

## *Data Sheet*

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

Product: Aluminum Electrolytic Capacitors – ESX Series

Size : 5x11mm ~ 18x41mm

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Edition: Ver. 1

### Record of change

Date	Ver.	Description	Page
20-May-2016	1		

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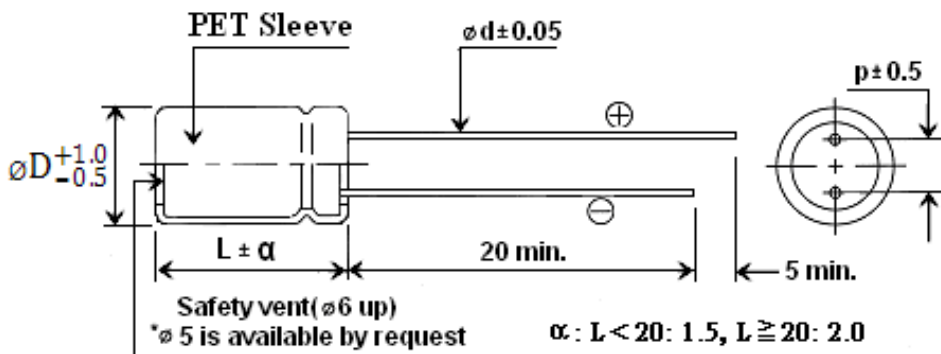
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Prepared by	Checked by	Approved by	Accepted by (customer)
20-May-2016	20-May-2016	20-May-2016	
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- ESX series capacitors are extremely low impedance for high frequency.
- Load life 105°C, 5000 hours assured. (2000 hours for  $D \leq 8\text{mm}$  as specified below)

**Characteristics**

<b>Voltage Range</b>	6.3 ~ 63V				100V				
<b>Capacitance Range</b>	1.0 ~ 10000uF								
<b>Temperature Range</b>	-55 ~ + 105°C				-40 ~ + 105°C				
<b>Leakage Current</b>	I=0.01CV or 3uA, whichever is greater (After 2 minutes)								
<b>Capacitance Tolerance</b>	±20% at 120Hz, 20°C( 10% Tol. is available upon request)								
<b>Dissipation Factor</b>	WV	6.3	10	16	25	35	50	63	100
	tan δ	0.20	0.18	0.16	0.14	0.12	0.10	0.09	0.08
For capacitance > 1000uF, add 0.02 for every 1000uF.(at 20°C, 120Hz)									
<b>Stability at Low Temperature (120Hz)</b>	Rated Voltage (V)	6.3	10	16	25	35	50	63	100
	Z-40°C/Z 20°C	6	4	3	3	2	2	2	2
	Z-55°C/Z 20°C	8	6	5	5	4	4	4	3
<b>Load Life</b> After the rated voltage has been applied for 2000~5000 hours at 105°C	2000hrs for $D \leq 8\text{mm}$ , 5000hrs for $D \geq 10\text{mm}$				Capacitance change		Within ±25% of initial value		
					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**

Cap(uF)\Freq. (Hz)	60	120	400	1K	10K	>10K
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

**Part Numbering System**

<b>ESX</b>	<b>101</b>	<b>M</b>	<b>25</b>	<b>A</b>	<b>-</b>	<b>T1</b>
<b>SERIES</b>	<b>CAPACITANCE</b>	<b>TOL.</b>	<b>W.V.</b>	<b>PACKAGE</b>	<b>SIZE</b>	<b>LEAD SPACE</b>
	IN 3DIGITS	M= ± 20%	0J= 6.3V	B= Bulk	Omit if only	Omit if Bulk
	100=10uF		10= 10V	A= Ammo Pack	one size	T1= L/S 2.5mm Taped
	101= 100uF		16= 16V	F5= Lead formed & cut 5mm	A= Smaller Size	TA= Lead forming space 5mm Taped
	102= 1000uF		2A= 100V			

## Case size & Maximum Ripple Current (mA rms 105°C 100KHz) & Imp. ( $\Omega$ 20°C 100KHz)

WV Cap.	6.3			10			16			25		
	uF	Size	Imp	RC	Size	Imp	RC	Size	Imp	RC	Size	Imp
10							5x11	4.00	37	5x11	2.10	56
22							5x11	2.00	70	5x11	1.80	120
33							5x11	1.26	130	5x11	1.20	150
47				5x11	1.20	120	5x11	0.52	190	5x11	0.50	220
68				5x11	0.89	145	5x11	0.45	210	6.3x11	0.39	270
100	5x11	0.95	185	5x11	0.48	205	6.3x11	0.31	260	6.3x11	0.28	300
150	6.3x11	0.75	210	6.3x11	0.37	270	6.3x11	0.26	300	8x12	0.19	435
220	6.3x11	0.55	300	6.3x11	0.28	330	8x12	0.21	455	8x12	0.125	550
330	8x12	0.30	390	8x12	0.16	430	8x12	0.12	550	10x13	0.082	720
470	8x12	0.22	430	8x12	0.12	555	10x13	0.095	722	10x16	0.065	1040
680	8x12	0.18	510	10x13	0.10	660	10x16	0.074	920	10x20	0.052	1280
1000	10x13	0.10	660	10x16	0.07	1010	10x20 10x25	0.054 0.050	1100 1180	13x20 13x25	0.039 0.038	1530 1580
1500	10x16 10x20	0.074 0.054	1050 1100	10x20	0.054	1270	10x25 13x20	0.041 0.050	1470 1400	13x25	0.032	2020
2200	10x25 13x20	0.057 0.050	1300 1400	13x20 13x25	0.050 0.040	1400 1690	13x20 13x25	0.035 0.033	1850 1950	16x25	0.027	2405
3300	13x20 13x25	0.050 0.048	1400 1500	13x25	0.029	1980	16x25	0.028	2340	16x31.5 18x25	0.020 0.022	2960 3050
4700	13x25 16x25	0.032 0.030	1800 2100	16x25	0.029	2100	16x31.5	0.022	2650	18x36	0.021	3520
6800	16x25	0.022	2230	16x31.5	0.025	2600	18x31.5 18x36	0.020 0.022	2700 3000	18x41	0.017	3600
10000	16x31.5 16x36	0.021 0.019	2600 2740	18x31.5 18x36	0.017 0.022	2770 3000	18x41	0.015	3300			

