

## *Data Sheet*

Customer: \_\_\_\_\_

Product: Aluminum Electrolytic Capacitors – EXR Series \_\_\_\_\_

Size : 5x11mm ~ 18x41mm \_\_\_\_\_

Issued Date: 25-May.-2016 \_\_\_\_\_

Edition: Ver. 1 \_\_\_\_\_

### Record of change

Date	Ver.	Description	Page
25-May-2016	1		
23-Apr-2018	2	Load life 100V:2000hrs	1

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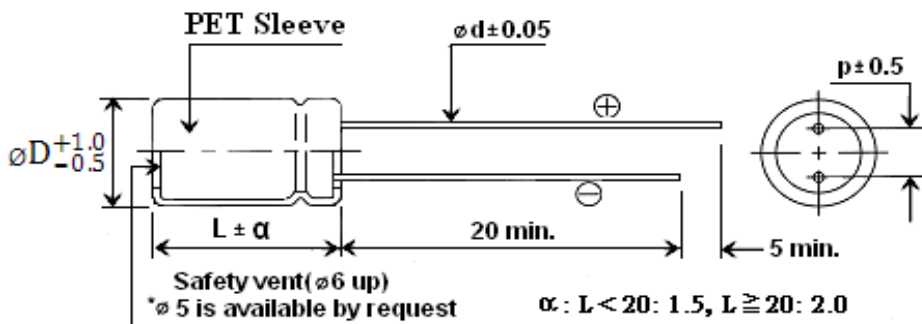
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Prepared by	Checked by	Approved by	Accepted by (customer)
25-May-2016	25-May-2016	25-May-2016	
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- EXR series capacitors are ideal for use in switching power supplies, communication equipments and etc.
- **Low Impedance** and long life.
- Safety vent construction design.
- RoHS Compliant

## Characteristics

<b>Voltage Range</b>	6.3 to 100 VDC				160 to 450 VDC											
<b>Capacitance Range</b>	4.7 to 15000uF				1 to 470uF											
<b>Temperature Range</b>	-40 to +105°C				-25 to +105°C											
<b>Leakage Current</b>	I ≤ 0.01CV or 2uA, whichever is greater 3 minutes after Rated Voltage applied				I ≤ 0.03CV 3 minutes after Rated Voltage applied											
<b>Capacitance Tolerance</b>	±20% at 120Hz, 20°C (10% Tol. is available upon request)															
<b>Dissipation Factor</b> (at 20°C, 120Hz)	Working Voltage (V)	6.3	10	16	25	35	50	63	100							
	tanδ(%) max	18	16	14	12	10	9	8	8							
	Working Voltage (V)	160	200	250	350	400	450									
	tanδ(%) max	12	12	12	15	15	17									
<b>Low Temperature Characteristics</b> (120Hz)	For capacitance > 1000uF, add 0.02 for every 1000uF															
	Working Voltage (V)	6.3	10	16	25	35	50	63	100							
	Z-25°C/Z +20°C	4	3	3	3	3	3	2	2							
	Z-40°C/Z +20°C	8	6	4	3	3	3	3	3							
	Working Voltage (V)	160	200	250	350	400	450									
	Z-25°C/Z +20°C	2	2	3	5	5	6									
Z-40°C/Z +20°C	3	6	6	6	6	-										
For capacitance > 1000uF, add 0.5 every 1000uF for -25°C/+20°C add 1.0 every 1000uF for -40°C/+20°C																
<b>Load Life :</b>	<table border="1"> <tr> <th>Dφ</th> <th>Life Hours</th> </tr> <tr> <td>5 - 6.3 φ</td> <td>2000</td> </tr> <tr> <td>8 φ</td> <td>3000</td> </tr> <tr> <td>≥ 10 φ</td> <td>5000</td> </tr> </table>		Dφ	Life Hours	5 - 6.3 φ	2000	8 φ	3000	≥ 10 φ	5000	After the rated voltage with ripple current has been applied for at 105°C  <b>(100V~450V : 2000HRS)</b>		Capacitance change		Within ±20% of initial value	
Dφ			Life Hours													
5 - 6.3 φ			2000													
8 φ			3000													
≥ 10 φ	5000															
D.F. tanδ		200% or less of initial specified value														
Leakage current		Less than initial specified value														
<b>Shelf life (at 105°C)</b>		After storage for 1000 hours at 105°C with no voltage applied, the capacitor shall meet the specified limit in load life. Pre-treatment for measurement shall be conducted after application of DC working voltage for 30 minutes.														



## Drawing

Dφ	5	6.3	8	10	13	16	18
p	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dφ	0.5	0.5	0.5	0.6	0.6	0.8	0.8

## Ripple Current Coefficients

Frequency (Hz)	50(60)	120	400	1K	10K	100K
<b>Cap.(uF) / Hz</b>	<b>Multiplier</b>					
Cap. ≤ 10	0.47	0.59	0.76	0.85	0.97	1
10 < Cap. ≤ 100	0.52	0.62	0.80	0.89	0.97	1
100 < Cap. ≤ 1000	0.58	0.72	0.84	0.90	0.98	1
1000 < Cap.	0.63	0.78	0.87	0.91	0.98	1



**Case size & Maximum Ripple Current (mA rms 105°C 100KHz)**

WV Cap	160		200		250		350		400		450		
	uF	Size	RC	Size	RC	Size	RC	Size	RC	Size	RC	Size	RC
1	6.3x11	45	6.3x11	45	6.3x11	50	8x12	58	8x12	36	8x12	45	
2.2	6.3x11	55	6.3x11	55	8x12	72	8x12 10x12.5	75 86	8x12 10x12.5	65 76	10x16	65	
3.3	8x12	70	8x12	71	8x12	75	8x12 10x12.5	75 90	8x12 10x12.5	86 105	10x16	89	
4.7	8x12	72	8x12 10x12.5	78 85	8x12 10x12.5	85 100	10x16 10x21	118 130	8x12 10x12.5	89 105	10x21 13x21	105 110	
10	10x12.5 10x16	120 140	8x12 10x16	115 150	10x12.5 10x16	144 160	10x16 13x21	165 200	10x21 13x21	213 235	13x21 13x26	180 189	
22	10x16 10x21	185 205	10x16 10x21	185 205	10x16 10x21	190 210	13x21	220	13x21 13x26	268 295	13x26	320	
33	10x21 13x21	205 260	10x21 13x21	280 330	10x21 13x21	224 310	13x21 13x26	263 290	13x26 16x26	399 440	16x26	460	
47	10x21 13x21	276 320	13x21 13x26	360 400	13x21 13x26	375 405	16x26 16x26	389 430	16x26 16x31.5	539 580	16x36	650	
68	13x26	450	13x26 16x26	480 540	16x26	490	16x31.5	475	18x25 18x32	774 800	18x36	760	
100	16x26	540	16x31.5	820	16x31.5	675	18x31.5 18x36	487 513	18x36 18x41	854 900	18x36 18x41	825 880	
150	16x31.5	710	16x36	860	16x36	750	18x41	590					
220	16x36	820	18x36 18x41	1050 1090	18x36 18x41	850 910							
330	18x41	1180											

**Part Numbering System**

EXR SERIES	101 CAPACITANCE	M TOL.	25 W.V.	A PACKAGE	- SIZE	T1 LEAD SPACE
	IN 3DIGITS	M= ± 20%	0J= 6.3V	B= Bulk	Omit if only	Omit if Bulk
	010= 1.0uF		10= 10V	C5= Cut 5mm	one size	T1= L/S 2.5mm Taped
	4R7= 4.7 uF		16= 16V	AC5= Smaller Size cut 5mm	A= Smaller Size	TA= Lead forming space 5mm Taped
	101= 100uF		25= 25V			
	102= 1000uF		35= 35V	A= Ammo Pack		T35= L/S 3.5mm Taped
			50= 50V	R= Tape&Reel		T2=L/S 5mm Taped
			63= 63V	F5= Lead formed & cut 5mm		T3= L/S 7.5mm Taped
			2A= 100V			
			2C= 160V			
			2D= 200V			
			2E= 250V			
			2V= 350V			
			2G= 400V			
			2W= 450V			