CONDUCTIVE POLYMER ALUMINUM SOLID ELECTROLYTIC CAPACITORS

nichicon

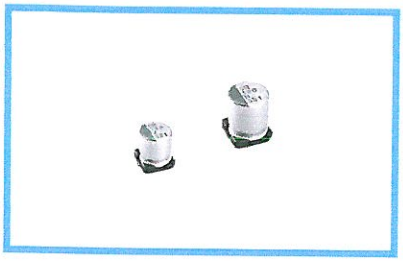
CR series

Chip Type, High Reliability

For SMD | High Ripple Current | Low Impedance | For High Frequency | Long Life | Anti-Solvent Feature

- High reliability, High voltage (to 80V).
- 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.
- Adapted to the RoHS directive (2011/65/EU).
- ESR after Endurance at -40°C.

CR ← High Capacitance Long Life Assurance CX

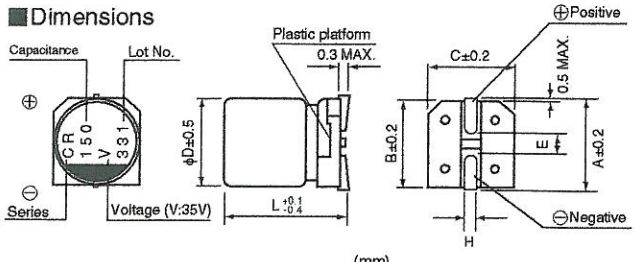


Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +125°C
Rated Voltage Range	16 to 80V
Rated Capacitance Range	22 to 1000μF
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 or 3(μA), whichever is greater.
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 the rated voltage is applied for 4000 hours at 125°C. 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	The specifications listed above shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C, 85% RH.
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 1000 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 and the terminal. 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.

Dimensions



(mm)

Size	φ8 x 7L	φ8 x 10L	φ8 x 12L	φ10 x 8L	φ10 x 10L	φ10x12.7L
φD	8.0	8.0	8.0	10.0	10.0	10.0
L	6.9	9.9	11.9	7.9	9.9	12.6
A	9.0	9.0	9.0	11.0	11.0	11.0
B	8.3	8.3	8.3	10.3	10.3	10.3
C	8.3	8.3	8.3	10.3	10.3	10.3
E	3.2	3.2	3.2	4.6	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	0.8 to 1.1	0.8 to 1.1

Voltage

V	16	20	25	35	50	63	80
Code	C	D	E	V	H	J	K

Type numbering system (Example : 35V 150μF)

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

- Taping code
- Size code
- Configuration
- Capacitance tolerance (±20%)
- Rated capacitance (150μF)
- Rated voltage (35V)
- Series name
- Type

※φ8 x 7L, φ8 x 10L, φ10 x 10L :
The vibration structure-resistant product is also available upon request, please ask for details.

● Dimension table in next page.

CR series

Standard Ratings

Rated Voltage (V)(code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size φD × L (mm)	tan δ	Initial ESR (mΩ) (20°C / 100kHz)	Low temp. ESR after Endurance (mΩ) (-40°C / 100kHz)	Rated Ripple (mArms) (125°C / 100kHz)	Part Number
16 (1C)	20	220	8 × 7	0.08	30	45	1500	PCR1C221MCL1GS
		470	▲ 8 × 10	0.08	17	26	3400	PCR1C471MCL6GS
		470	10 × 8	0.08	32	48	2200	PCR1C471MCL1GS
		560	8 × 12	0.08	16	24	3800	PCR1C561MCL1GS
		680	10 × 10	0.08	19	29	3200	PCR1C681MCL1GS
		1000	10 × 12.7	0.08	13	20	4300	PCR1C102MCL1GS
20 (1D)	25	150	8 × 7	0.08	39	59	1200	PCR1D151MCL1GS
		330	▲ 8 × 10	0.08	19	29	3300	PCR1D331MCL6GS
		330	10 × 8	0.08	33	50	2100	PCR1D331MCL1GS
		470	8 × 12	0.08	18	27	3500	PCR1D471MCL1GS
		560	10 × 10	0.08	20	30	3100	PCR1D561MCL1GS
		680	10 × 12.7	0.08	14	21	4200	PCR1D681MCL1GS
25 (1E)	31	100	8 × 7	0.08	41	62	1200	PCR1E101MCL1GS
		220	▲ 8 × 10	0.08	20	30	3200	PCR1E221MCL6GS
		220	10 × 8	0.08	33	50	2100	PCR1E221MCL1GS
		270	8 × 12	0.08	19	29	3300	PCR1E271MCL1GS
		330	10 × 10	0.08	20	30	3100	PCR1E331MCL1GS
		470	10 × 12.7	0.08	15	23	4100	PCR1E471MCL1GS
35 (1V)	43	68	8 × 7	0.08	44	66	1200	PCR1V680MCL1GS
		150	▲ 8 × 10	0.08	22	33	3100	PCR1V151MCL6GS
		150	10 × 8	0.08	33	50	2100	PCR1V151MCL1GS
		220	8 × 12	0.08	21	32	3300	PCR1V221MCL1GS
		270	10 × 10	0.08	20	30	3100	PCR1V271MCL1GS
		330	10 × 12.7	0.08	16	24	3900	PCR1V331MCL1GS
50 (1H)	63	39	8 × 7	0.08	45	68	1300	PCR1H390MCL1GS
		82	▲ 8 × 10	0.08	26	39	2900	PCR1H820MCL6GS
		82	10 × 8	0.08	42	63	1900	PCR1H820MCL1GS
		120	△ 8 × 12	0.08	25	38	2900	PCR1H121MCL2GS
		120	10 × 10	0.08	25	38	3000	PCR1H121MCL1GS
		180	10 × 12.7	0.08	19	29	3500	PCR1H181MCL1GS
63 (1J)	79	22	8 × 7	0.08	48	72	1100	PCR1J220MCL1GS
		39	8 × 10	0.08	28	42	2700	PCR1J390MCL1GS
		47	10 × 8	0.08	47	70	1800	PCR1J470MCL1GS
		56	8 × 12	0.08	27	41	2900	PCR1J560MCL1GS
		68	10 × 10	0.08	28	42	2800	PCR1J680MCL1GS
		100	10 × 12.7	0.08	24	36	3000	PCR1J101MCL1GS
80 (1K)	100	27	8 × 10	0.08	38	57	1400	PCR1K270MCL1GS
		39	8 × 12	0.08	35	53	1600	PCR1K390MCL1GS
		47	10 × 10	0.08	33	50	1700	PCR1K470MCL1GS
		68	10 × 12.7	0.08	28	42	2100	PCR1K680MCL1GS

Rated ripple current (mArms) at 125°C 100kHz

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.
▲ : In this case, [6] will be put at 12th digit of type numbering system.

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.

Mouser Electronics

Authorized Distributor

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Nichicon:

PCR1J120MCL1GS PCR1J6R8MCL1GS PCR2A120MCL1GS PCR1H390MCL4GS PCR1V680MCL4GS PCR1C121MCL1GS PCR1C680MCL1GS PCR1D101MCL1GS PCR1D560MCL1GS PCR2A5R6MCL1GS PCR1C221MCL4GS PCR1D151MCL4GS PCR1J220MCL4GS PCR1H220MCL1GS PCR2A220MCL1GS PCR1V470MCL1GS PCR2A180MCL1GS PCR2A330MCL1GS PCR0J272MCL1GS PCR1K120MCL1GS PCR1E101MCL4GS PCR1V270MCL1GS PCR1H120MCL1GS