



## SMD Aluminum Solid Electrolytic Capacitor - ESEA0606 series

### ■ Introduction

- Standard SMD type
- Rated voltage: 2.5Vdc ~ 25Vdc
- Endurance: 2,000 hours at 105°C
- Suitable for DC-DC converters, voltage regulators and decoupling applications.
- RoHS Compliant

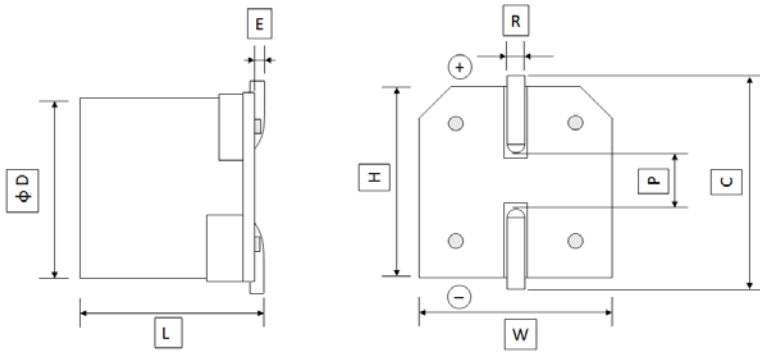


### ■ Specifications

ITEMS	CONDITIONS	CHARACTERISTICS	
Category Temperature Range		-55 to +105°C	
Rated Voltage Range		2.5Vdc ~ 25 Vdc	
Capacitance Tolerance	20°C, 120Hz	±20% (M)	
Surge Voltage	15°C to 35°C	Rated voltage x 1.15V	
Leakage Current	20°C after 2 minutes	Please see the Electrical Characteristics page	
Dissipation Factor (tan δ)	20°C, 120Hz	0.12 max.	
Characteristics of Impedance at Low, High Temperature	-55°C, 100KHz	$Z(-55^{\circ}\text{C}) / Z(+20^{\circ}\text{C}) \leq 1.25$	
	105°C 100KHz	$Z(-105^{\circ}\text{C}) / Z(+20^{\circ}\text{C}) \leq 1.25$	
Endurance	The specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 105°C.	Appearance	No significant damage
		Capacitance Change	$\leq \pm 20\%$ of the initial value
		DF (tan δ)	$\leq 150\%$ of the initial specified value
		ESR	$\leq 150\%$ of the initial specified value
		Leakage current	$\leq$ The initial specified value
Damp Heat, Steady State	The specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to store at 60°C, 90 to 95% RH for 1,000 hours, without DC applied.	Appearance	No significant damage
		Capacitance Change	$\leq \pm 20\%$ of the initial value
		DF (tan δ)	$\leq 150\%$ of the initial specified value
		ESR	$\leq 150\%$ of the initial specified value
		Leakage current	$\leq$ The initial specified value
Surge Voltage	The Capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds.	Appearance	No significant damage
		Capacitance Change	$\leq \pm 20\%$ of the initial value
		DF (tan δ)	$\leq 150\%$ of the initial specified value
		ESR	$\leq 150\%$ of the initial specified value
		Leakage current	$\leq$ The initial specified value

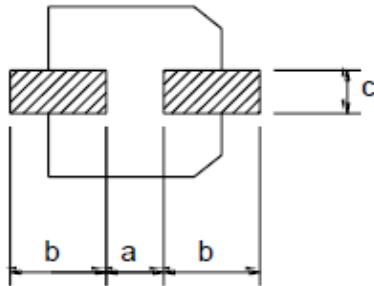


■ Shape and Dimensions (Unit: mm)



Size code	$\phi D \pm 0.5$	$L \pm 0.2$	E	$W \pm 0.2$	$H \pm 0.2$	$C \pm 0.2$	R	$P \pm 0.2$
0606	6.3	5.8	0~0.2	6.6	6.6	7.3	0.5~0.8	2.1

■ Recommended soldering pad dimensions (Unit: mm)



Size code	0606
a	2.1
b	3.5
c	1.6

■ Ordering Information

ES EA 0606 331 M 2R5  
1 2 3 4 5 6

- 1. SMD Type
- 2. Series Name
- 3. Dimensions Code
- 4. Capacitance : **331**=330  $\mu$ F.
- 5. Capacitance tolerance : **M**=  $\pm$  20%.
- 6. Working Voltage(WV) : **2R5** = 2.5 VDC ; **160** = 16 VDC.



## ■ Electrical Characteristics

Part No.	Size Code	Cap (μF)	WV/Vdc (SV)	Note(1) Leakage Current (μA)	tan δ	ESR (mΩmax/20°C, 100k to 300kHz)	Rated Ripple Current (mArms/105°C/100kHz)
ESEA0606-331M-2R5	0606	330	2.5 (2.9)	413	0.12	15	3,160
ESEA0606-391M-2R5	0606	390		292	0.12	10	3,900
ESEA0606-561M-2R5	0606	560		700	0.12	10	3,900
ESEA0606-221M-4R0	0606	220	4 (4.6)	440	0.12	25	2,500
ESEA0606-331M-4R0	0606	330		660	0.12	15	3,160
ESEA0606-101M-6R3	0606	100	6.3 (7.2)	315	0.12	27	2,400
ESEA0606-151M-6R3	0606	150		473	0.12	15	2,700
ESEA0606-221M-6R3	0606	220		277	0.12	15	3,160
ESEA0606-331M-6R3	0606	330		416	0.12	17	3,390
ESEA0606-121M-100	0606	120	10 (11.5)	600	0.12	25	2,530
ESEA0606-470M-160	0606	47	16 (18.4)	376	0.12	25	2,500
ESEA0606-101M-160	0606	100		320	0.12	24	2,490
ESEA0606-270M-250	0606	27	25 (28.8)	135	0.12	40	2,100
ESEA0606-470M-250	0606	47		235	0.12	30	2,500

**Note(1). Leakage Current** : DC rated voltage shall be applied between anode and cathode lead wire terminations of a capacitor through 1k protective resistance, and the leakage current shall be less than or equal to the value listed in above table after 2 minutes with the voltage reaching the rated value at 20±2°C.

If the value is doubtful, measure the leakage current after performing voltage treatment which shall contain the following steps:

Voltage treatment: (1) DC rated voltage is applied to the capacitors for 60 minutes at 105°C. (2) Cooled down to room temperature with applying voltage. (3) Discharged through a resistor of approximately 1Ω/V