
33	5×5.3	3.30	23	6.3×5.3	2.00	40	6.3×5.8	1.60	69	8×6.2	0.90	110
47	6.3×5.3	2.00	40	6.3×5.8	1.60	69	8×6.2	0.90	110	8×10	0.30	264
100	8×6.2	0.90	110	8×6.2	0.90	110	8×10	0.30	264	8×10	0.30	264
220	8×10	0.30	264	8×10	0.30	355	8×10	0.30	355	10×10	0.20	400
330	8×10	0.30	355	10×10	0.20	400	10×10	0.20	400	12.5×13.5	0.14	750
							12.5×13.5	0.14	750			
470	10×10	0.20	400	12.5×13.5	0.14	750						

$\mu\text{F}$ \diagdown WV	50			63			80			100		
10	6.3×5.8	2.80	51	8×6.2	2.00	60	8×10	1.20	70	8×10	1.60	70
22	8×6.2	1.60	83	8×10	1.00	70	10×10	0.80	115	10×10	1.60	95
33	8×10	0.70	192	10×10	0.55	115	10×10	0.55	115	10×10	0.80	115
47	10×10	0.50	330	10×10	0.55	115	12.5×13.5	0.40	450	12.5×13.5	0.40	450
100	10×10	0.50	330	12.5×13.5	0.33	450	12.5×13.5	0.33	450	12.5×13.5	0.33	450
220	12.5×13.5	0.23	550									
330												
470												

Ripple current (mA rms) at 125°C, 100kHz  
 ESR ( $\Omega$ ) at 20°C, 100kHz  
 Case size  $\varnothing D \times L$  (mm)

$\mu\text{F}$ \diagdown WV	160		200		250		400	
1							10×10	18
2.2							10×10	26
3.3							10×10	37
4.7					12.5×13.5	70	12.5×13.5	70
10	12.5×13.5	100	12.5×13.5	100	12.5×13.5	100		
22	12.5×13.5	120	12.5×13.5	120				

Ripple current (mA rms) at 125°C, 120Hz  
 Case size  $\varnothing D \times L$  (mm)

## ● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Frequency		120Hz	1kHz	10kHz	100kHz
wv	cap.				
≤ 100	~ 10	0.66	0.86	0.93	1.00
	22 ~	0.93	0.97	1.00	1.00
160 ≤	-	1.00	1.50	1.75	1.80