

# ALUMINUM ELECTROLYTIC CAPACITORS

**URZ** Compact & Low-Profile Sized,  
Wide Temperature Range



- Wide temperature range and same size as URS.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).

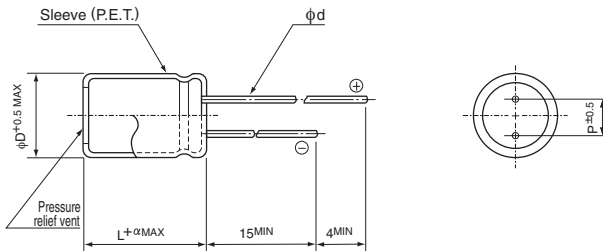
**URZ**



## Specifications

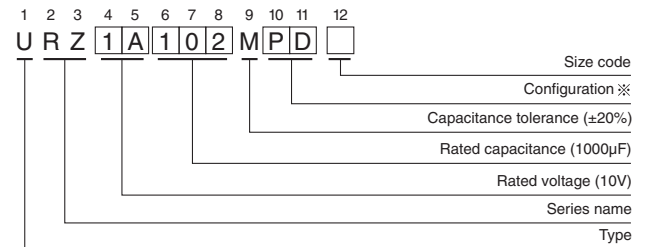
Item	Performance Characteristics																																						
Category Temperature Range	-55 to +105°C (6.3 to 100V), -40 to +105°C (160 to 400V)																																						
Rated Voltage Range	6.3 to 400V																																						
Rated Capacitance Range	10 to 10000µF																																						
Capacitance Tolerance	±20% at 120Hz, 20°C																																						
Leakage Current	<table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3 to 100</th> <th>160 to 400</th> </tr> <tr> <td>_____</td> <td>After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV.</td> <td>After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (µA) or less</td> </tr> </table>	Rated voltage (V)	6.3 to 100	160 to 400	_____	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV.	After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (µA) or less																																
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Tangent of loss angle (tan δ)	For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. Measurement frequency : 120Hz at 20°C <table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.28</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.25</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	400	tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.20	0.20	0.25												
Rated voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	400																											
tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.20	0.20	0.25																											
Stability at Low Temperature	Measurement frequency : 120Hz <table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> </tr> <tr> <td rowspan="2">Impedance ratio (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>3</td> <td>6</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>4</td> <td>10</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	400	Impedance ratio (MAX.)	Z-25°C / Z+20°C	5	4	3	2	2	2	2	2	3	3	6	Z-40°C / Z+20°C	10	8	6	4	3	3	3	3	4	4	10
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	400																										
Impedance ratio (MAX.)	Z-25°C / Z+20°C	5	4	3	2	2	2	2	2	3	3	6																											
	Z-40°C / Z+20°C	10	8	6	4	3	3	3	3	4	4	10																											
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.	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																																				
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 black sleeve.																																						

## Radial Lead Type



α	(φD < 20)	1.5				
	(φD ≥ 20)	2.0				
φD	10	12.5	16	18	20	(mm)
	P	5.0	5.0	7.5	7.5	10.0
φd	0.6	0.6	0.8	0.8	1.0	

## Type numbering system (Example : 10V 1000µF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
10	PD
12.5 to 18	HD
20	RD

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

## Frequency coefficient of rated ripple current

V	Frequency					
	Cap. (µF)	50Hz	120Hz	300Hz	1 kHz	10kHz or more
6.3 to 100	47	0.75	1.00	1.35	1.57	2.00
	100 to 470	0.80	1.00	1.23	1.34	1.50
	1000 to 10000	0.85	1.00	1.10	1.13	1.15
160 to 400	10 to 220	0.80	1.00	1.25	1.40	1.60

• Dimension table in next page.

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## ■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance ( $\mu$ F)	Case Size $\phi$ D $\times$ L (mm)	tan $\delta$	Leakage Current ( $\mu$ A)		Rated Ripple (mArms) (105°C/120Hz)	Part Number	
				at 20°C after 1 minute	at 20°C after 2 minutes			
6.3 (0J)	2200	12.5 $\times$ 15	0.30	415.8	138.6	635	URZ0J222MHD	
	3300	16 $\times$ 15	0.32	623.7	207.9	860	URZ0J332MHD	
	4700	16 $\times$ 15	0.34	888.3	296.1	1010	URZ0J472MHD	
	6800	18 $\times$ 15	0.38	1285.2	428.4	1200	URZ0J682MHD	
	10000	18 $\times$ 20	0.46	1890	630	1450	URZ0J103MHD	
10 (1A)	1000	10 $\times$ 12.5	0.24	300	100	450	URZ1A102MPD	
	2200	12.5 $\times$ 15	0.26	660	220	690	URZ1A222MHD	
	3300	16 $\times$ 15	0.28	990	330	940	URZ1A332MHD	
	4700	18 $\times$ 15	0.30	1410	470	1120	URZ1A472MHD	
	6800	18 $\times$ 20	0.34	2040	680	1330	URZ1A682MHD	
10000	18 $\times$ 25	0.42	3000	1000	1700	URZ1A103MHD		
	16 (1C)	1000	12.5 $\times$ 12.5	0.20	480	160	520	URZ1C102MHD
		2200	16 $\times$ 15	0.22	1056	352	830	URZ1C222MHD
		3300	18 $\times$ 15	0.24	1584	528	1050	URZ1C332MHD
		4700	18 $\times$ 20	0.26	2256	752	1260	URZ1C472MHD
6800		18 $\times$ 25	0.30	3264	1088	1560	URZ1C682MHD	
25 (1E)	470	10 $\times$ 12.5	0.16	352.5	117.5	370	URZ1E471MPD	
	1000	12.5 $\times$ 15	0.16	750	250	590	URZ1E102MHD	
	2200	18 $\times$ 15	0.18	1650	550	970	URZ1E222MHD	
	3300	18 $\times$ 20	0.20	2475	825	1220	URZ1E332MHD	
	4700	18 $\times$ 25	0.22	3525	1175	1470	URZ1E472MHD	
35 (1V)	330	10 $\times$ 12.5	0.14	346.5	115.5	340	URZ1V331MPD	
	470	12.5 $\times$ 12.5	0.14	493.5	164.5	420	URZ1V471MHD	
	1000	16 $\times$ 15	0.14	1050	350	720	URZ1V102MHD	
	2200	18 $\times$ 20	0.16	2310	770	1110	URZ1V222MHD	
	3300	20 $\times$ 25	0.18	3465	1155	1430	URZ1V332MRD	
50 (1H)	220	10 $\times$ 12.5	0.12	330	110	290	URZ1H221MPD	
	330	12.5 $\times$ 12.5	0.12	495	165	370	URZ1H331MHD	
	470	16 $\times$ 15	0.12	705	235	540	URZ1H471MHD	
	1000	18 $\times$ 20	0.12	1500	500	830	URZ1H102MHD	
	2200	20 $\times$ 25	0.14	3300	1100	1250	URZ1H222MRD	
63 (1J)	220	12.5 $\times$ 12.5	0.10	415.8	138.6	335	URZ1J221MHD	
	330	12.5 $\times$ 15	0.10	623.7	207.9	510	URZ1J331MHD	
	470	16 $\times$ 15	0.10	888.3	296.1	640	URZ1J471MHD	
100 (2A)	47	10 $\times$ 12.5	0.08	141	47	165	URZ2A470MPD	
	100	12.5 $\times$ 15	0.08	300	100	265	URZ2A101MHD	
	220	16 $\times$ 15	0.08	660	220	440	URZ2A221MHD	
	330	18 $\times$ 15	0.08	990	330	540	URZ2A331MHD	
160 (2C)	47	16 $\times$ 15	0.20	400.8	—	300	URZ2C470MHD	
	68	18 $\times$ 15	0.20	535.2	—	350	URZ2C680MHD	
	68	16 $\times$ 20	0.20	535.2	—	350	URZ2C680MHD6	

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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## ■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance ( $\mu$ F)	Case Size $\phi$ D×L (mm)	tan $\delta$	Leakage Current ( $\mu$ A)		Rated Ripple (mA <sub>rms</sub> ) (105°C/120Hz)	Part Number
				at 20°C after 1 minute	at 20°C after 2 minutes		
160 (2C)	100	18×20	0.20	740	—	420	URZ2C101MHD
	100	20×15	0.20	740	—	420	URZ2C101MRD6
	150	18×25	0.20	1060	—	510	URZ2C151MHD
	150	20×20	0.20	1060	—	510	URZ2C151MRD6
	220	20×25	0.20	1508	—	550	URZ2C221MRD
200 (2D)	33	16×15	0.20	364	—	250	URZ2D330MHD
	47	18×15	0.20	476	—	300	URZ2D470MHD
	47	16×20	0.20	476	—	300	URZ2D470MHD6
	68	18×20	0.20	644	—	350	URZ2D680MHD
	68	20×15	0.20	644	—	350	URZ2D680MRD6
	100	18×25	0.20	900	—	420	URZ2D101MHD
	100	20×20	0.20	900	—	420	URZ2D101MRD6
250 (2E)	22	16×15	0.20	320	—	200	URZ2E220MHD
	33	18×15	0.20	430	—	250	URZ2E330MHD
	33	16×20	0.20	430	—	250	URZ2E330MHD6
	47	18×20	0.20	570	—	300	URZ2E470MHD
	47	20×15	0.20	570	—	300	URZ2E470MRD6
	68	18×20	0.20	780	—	350	URZ2E680MHD
	100	18×25	0.20	1100	—	420	URZ2E101MHD
400 (2G)	10	16×15	0.25	260	—	100	URZ2G100MHD
	22	18×15	0.25	452	—	200	URZ2G220MHD
	22	16×20	0.25	452	—	200	URZ2G220MHD6
	33	18×20	0.25	628	—	250	URZ2G330MHD
	47	18×25	0.25	852	—	300	URZ2G470MHD
	47	20×20	0.25	852	—	300	URZ2G470MRD6
	68	20×25	0.25	1188	—	350	URZ2G680MRD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

- For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.

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