CONDUCTIVE POLYMER ALUMINUM SOLID ELECTROLYTIC CAPACITORS

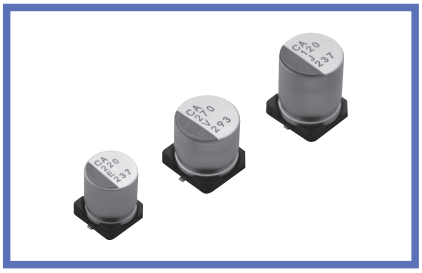
nichicon

Expanded

PCA

Chip Type, High Reliability

For SMD | HR High Ripple Current | Z Low Impedance | F For High Frequency | L Long Life



- High reliability, Ripple current superimposition guaranteed products.
- Low ESR, High ripple current.
- Long life of 4000 hours at 125°C.
- SMD type : Lead free reflow soldering condition at 260°C peak complete correspondence.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- ESR after Endurance at -40°C.
- AEC-Q200 compliant. Please contact us for details.

PCA ← Compliant to high ripple current. → PCR

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +125°C
Rated Voltage Range	25 to 80V
Rated Capacitance Range	33 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Tangent of loss angle (tan δ)	Less than or equal to the specified value at 120Hz, 20°C
ESR (※1)	Less than or equal to the specified value at 100kHz, 20°C
Leakage Current (※2)	After 2 minutes' application of rated voltage, leakage current is not more than 0.03CV. ※
Temperature Characteristics (Max.Impedance Ratio)	Z(+125°C) / Z(+20°C) ≦ 1.25 (100kHz) Z(−55°C) / Z(+20°C) ≦ 1.25
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 4000 hours at 125°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ± 20% of initial capacitance value (※3) tan δ: 150% or less of the initial specified value ESR (※1): 200% or less of the initial specified value Leakage current (※2): Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 125°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
ESR after Endurance (※1)	Less than or equal to the specified value at 100kHz, -40°C
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C, 85% RH. Capacitance change: Within ± 20% of initial capacitance value (※3) tan δ: 150% or less of the initial specified value ESR (※1): 200% or less of the initial specified value Leakage current (※2): Less than or equal to the initial specified value
Resistance to Soldering Heat	After soldering the capacitor under the soldering conditions prescribed here, the capacitor shall meet the specifications listed at right. Pre-heating shall be done at 150 to 200°C and for 60 to 180 sec. The duration for over +230°C temperature at capacitor surface shall not exceed 60 seconds. In case peak temperature is 260°C or less, reflow soldering shall be two times maximum. Measurement for solder temperature profile shall be made at the capacitor top. Capacitance change: Within ± 10% of the initial capacitance value (※3) tan δ: 130% or less than the initial specified value ESR (※1): 130% or less than the initial specified value Leakage current (※2): Less than or equal to the initial specified value
Marking	Navy blue print on the case top

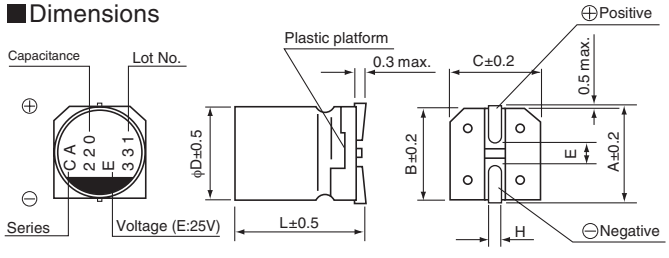
※1 ESR should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform.

※2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.

※3 Initial value : The value before test of examination of resistance to soldering.

※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

■Dimensions



Standard (mm)

Size	φ8×10L	φ8×12L	φ10×10L	φ10×12.7L
φD	8.0	8.0	10.0	10.0
L	9.9	11.9	9.9	12.6
A	9.0	9.0	11.0	11.0
B	8.3	8.3	10.3	10.3
C	8.3	8.3	10.3	10.3
E	3.2	3.2	4.6	4.6
H	0.8 to 1.1	0.8 to 1.1	0.8 to 1.1	0.8 to 1.1

Voltage

V	25	35	50	63	80
Code	E	V	H	J	K

●Frequency coefficient of rated ripple current

Frequency	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.05	0.30	0.70	1.00

●Dimension table in next page.

Type numbering system (Example : 25V 220μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P	C	A	1	E	2	2	1	M	C	L	1	G	S

- 1–3: Type
- 4: Series name
- 5: Rated voltage (25V)
- 6–8: Rated capacitance (220μF)
- 9: Capacitance tolerance (±20%)
- 10–11: Configuration
- 12: Size code
- 13–14: Taping code

PCA

■Dimensions

Rated Voltage (V) (code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20℃ after 2 minutes)	Initial ESR (mΩ) (20℃/100kHz)	Low temp. ESR after Endurance (mΩ) (−40℃ /100kHz)	Rated Ripple (mArms) (125℃ /100kHz)	Part Number
25 (1E)	31	220	8×10	0.08	165	20	40	3900	PCA1E221MCL1GS
		270	8×12	0.08	202	19	38	4000	PCA1E271MCL1GS
		330	10×10	0.08	247	20	40	4600	PCA1E331MCL1GS
		470	10×12.7	0.08	352	15	30	5100	PCA1E471MCL1GS
35 (1V)	43	150	8×10	0.08	157	22	44	3900	PCA1V151MCL1GS
		220	8×12	0.08	231	21	42	3900	PCA1V221MCL1GS
		270	10×10	0.08	283	20	40	4500	PCA1V271MCL1GS
		330	10×12.7	0.08	346	16	32	5000	PCA1V331MCL1GS
50 (1H)	63	68	8×10	0.08	102	26	52	3600	PCA1H680MCL1GS
		120	△8×12	0.08	180	25	50	3700	PCA1H121MCL2GS
		120	10×10	0.08	180	25	50	4300	PCA1H121MCL1GS
		180	10×12.7	0.08	270	19	38	4600	PCA1H181MCL1GS
63 (1J)	79	47	8×10	0.08	88	28	56	3600	PCA1J470MCL1GS
		68	8×12	0.08	128	27	54	3700	PCA1J680MCL1GS
		82	10×10	0.08	154	28	56	4300	PCA1J820MCL1GS
		120	10×12.7	0.08	226	24	48	4600	PCA1J121MCL1GS
80 (1K)	**100**	**33**	**8×10**	**0.08**	**79**	**38**	**76**	**2300**	**PCA1K330MCL1GS**
		47	**8×12**	**0.08**	**112**	**35**	**70**	**2700**	**PCA1K470MCL1GS**
		56	**10×10**	**0.08**	**134**	**33**	**66**	**2500**	**PCA1K560MCL1GS**
		82	**10×12.7**	**0.08**	**196**	**28**	**56**	**3100**	**PCA1K820MCL1GS**

Blue : New product (as of October 2025)

No marked, [1] will be put at 12th digit of type numbering system.
△: In this case, [2] will be put at 12th digit of type numbering system.

- For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.