



# LARGE CAN TYPE ALUMINUM ELECTROLYTIC CAPACITORS MXR

## MXR SERIES

105°C Standard, Snap-in Terminal Type

### ◆FEATURES

- Load Life : 105°C 3000 hours.
- Smaller size with higher ripple current endurance than MXP series.



### ◆SPECIFICATIONS

Items	Characteristics																							
Category Temperature Range	-40~+105°C	-25~+105°C																						
Rated Voltage Range	10~100V.DC	160~450V.DC																						
Capacitance Tolerance	±20% (20°C, 120Hz)																							
Leakage Current(MAX)	$I=3\sqrt{CV}$ (After 5 minutes application of rated voltage) $I$ =Leakage Current( $\mu$ A) $V$ =Rated Voltage(V) $C$ =Rated Capacitance( $\mu$ F)																							
Dissipation Factor(MAX)	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160~250</th> <th>315~450</th> </tr> </thead> <tbody> <tr> <td><math>\tan \delta</math></td> <td>0.55</td> <td>0.50</td> <td>0.45</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> </tr> </tbody> </table> (20°C, 120Hz)		Rated Voltage(V)	10	16	25	35	50	63	80	100	160~250	315~450	$\tan \delta$	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15
Rated Voltage(V)	10	16	25	35	50	63	80	100	160~250	315~450														
$\tan \delta$	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15														
Impedance Ratio(MAX)	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>10~100</th> <th>160~250</th> <th>315~450</th> </tr> </thead> <tbody> <tr> <td><math>Z(-25^\circ\text{C})/Z(20^\circ\text{C})</math></td> <td>3</td> <td>3</td> <td>8</td> </tr> <tr> <td><math>Z(-40^\circ\text{C})/Z(20^\circ\text{C})</math></td> <td>12</td> <td></td> <td></td> </tr> </tbody> </table> (120Hz)		Rated Voltage(V)	10~100	160~250	315~450	$Z(-25^\circ\text{C})/Z(20^\circ\text{C})$	3	3	8	$Z(-40^\circ\text{C})/Z(20^\circ\text{C})$	12												
Rated Voltage(V)	10~100	160~250	315~450																					
$Z(-25^\circ\text{C})/Z(20^\circ\text{C})$	3	3	8																					
$Z(-40^\circ\text{C})/Z(20^\circ\text{C})$	12																							
Endurance	After applying rated voltage with rated ripple current for 3000hrs at 105°C, the capacitors shall meet the following requirements. <table border="1"> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of the initial value.</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> </tr> </tbody> </table>		Capacitance Change	Within ±20% of the initial value.	Dissipation Factor	Not more than 200% of the specified value.	Leakage Current	Not more than the specified value.																
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Dissipation Factor	Not more than 200% of the specified value.																							
Leakage Current	Not more than the specified value.																							

### ◆MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

Frequency (Hz)		60(50)	120	500	1k	10k $\leq$
Coefficient	10~100WV	0.90	1.00	1.05	1.10	1.15
	160~250WV	0.80	1.00	1.10	1.14	1.18
	315~450WV	0.80	1.00	1.05	1.10	1.15

### ◆PART NUMBER

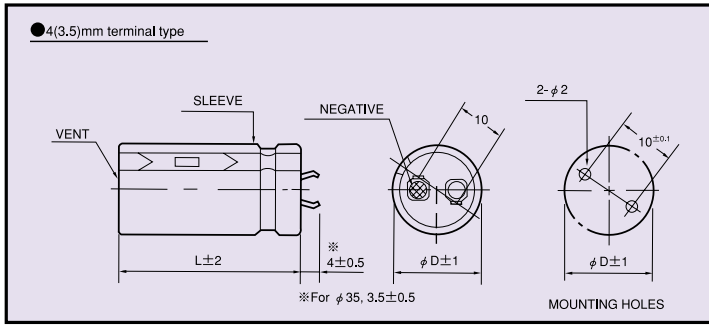
   MXR                OOE         DXL  
 Rated Voltage    Series    Rated Capacitance    Capacitance Tolerance    Option    Terminal Code    Case Size

### ◆Option

	Code
without plate	OOE
with plate	Blank

## ◆ DIMENSIONS

(mm)



## ◆ STANDARD SIZE, RATED RIPPLE CURRENT

Cap (μF)	WV φD	10					16				
		φ 20	φ 22	φ 25	φ 30	φ 35	φ 20	φ 22	φ 25	φ 30	φ 35
5600							20×25; 1.68				
6800	20×25; 1.31						20×30; 1.80	22×25; 1.75			
8200	20×30; 1.59						20×35; 2.08	22×30; 2.00			
10000	20×30; 1.88	22×25; 1.77					20×40; 2.15	22×30; 2.10	25×25; 2.05		
12000	20×35; 2.18	22×30; 2.10	25×25; 1.94					22×35; 2.31	25×30; 2.30	30×25; 2.30	
15000	20×40; 2.27	22×35; 2.23	25×30; 2.10					22×40; 2.68	25×35; 2.58	30×30; 2.57	
18000		22×40; 2.41	25×30; 2.34	30×25; 2.25				22×50; 3.20	25×40; 3.16	30×30; 2.98	
22000		22×45; 2.58	25×35; 2.54	30×30; 2.50					25×45; 3.36	30×35; 3.30	35×30; 3.25
27000		22×50; 3.17	25×40; 3.07	30×30; 2.95					25×50; 3.85	30×40; 3.80	35×35; 3.93
33000			25×45; 3.39	30×35; 3.33	35×30; 3.21					30×45; 4.30	35×35; 4.27
39000				30×40; 3.70	35×35; 3.68					30×50; 4.81	35×40; 4.80
47000				30×45; 4.22	35×40; 4.16						35×45; 5.53
56000					35×45; 5.00						

Cap (μF)	WV φD	25					35				
		φ 20	φ 22	φ 25	φ 30	φ 35	φ 20	φ 22	φ 25	φ 30	φ 35
2700							20×25; 1.29				
3300							20×30; 1.57	22×25; 1.45			
3900	20×25; 1.58						20×35; 1.78	22×30; 1.69			
4700	20×30; 1.65	22×25; 1.61					20×40; 2.02	22×35; 2.02	25×25; 1.62		
5600	20×35; 1.85	22×30; 1.80						22×35; 2.13	25×30; 2.00		
6800	20×40; 2.11	22×35; 2.09	25×25; 1.87					22×40; 2.41	25×35; 2.31	30×25; 2.31	
8200		22×40; 2.31	25×30; 2.34	30×25; 2.16				22×50; 2.85	25×40; 2.73	30×30; 2.75	
10000		22×45; 2.65	25×35; 2.61	30×30; 2.61					25×45; 3.05	30×35; 3.05	
12000		22×50; 2.80	25×40; 2.81	30×30; 2.74					25×50; 3.37	30×40; 3.23	35×30; 3.19
15000			25×45; 3.27	30×35; 3.13	35×30; 3.26					30×45; 3.72	35×35; 3.67
18000				30×40; 3.56	35×35; 3.84						35×40; 4.37
22000				30×45; 4.04	35×35; 3.75						35×45; 4.92
27000					35×45; 4.74						
33000					35×50; 5.50						

Cap (μF)	WV φD	50					63				
		φ 20	φ 22	φ 25	φ 30	φ 35	φ 20	φ 22	φ 25	φ 30	φ 35
1000							20×25; 1.10				
1200							20×30; 1.20	22×25; 1.20			
1500	20×25; 1.15						20×35; 1.47	22×30; 1.47			
1800	20×30; 1.39	22×25; 1.34					20×35; 1.58	22×30; 1.58	25×25; 1.52		
2200	20×35; 1.60	22×30; 1.60					20×40; 1.80	22×35; 1.82	25×30; 1.75		
2700	20×35; 1.73	22×30; 1.70	25×25; 1.70					22×40; 2.07	25×35; 2.11	30×25; 1.72	
3300	20×40; 1.97	22×35; 1.97	25×30; 1.88					22×45; 2.33	25×35; 2.27	30×30; 2.24	
3900		22×40; 2.22	25×30; 2.20	30×25; 1.95					25×40; 2.51	30×35; 2.55	
4700		22×45; 2.43	25×35; 2.43	30×30; 2.25					25×50; 2.97	30×40; 2.86	35×30; 2.80
5600		22×50; 2.75	25×40; 2.72	30×30; 2.64						30×40; 3.22	35×35; 3.20
6800			25×45; 3.30	30×35; 3.30	35×30; 3.25					30×50; 3.65	35×40; 3.65
8200				30×40; 3.60	35×35; 3.60						35×45; 4.04
10000				30×50; 4.05	35×40; 4.04						35×50; 4.48
12000					35×45; 4.56						
15000					35×50; 4.77						

↑ Ripple Current A r.m.s./120Hz-105°C  
Case Size φD<sup>±1</sup>×L<sup>±2</sup>(mm)



# LARGE CAN TYPE ALUMINUM ELECTROLYTIC CAPACITORS MXR

## ◆ STANDARD SIZE, RATED RIPPLE CURRENT

Cap ( $\mu$ F)	WV $\phi$ D	80					100				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
560							20×25; 0.95				
680							20×30; 1.15	22×25; 1.09			
820		20×25; 1.04					20×35; 1.31	22×30; 1.32			
1000		20×30; 1.24	22×25; 1.19				20×35; 1.43	22×30; 1.47	25×25; 1.45		
1200		20×35; 1.43	22×30; 1.44				20×40; 1.61	22×35; 1.69	25×30; 1.68		
1500		20×35; 1.57	22×30; 1.59	25×25; 1.59				22×40; 1.97	25×35; 1.98	30×25; 1.95	
1800		20×40; 1.77	22×35; 1.79	25×30; 1.71				22×45; 2.23	25×40; 2.20	30×30; 2.20	
2200			22×40; 2.03	25×35; 1.98	30×25; 1.98				25×45; 2.53	30×35; 2.55	35×30; 2.50
2700			22×45; 2.39	25×40; 2.35	30×30; 2.35				25×50; 2.82	30×40; 2.86	35×35; 2.89
3300				25×45; 2.64	30×35; 2.61	35×30; 2.47				30×45; 3.30	35×35; 3.25
3900				25×50; 2.92	30×40; 2.82	35×30; 2.97				30×50; 3.60	35×40; 3.67
4700					30×45; 3.34	35×35; 3.38					35×45; 3.80
5600					30×50; 3.80	35×40; 3.80					35×50; 4.05
6800						35×45; 3.90					
8200						35×50; 4.20					

Cap ( $\mu$ F)	WV $\phi$ D	160					180				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
220							20×25; 0.81				
270		20×25; 0.87					20×30; 0.95	22×25; 0.97			
330		20×30; 1.02	22×25; 1.03				20×35; 1.09	22×30; 1.13			
390		20×35; 1.15	22×30; 1.17				20×35; 1.28	22×30; 1.32	25×25; 1.33		
470		20×40; 1.25	22×30; 1.28	25×25; 1.29			20×40; 1.34	22×35; 1.39	25×30; 1.43		
560			22×35; 1.45	25×30; 1.49				22×40; 1.56	25×30; 1.53	30×25; 1.56	
680			22×40; 1.64	25×35; 1.70	30×25; 1.63			22×45; 1.76	25×35; 1.76	30×30; 1.74	
820			22×45; 1.85	25×40; 1.92	30×30; 1.91			22×50; 1.97	25×40; 1.99	30×30; 1.93	
1000				25×45; 2.17	30×35; 2.19				25×45; 2.24	30×35; 2.24	35×30; 2.20
1200				25×50; 2.43	30×40; 2.48	35×30; 2.25				30×40; 2.53	35×35; 2.54
1500					30×45; 2.82	35×35; 2.62				30×50; 3.03	35×40; 2.91
1800					30×50; 3.13	35×40; 2.97					35×45; 3.25
2200						35×45; 3.34					35×50; 3.62

Cap ( $\mu$ F)	WV $\phi$ D	200					220				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
180							20×25; 0.81				
220		20×25; 0.83					20×30; 0.94	22×25; 0.94			
270		20×30; 0.97	22×25; 0.99				20×35; 1.10	22×30; 1.09			
330		20×35; 1.17	22×30; 1.20	25×25; 1.20			20×40; 1.18	22×35; 1.24	25×25; 1.14		
390		20×40; 1.27	22×35; 1.30	25×30; 1.34			20×45; 1.33	22×35; 1.30	25×25; 1.26		
470			22×40; 1.44	25×30; 1.44	30×25; 1.48			22×40; 1.41	25×30; 1.39	30×25; 1.37	
560			22×45; 1.60	25×35; 1.60	30×30; 1.60			22×45; 1.60	25×35; 1.56	30×30; 1.61	35×25; 1.52
680			22×50; 1.75	25×40; 1.76	30×30; 1.74				25×40; 1.75	30×35; 1.76	35×30; 1.72
820				25×45; 2.10	30×35; 2.11	35×30; 2.10			25×45; 1.97	30×40; 2.06	35×30; 1.95
1000				25×50; 2.36	30×40; 2.40	35×35; 2.30				30×45; 2.44	35×35; 2.20
1200					30×45; 2.69	35×35; 2.53					35×40; 2.37
1500						35×40; 2.97					35×45; 2.64
1800						35×50; 3.45					

Cap ( $\mu$ F)	WV $\phi$ D	250					315				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
82							20×25; 0.39				
100							20×30; 0.45				
120							20×30; 0.54	22×25; 0.56			
150		20×25; 0.71					20×35; 0.64	22×30; 0.66	25×25; 0.65		
180		20×30; 0.82	22×25; 0.84				20×40; 0.75	22×35; 0.78	25×30; 0.71		
220		20×35; 0.95	22×30; 0.97	25×25; 0.99				22×40; 0.89	25×30; 0.85	30×25; 0.83	
270		20×40; 1.08	22×35; 1.11	25×30; 1.15				22×45; 1.01	25×35; 0.98	30×30; 1.01	
330			22×40; 1.26	25×30; 1.26	30×25; 1.31			22×50; 1.14	25×40; 1.12	30×35; 1.21	
390			22×45; 1.41	25×35; 1.42	30×30; 1.50				25×45; 1.31	30×35; 1.30	35×30; 1.23
470			22×50; 1.58	25×40; 1.61	30×30; 1.61					30×40; 1.53	35×35; 1.47
560				25×45; 1.80	30×35; 1.84					30×45; 1.65	35×40; 1.66
680				25×50; 2.03	30×40; 2.09	35×30; 1.96					35×45; 1.96
820					30×45; 2.35	35×35; 2.26					35×50; 2.19
1000					30×50; 2.64	35×40; 2.57					
1200						35×45; 2.88					

↑ Ripple Current A r.m.s./120Hz·105°C  
Case Size  $\phi$  D $^{\pm 1}$  × L $^{\pm 2}$ (mm)

## ◆ STANDARD SIZE, RATED RIPPLE CURRENT

Cap ( $\mu$ F)	wv $\phi$ D	350					385				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
56							20×25; 0.37				
68	20×25; 0.41						20×30; 0.44	22×25; 0.45			
82	20×30; 0.45						20×30; 0.50	22×30; 0.52			
100	20×30; 0.51	22×25; 0.53					20×35; 0.56	22×30; 0.58	25×25; 0.57		
120	20×35; 0.59	22×30; 0.61	25×25; 0.62				20×40; 0.66	22×35; 0.68	25×30; 0.68		
150	20×40; 0.70	22×35; 0.73	25×30; 0.73					22×40; 0.79	25×30; 0.78	30×25; 0.75	
180		22×40; 0.83	25×30; 0.80	30×25; 0.81				22×45; 0.89	25×35; 0.86	30×30; 0.88	
220		22×45; 0.94	25×35; 0.92	30×30; 0.98				22×50; 1.01	25×40; 1.00	30×30; 1.00	
270		22×50; 1.07	25×40; 1.05	30×30; 1.03					25×45; 1.13	30×40; 1.14	35×30; 1.10
330			25×45; 1.24	30×35; 1.24	35×30; 1.18					30×45; 1.31	35×35; 1.32
390			25×50; 1.38	30×40; 1.39	35×35; 1.39					30×50; 1.48	35×40; 1.48
470				30×45; 1.57	35×35; 1.50						35×45; 1.76
560				30×50; 1.75	35×40; 1.69						35×50; 1.95
680					35×45; 1.96						

Cap ( $\mu$ F)	wv $\phi$ D	400					420				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35	$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
56	20×25; 0.40						20×25; 0.40				
68	20×30; 0.48	22×25; 0.49					20×30; 0.48	22×25; 0.50			
82	20×30; 0.54	22×30; 0.56					20×35; 0.53	22×30; 0.56	25×25; 0.56		
100	20×35; 0.60	22×30; 0.62	25×25; 0.61				20×35; 0.58	22×30; 0.63	25×25; 0.63		
120	20×40; 0.71	22×35; 0.73	25×30; 0.73				20×45; 0.71	22×35; 0.73	25×30; 0.72	30×25; 0.75	
150		22×40; 0.85	25×35; 0.85	30×25; 0.79				22×45; 0.86	25×35; 0.83	30×25; 0.83	
180		22×45; 0.95	25×35; 0.92	30×30; 0.95				22×50; 1.02	25×40; 0.94	30×30; 0.95	35×25; 0.90
220		22×50; 1.08	25×40; 1.05	30×35; 1.24					25×45; 1.13	30×35; 1.09	35×30; 1.05
270			25×50; 1.29	30×40; 1.30	35×30; 1.18				25×50; 1.37	30×40; 1.25	35×35; 1.25
330				30×45; 1.47	35×35; 1.41					30×45; 1.49	35×35; 1.42
390				30×50; 1.64	35×40; 1.59					30×50; 1.67	35×40; 1.61
470					35×45; 1.87						35×45; 1.86
560					35×50; 2.09						

Cap ( $\mu$ F)	wv $\phi$ D	450				
		$\phi$ 20	$\phi$ 22	$\phi$ 25	$\phi$ 30	$\phi$ 35
47	20×25; 0.36					
56	20×30; 0.41	22×25; 0.42				
68	20×35; 0.47	22×30; 0.50	25×25; 0.50			
82	20×40; 0.53	22×35; 0.56	25×30; 0.57			
100		22×40; 0.64	25×30; 0.63	30×25; 0.67		
120		22×45; 0.72	25×35; 0.71	30×30; 0.77		
150		22×50; 0.80	25×40; 0.82	30×30; 0.85		
180			25×45; 0.93	30×35; 0.97		
220			25×50; 1.05	30×40; 1.10	35×30; 1.01	
270				30×45; 1.25	35×35; 1.26	
330				30×50; 1.42	35×40; 1.44	
390					35×45; 1.61	
470					35×50; 1.80	

↑ Ripple Current A r.m.s./120Hz·105°C  
 Case Size  $\phi D^{\pm 1} \times L^{\pm 2}$ (mm)