nichicon

PCR

Chip Type, High Reliability

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

- 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.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- ESR after Endurance at -40°C.
- AEC-Q200 Qualified. Please contact us for details.

PCH
PCZ
High Temperature
PCM Long Life | PCR | High Capacitance Long Life Assurance PCX

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. ※
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	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 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. 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

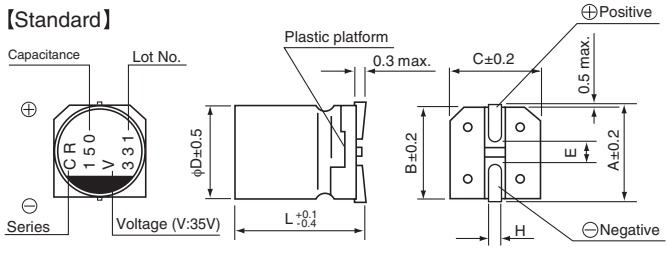
※1 ESR should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform.

※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.

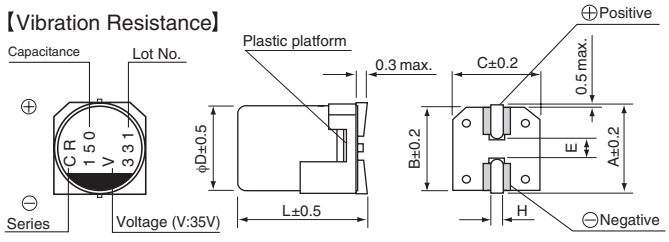
※3 Initial value : The value before test of examination of resistance to soldering.

Dimensions

【Standard】



【Vibration Resistance】



Aid electrode

●Dimension table in next page.

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

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

Configuration	Code
Standard	L
Vibration Resistance	Please ask for Part Number.

Standard

(mm)

Size	φ8×7L	φ8×10L	φ8×12L	φ10×8L	φ10×10L	φ10×12.7L
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

Vibration Resistance

(mm)

Size	φ8×10.5L	φ10×10.5L	φ10×13.2L
φD	8.0	10.0	10.0
L	10.0	10.0	12.7
A	9.0	11.0	11.0
B	8.3	10.3	10.3
C	8.3	10.3	10.3
E	3.1	4.6	4.6
H	1.1 to 1.5	1.1 to 1.5	1.1 to 1.5

Voltage

V	16	20	25	35	50	63	80
Code	C	D	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

※ φ8×10L(φ8×10.5L), φ10×10L(φ10×10.5L), φ10×12.7L(φ10×13.2L) :
The vibration structure-resistant product is also available upon request, please ask for details.
( ) : Size of the vibration structure-resistant product.

PCR

■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
16 (1C)	20	220	8×7	0.08	105	30	60	1500	PCR1C221MCL1GS
		470	▲8×10	0.08	225	17	34	3400	PCR1C471MCL6GS
		470	10×8	0.08	225	32	64	2200	PCR1C471MCL1GS
		560	8×12	0.08	268	16	32	3800	PCR1C561MCL1GS
		680	10×10	0.08	326	19	38	3200	PCR1C681MCL1GS
		1000	10×12.7	0.08	480	13	26	4300	PCR1C102MCL1GS
20 (1D)	25	150	8×7	0.08	90	39	78	1200	PCR1D151MCL1GS
		330	▲8×10	0.08	198	19	38	3300	PCR1D331MCL6GS
		330	10×8	0.08	198	33	66	2100	PCR1D331MCL1GS
		470	8×12	0.08	282	18	36	3500	PCR1D471MCL1GS
		560	10×10	0.08	336	20	40	3100	PCR1D561MCL1GS
		680	10×12.7	0.08	408	14	28	4200	PCR1D681MCL1GS
25 (1E)	31	100	8×7	0.08	75	41	82	1200	PCR1E101MCL1GS
		220	▲8×10	0.08	165	20	40	3200	PCR1E221MCL6GS
		220	10×8	0.08	165	33	66	2100	PCR1E221MCL1GS
		270	8×12	0.08	202	19	38	3300	PCR1E271MCL1GS
		330	10×10	0.08	247	20	40	3100	PCR1E331MCL1GS
		470	10×12.7	0.08	352	15	30	4100	PCR1E471MCL1GS
35 (1V)	43	68	8×7	0.08	71	44	88	1200	PCR1V680MCL1GS
		150	▲8×10	0.08	157	22	44	3100	PCR1V151MCL6GS
		150	10×8	0.08	157	33	66	2100	PCR1V151MCL1GS
		220	8×12	0.08	231	21	42	3300	PCR1V221MCL1GS
		270	10×10	0.08	283	20	40	3100	PCR1V271MCL1GS
		330	10×12.7	0.08	346	16	32	3900	PCR1V331MCL1GS
50 (1H)	63	39	8×7	0.08	58	45	90	1300	PCR1H390MCL1GS
		82	▲8×10	0.08	123	26	52	2900	PCR1H820MCL6GS
		82	10×8	0.08	123	42	84	1900	PCR1H820MCL1GS
		120	△8×12	0.08	180	25	50	2900	PCR1H121MCL2GS
		120	10×10	0.08	180	25	50	3000	PCR1H121MCL1GS
		180	10×12.7	0.08	270	19	38	3500	PCR1H181MCL1GS
63 (1J)	79	22	8×7	0.08	41	48	96	1100	PCR1J220MCL1GS
		39	8×10	0.08	73	28	56	2700	PCR1J390MCL1GS
		47	10×8	0.08	88	47	94	1800	PCR1J470MCL1GS
		56	8×12	0.08	105	27	54	2900	PCR1J560MCL1GS
		68	10×10	0.08	128	28	56	2800	PCR1J680MCL1GS
		100	10×12.7	0.08	189	24	48	3000	PCR1J101MCL1GS
80 (1K)	100	27	8×10	0.08	64	38	76	1400	PCR1K270MCL1GS
		39	8×12	0.08	93	35	70	1600	PCR1K390MCL1GS
		47	10×10	0.08	112	33	66	1700	PCR1K470MCL1GS
		68	10×12.7	0.08	163	28	56	2100	PCR1K680MCL1GS

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.

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

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