

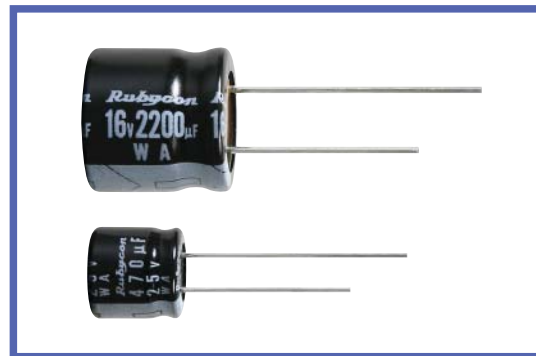


WA SERIES

85°C Miniaturized low profile.

◆ **FEATURES**

- 9~25mm height.
- RoHS compliance.



◆ **SPECIFICATIONS**

Items	Characteristics																																																		
Category Temperature Range	-40 ~ +85°C	-25 ~ +85°C																																																	
Rated Voltage Range	6.3~250V.DC	350~450V.DC																																																	
Capacitance Tolerance	±20%(20°C,120Hz)																																																		
Leakage Current(MAX)	6.3~50V.DC	160~450V.DC																																																	
	I=0.01CV or 3µA whichever is greater. (After 2 minutes application of rated voltage)	CV ≤ 1000																																																	
		CV > 1000																																																	
	I=0.1CV+40µA (1minute) I=0.03CV+15µA (5minutes)	I=0.04CV+100µA (1minute) I=0.02CV+25µA (5minutes)																																																	
	I=Leakage Current(µA) C=Rated Capacitance(µF) V=Rated Voltage(V)																																																		
Dissipation Factor(MAX) (tanδ)	<table border="1"> <thead> <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>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>tanδ</td> <td>0.26</td> <td>0.22</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> </tr> </tbody> </table>											Rated Voltage (V)	6.3	10	16	25	35	50	160	200	250	350	400	450	tanδ	0.26	0.22	0.18	0.16	0.14	0.12	0.20	0.20	0.20	0.20	0.20	0.20	(20°C,120Hz)													
	Rated Voltage (V)	6.3	10	16	25	35	50	160	200	250	350	400	450																																						
tanδ	0.26	0.22	0.18	0.16	0.14	0.12	0.20	0.20	0.20	0.20	0.20	0.20																																							
When rated capacitance is over 1000µF, tanδ shall be added 0.02 to the listed value with increase of every 1000µF.																																																			
Endurance	After applying rated voltage with rated ripple current for 2000hrs at 85°C, the capacitors shall meet the following requirements.																																																		
	Capacitance Change		Within ± 25% of the initial value.																																																
	Dissipation Factor		Not more than 200% of the specified value.																																																
Leakage Current		Not more than the specified value.																																																	
Low Temperature Stability Impedance Ratio(MAX)	<table border="1"> <thead> <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>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>3</td> <td>3</td> <td>3</td> <td>5</td> <td>5</td> <td>7</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>12</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>											Rated Voltage (V)	6.3	10	16	25	35	50	160	200	250	350	400	450	Z(-25°C)/Z(20°C)	6	4	4	3	2	2	3	3	3	5	5	7	Z(-40°C)/Z(20°C)	12	10	8	6	4	3	-	-	-	-	-	-	(120Hz)
	Rated Voltage (V)	6.3	10	16	25	35	50	160	200	250	350	400	450																																						
	Z(-25°C)/Z(20°C)	6	4	4	3	2	2	3	3	3	5	5	7																																						
Z(-40°C)/Z(20°C)	12	10	8	6	4	3	-	-	-	-	-	-																																							

◆ **MULTIPLIER FOR RIPPLE CURRENT**

Frequency coefficient

Frequency (Hz)		60(50)	120	500	1k	10k ≤
Coefficient	1.5~6.8µF	0.65	1.0	1.20	1.30	1.50
	10~68µF	0.8	1.0	1.20	1.30	1.50
	100~1000µF	0.8	1.0	1.10	1.15	1.20
	2200~10000µF	0.8	1.0	1.05	1.10	1.15

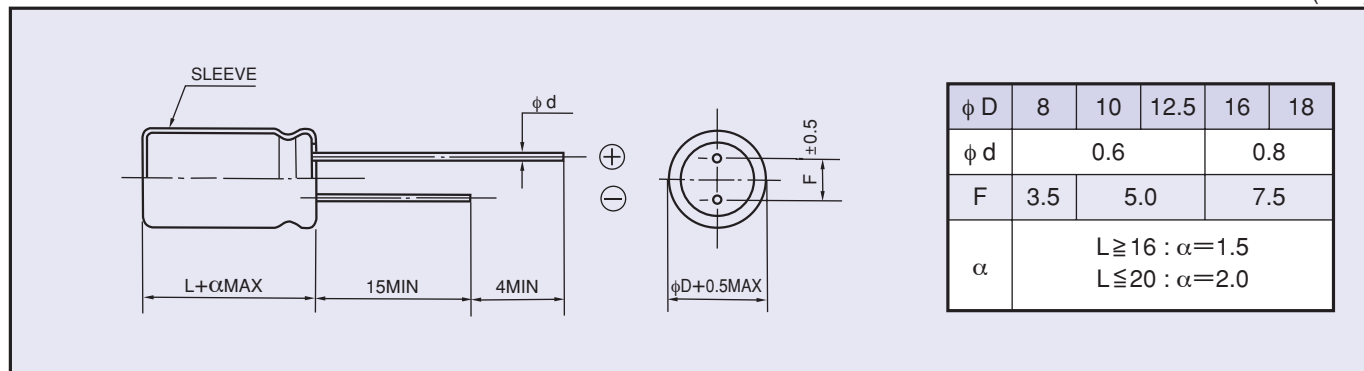
◆ **PART NUMBER**

 WA D×L
 Rated Voltage Series Rated Capacitance Capacitance Tolerance Option Lead Forming Case Size



◆ DIMENSIONS

(mm)



◆ STANDARD SIZE

Size $\phi D \times L$ (mm), Ripple Current (mA r.m.s./85°C, 120Hz)

Cap(μ F)	WV (V.DC)	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
100												8x9	240
150										8x9	260	10x9	320
220								8x9	320	10x9	360		
330						8x9	350	10x9	410	10x9	420		
470		8x9	380	8x9	380	8x9	380	10x9	460			12.5x16	700
680		8x9	420	10x9	510	10x9	510	12.5x16	760	12.5x16	760	16x16	810
1000		10x9	550	10x9	550			12.5x16	940	16x16	950	16x20	1050
2200		12.5x16	1080	12.5x16	1080	16x16	1100	16x20	1400	18x20	1500	18x25	1650
3300		12.5x16	1100	16x16	1120	16x20	1500	18x20	1550	18x25	1850		
4700		18x16	1200	16x20	1550	18x20	1600	18x25	2000				
6800		16x20	1550	18x20	1650	18x25	2050						
10000		18x20	1700	18x25	2150								

Cap(μ F)	WV (V.DC)	160 (2C)		200 (2D)		250 (2E)		350 (2V)		400 (2G)		450 (2W)	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1.5												8x9	19
2.2										8x9	35	10x9	29
3.3								8x9	37	10x9	40	10x9	35
4.7		8x9	54	8x9	54	8x9	54	10x9	49	10x9	49		
6.8		8x9	60	8x9	60	10x9	69	12.5x16	94	12.5x16	94	12.5x16	77
10		10x9	85	10x9	85	10x9	85	12.5x16	100	12.5x16	100	16x16	131
22						12.5x16	156	16x16	220	18x16	226	16x20	208
33		12.5x16	175	12.5x16	175	16x16	270	18x16	270	16x20	282	18x20	259
47		12.5x16	220	16x16	313	18x16	330	16x20	330	18x20	350	18x25	333
68		16x16	353	18x16	380	16x20	414	18x25	455	18x25	455		
100		16x20	478	16x20	478	18x20	507						
150		18x20	595	18x25	671	18x25	671						
220		18x25	771										