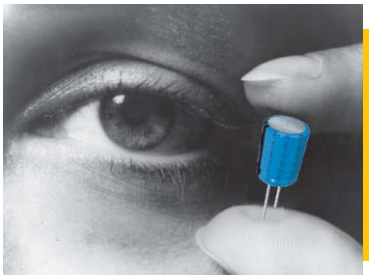


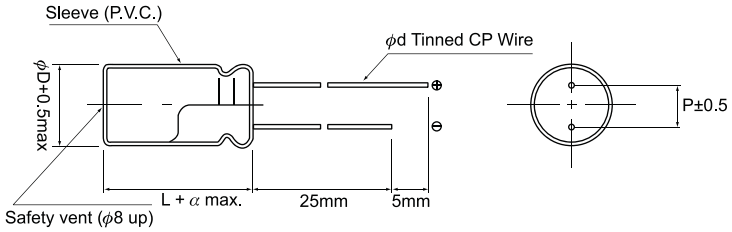
Aluminum Electrolytic Capacitor
Type EWR

Δ Features

- Designed in high value CV with smaller size.
- Excellent reliability
- Guaranteed long life (2,000 hours at 105º C)

Δ Applications

- Suitable for use with high reliability equipment in the medical, telecom and consumer industry.



NOTE: Part Numbering System

(1)	(2)	(3)	(4)
EWR	106	M	1H

1 Series
2 Capacitance
3 Tolerance
4 Working Voltage

DØ x L (mm)

Dø		5	6.3	8	10	13	16	18	20	22	25
P		2	2.5	3.5	5	5	7.5	7.5	10	10	12.5
ød		0.5			0.6		0.8		1		
α	~100WV	1			1.5		1.5		2		
	160WV~	1.5			2		2		2		

Δ Specifications

Item	Performance Characteristics												
Operating Temperature Range	-40 + 105°C					-25 + 105°C							
Rated Voltage	6.3V ~100V					160V ~450V							
Capacitance Range	0.1 ~47,000 µF												
Capacitance Tolerance	±20% (120Hz, 20°C)												
Leakage Current	0.02CV or 4 µA, whichever is greater after 2 minutes application of rated voltage.					0.03CV + 10 µA, whichever is greater after 2 minutes application of rated voltage.							
Dissipation Factor (120Hz, 20ºC)	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160~250	350~450		
	Tan d (max.)	0.28	0.24	0.2	0.16	0.14	0.12	0.1	0.08	0.2	0.25		
	For capacitance of more than 1,000µF, add 0.02 for every increase of 1,000µF.												
Temperature Characteristics (120Hz)	Impedance Ratio / Stability at Low Temperature												
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160~200	250~350	400	450
	Z (-25°C) / Z (20°C)	5	4	3	2	2	2	2	2	3	4	6	15
	Z (-40°C) / Z (20°C)	10	8	6	4	3	3	3	3	4	8	10	-
Load Life	After 2,000 hours application of WV at 105°C, capacitor shall meet the characteristics requirements mentioned below.												
	Capacitance change	Within ±20% of initial value											
	Tan d	200% or less of initial specified value											
	Leakage current	Initial specified value or less											
Shelf Life	After leaving capacitors under no load at 105°C for 1,000 hours and applying voltage according to JIS C5102 and C5141, they shall meet the specified value as load life characteristics listed above.												

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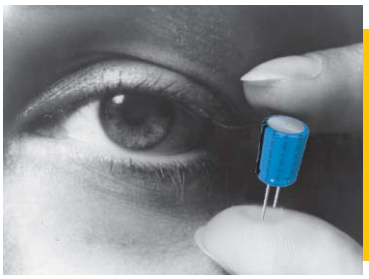

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Aluminum Electrolytic Capacitor

Type EWR

∆ Dimensions

Dφ x L (mm)

WV (SV)	10 (13) 1A		16 (20) 1C		25 (32) 1E		35 (44) 1V		50 (63) 1H		63 (75) 1J	
Cap(μF)												
0.1									5x11	1.3		
0.22									5x11	2.9		
0.33									5x11	4.3		
0.47									5x11	7		
1									5x11	13		
2.2									5x11	20		
3.3									5x11	25		
4.7									5x11	30		
10	5x11	36	5x11	41	5x11	46	5x11	46	5x11	46	5x11	46
22	5x11	45	5x11	54	5x11	58	5x11	61	5x11	68	6.3x11	82
											5x11	71
33	5x11	58	5x11	65	5x11	68	5x11	75	6.3x11	95	6.3x11	100
									5x11	90		
47	5x11	68	5x11	79	5x11	83	6.3x11	100	6.3x11	115	8x11	135
							5x11	93			6.3x11	120
68	5x11	80	5x11	90	5x11	95	6.3x11	110	8x11	145	8x11	155
									6.3x11	130		
100	5x11	105	6.3x11	125	6.3x11	140	8x11	170	8x11	190	10x12	215
			5x11	115	5x11	125	6.3x11	150			8x11	200
220	6.3x11	175	6.3x11	190	8x11	240	10x12	275	10x16	440	10x20	400
							8x11	250	10x12	300	10x16	335
330	6.3x11	210	8x11	260	10x12	315	10x16	400	10x20	460	13x20	540
					8x11	275	10x12	350	10x16	410	10x20	510
470	8x11	290	10x12	370	10x16	440	10x20	520	13x20	610	13x20	640
	6.3x11	250	8x11	315	10x12	380	10x16	460	10x20	540		
1000	10x12	460	10x20	640	13x20	770	13x25	920	16x25	1080	16x32	1210
			10x16	560	10x20	680	13x20	810	13x25	950	16x25	930
2200	10x20	760	13x25	1000	16x25	1170	16x32	1340	16x36	1470	18x36	1650
			13x20	920	13x25	1090	16x25	1260	16x32	1410		
3300	13x25	1100	16x25	1300	16x32	1460	16x36	1610	18x36	1770	20x40	1950
	13x20	1000	13x25	1170	16x25	1400	16x32	1500				
4700	16x25	1400	16x32	1600	16x32	1710	18x36	1910	20x40	2100	22x50	2450
	13x25	1260	16x25	1480	16x25	1570	16x36	1780				
6800	16x32	1690	16x36	1780	18x36	2040	20x40	2150	22x50	2500	25x50	2800
	16x25	1570	16x25	1600	16x36	1850	18x40	2000				
10000	16x36	1890	18x36	2060	20x40	2150	22x50	2650	25x50	2850		
	16x32	1820	16x36	1930	18x40	2000						
15000	18x36	2180	20x40	2430	22x50	2750	25x50	3100				
	16x36	2050	18x40	2210								
22000	20x40	2650	22x50	3000	25x50	3250						
	18x40	2420	22x40	2710								
33000	22x50	3250	25x50	3450								
	22x50	3210										
47000	25x50	3570									Case Size	Ripple

Ripple current (mA) at 105°C 120Hz

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Aluminum Electrolytic Capacitor

Type EWR

Δ Dimensions

Dφ x L (mm)

WV (SV)	100 (125) 2A		160 (200) 2C		200 (250) 2D		250 (300) 2E		350 (400) 2V		400 (450) 2G		450 (500) 2W	
Cap(μF)														
0.1	5x11	1.5			6.3x11	1.5								
0.22	5x11	3.4			6.3x11	3.3								
0.33	5x11	5			6.3x11	5								
0.47	5x11	7.1	6.3x11	11	6.3x11	11	6.3x11	10			6.3x11	8.5		
1	5x11	15	6.3x11	16	6.3x11	16	6.3x11	15	6.3x11	15	8x11	17	8x11	13
											6.3x11	14		
2.2	5x11	21	6.3x11	25	6.3x11	25	6.3x11	23	8x11	26	10x12	30	10x12	23
									6.3x11	21	8x11	27	8x11	20
3.3	5x11	29	6.3x11	30	6.3x11	30	8x11	32	10x12	38	10x16	38	10x16	31
							6.3x11	28	8x11	30	10x12	34	10x12	28
4.7	5x11	32	6.3x11	34	8x11	39	8x11	39	10x12	45	10x16	50	10x20	40
					6.3x11	35	6.3x11	35	8x11	39	10x12	42	10x12	32
10	6.3x11	54	8x11	41	10x12	65	10x16	74	10x20	80	13x20	90	13x20	65
	5x11	50			8x11	57	10x12	71	10x12	64	10x16	64	10x20	27
22	6.3x11	93	10x16	100	10x20	120	13x20	130	13x25	115	16x25	165	16x25	115
			10x12	92	10x16	105	10x20	105	13x20	105	13x25	140	13x25	100
33	8x11	130	10x20	145	13x20	160	13x20	160	16x25	195	16x32	215	16x36	165
			10x16	125	10x20	140	10x20	140	13x25	170	16x25	170	16x25	125
47	10x12	165	13x20	195	13x20	195	13x25	210	16x36	270	16x36	270	18x40	185
	8x11	140	10x20	150			13x20	190	16x25	210	16x25	200	16x32	155
68	10x12	190	13x20	250	13x25	250	16x25	270	16x25	285	16x32	240	18x36	185
100	10x20	265	13x25	315	16x32	375	16x32	365	18x40	420	20x40	450	22x40	270
	10x16	240			16x25	320	16x25	310	18x36	370	18x36	310	18x40	200
220	13x25	440	16x36	570	18x36	575	20x40	600	22x50	620	25x50	660	25x50	250
	13x20	390	16x32	410	16x36	500	18x36	485			22x50	460		
330	13x25	540	18x40	750	20x40	705	22x50	730	25x50	710				
			18x36	570	18x40	675	20x40	710						
470	16x25	715	22x40	900	22x50	840	25x50	870						
			18x40	855	22x40	925	22x50	1000						
1000	18x40	985	25x50	1310										
	18x36	960												
2200	22x50	1750												
3300	25x50	2070											Case Size	Ripple

Ripple current (mA) at 105°C 120 Hz

• Frequency coefficient of allowable ripple current

WV	Cap(μF) Frequency	50 Hz	120 Hz	300 Hz	1 KHz	10 KHz~
6.3~100	~ 68	0.75	1	1.35	1.57	2.00
	100 ~ 470	0.80	1	1.23	1.34	1.50
	1,000 ~ 47,000	0.85	1	1.10	1.13	1.15
160~450	0.47 ~ 220	0.80	1	1.25	1.40	1.60
	330 ~ 1,000	0.95	1	1.10	1.13	1.15

• Allowable ripple vs. Ambient temperature

Ambient Temp. (°C)	~ +70	+85	+105
Compensating Coefficient	1.78	1.4	1.0

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