



DIP Aluminum Solid Electrolytic Capacitor - EDEA series

■ Introduction

- Super low ESR, high ripple current capability
- Rated voltage: 2.5V ~ 25Vdc
- Endurance: 2,000 hours at 105°C
- Suitable for DC-DC converters, voltage regulators and decoupling applications
- RoHS Compliant

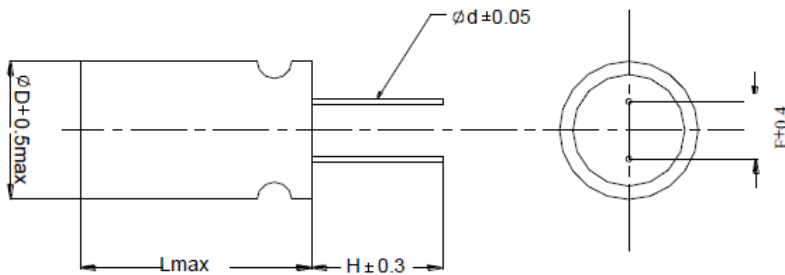


■ Ordering Information

ED EA 0809 561 M 2R5
1 2 3 4 5 6

- | | |
|--------------------|--|
| 1. DIP Type | 4. Capacitance : 561 =560 μF. |
| 2. Series Name | 5. Capacitance tolerance : M = ± 20%. |
| 3. Dimensions Code | 6. Working Voltage(WV) : 2R5 = 2.5 VDC ; 160 = 16 VDC. |

■ Shape and Dimensions (Unit: mm)



Size code	φ D + 0.5max	L max	φ d ± 0.05	F ± 0.4	H ± 0.3
0406	4.0	6.0	0.45	1.5	3.2
0606	6.3	6.0	0.45	2.5	3.2
0609	6.3	9.0	0.6	2.5	3.2
0809	8.0	9.0	0.6	3.5	3.2
0812	8.0	12.0	0.6	3.5	3.2
1012	10.0	12.0	0.6	5.0	3.2



■ Specifications

ITEMS	CONDITIONS	CHARACTERISTICS	
Category Temperature Range		-55 to +105°C	
Rated Voltage Range		2.5V to 25 Vdc	
Capacitance Tolerance	at 20°C, 120Hz	±20% (M)	
Surge Voltage	15°C to 35°C	Rated voltage x 1.15V	
Leakage Current	at 20°C after 2 minutes	Please see the Electrical Characteristics page	
Dissipation Factor (tan δ)	at 20°C, 120Hz	0.12 max.	
Characteristics of Impedance at Low, High Temperature	at -55°C, 100KHz	$Z(-55^{\circ}\text{C}) / Z(+20^{\circ}\text{C}) \leq 1.25$	
	at 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 voltages 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



■ Electrical Characteristics

Part No.	Size Code	Cap (μF)	WV/Vdc (SV)	Note(1) Leakage Current (μA)	tan δ	ESR (mΩmax/20°C, 100k to300kHz)	Rated Ripple Current (mArms/105°C/100kHz)
EDEA0606-391M-2R5	0606	390	2.5 (2.9)	195	0.12	20	3,160
EDEA0809-561M-2R5	0809	560		280	0.12	12	4,710
EDEA0809-821M-2R5	0809	820		410	0.12	10	5,230
EDEA0812-102M-2R5	0812	1,000		500	0.12	10	5,230
EDEA1012-152M-2R5	1012	1,500		750	0.12	10	5,560
EDEA0606-271M-4R0	0606	270	4 (4.6)	216	0.12	20	3,160
EDEA0809-561M-4R0	0809	560		448	0.12	12	4,710
EDEA1012-821M-4R0	1012	820		656	0.12	10	5,560
EDEA1012-122M-4R0	1012	1,200		960	0.12	10	5,560
EDEA0606-221M-6R3	0606	220	6.3 (7.2)	277	0.12	15	3,160
EDEA0606-331M-6R3	0606	330		416	0.12	17	3,390
EDEA0809-471M-6R3	0809	470		592	0.12	15	4,210
EDEA0809-561M-6R3	0809	560		705	0.12	15	4,210
EDEA1012-821M-6R3	1012	820		1,033	0.12	12	5,440
EDEA1012-102M-6R3	1012	1,000		1,260	0.12	12	5,440
EDEA1012-152M-6R3	1012	1,500	1,890	0.12	12	5,440	
EDEA0406-100M-100	0406	10	10 (11.5)	300	0.12	80	700
EDEA0606-101M-100	0606	100		200	0.12	25	2,820
EDEA0812-271M-100	0812	270		540	0.12	12	4,710
EDEA0812-471M-100	0812	470		940	0.12	12	4,710
EDEA1012-471M100	1012	470		940	0.12	12	5,440
EDEA0606-470M-160	0606	47	16 (18.4)	150	0.12	50	1,650
EDEA0606-101M-160	0606	100		320	0.12	24	2,490
EDEA0609-101M-160	0609	100		320	0.12	25	2,820
EDEA0812-271M-160	0812	270		864	0.12	16	4,070
EDEA1012-331M-160	1012	330		1,056	0.12	16	4,720
EDEA1012-471M-160	1012	470		1,505	0.12	16	4,720
EDEA1012-681M-160	1012	680		2,176	0.12	16	4,720
EDEA0606-270M-250	0606	27	25 (28.8)	135	0.12	40	2,100
EDEA0809-680M-250	0809	68		340	0.12	24	3,380
EDEA0812-101M-250	0812	100		500	0.12	22	3,600
EDEA1012-221M-250	1012	220		1,100	0.12	22	4,000
EDEA0812-221M-250	0812	220		1,100	0.12	22	3,600

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.