

CONDUCTIVE POLYMER ALUMINUM SOLID ELECTROLYTIC CAPACITORS

PCH Chip Type, Higher Capacitance
High Temperature Range



NEW

- High reliability, High voltage (to 63V).
- Low ESR, High ripple current.
- Long life of 4000 hours at 135°C.
- SMD type : Lead free reflow soldering condition at 260°C peak complete correspondence.
- Compliant to the RoHS directive (2011/65/EU).
- ESR after Endurance at -40°C.
- AEC-Q200 compliant. Please contact us for details.

PCH ← High Temperature → **PCR**

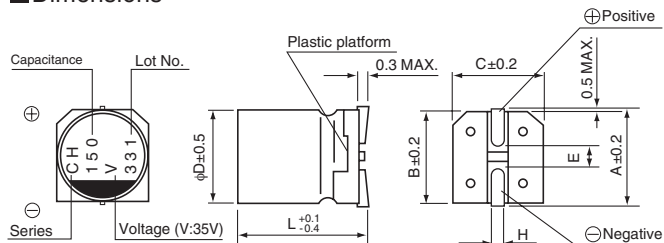


Specifications

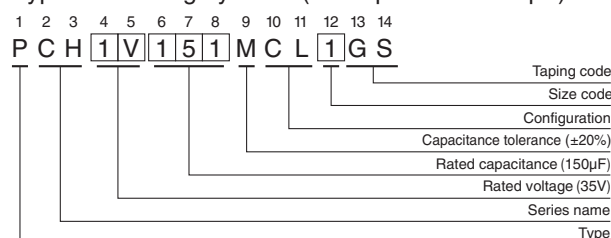
Item	Performance Characteristics								
Category Temperature Range	-55 to +135°C								
Rated Voltage Range	25 to 63V								
Rated Capacitance Range	22 to 470μF								
Capacitance Tolerance	±20% at 120Hz, 20°C								
Tangent of loss angle (tan δ)	Less than or equal to the specified value at 120Hz, 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 or 3(μA), whichever is greater.								
Temperature Characteristics (Max.Impedance Ratio)	Z+135°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 135°C. <table border="1" style="float: right; margin-top: 10px;"> <tr><td>Capacitance change</td><td>Within ± 20% of initial capacitance value (*3)</td></tr> <tr><td>tan δ</td><td>150% or less of the initial specified value</td></tr> <tr><td>ESR (*1)</td><td>200% or less of the initial specified value</td></tr> <tr><td>Leakage current (*2)</td><td>Less than or equal to the initial specified value</td></tr> </table>	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
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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 135°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. <table border="1" style="float: right; margin-top: 10px;"> <tr><td>Capacitance change</td><td>Within ± 20% of initial capacitance value (*3)</td></tr> <tr><td>tan δ</td><td>150% or less of the initial specified value</td></tr> <tr><td>ESR (*1)</td><td>200% or less of the initial specified value</td></tr> <tr><td>Leakage current (*2)</td><td>Less than or equal to the initial specified value</td></tr> </table>	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
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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. <table border="1" style="float: right; margin-top: 10px;"> <tr><td>Capacitance change</td><td>Within ± 10% of the initial capacitance value (*3)</td></tr> <tr><td>tan δ</td><td>130% or less than the initial specified value</td></tr> <tr><td>ESR (*1)</td><td>130% or less than the initial specified value</td></tr> <tr><td>Leakage current (*2)</td><td>Less than or equal to the initial specified value</td></tr> </table>	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
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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



Type numbering system (Example : 35V 150μF)



	(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

Voltage

V	25	35	50	63
Code	E	V	H	J

Frequency coefficient of rated ripple current

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

Design, Specifications are subject to change without notice.

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PCH

■ Dimensions

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 (mA rms) (135°C / 100kHz)	Part Number
25 (1E)	31	100	8 × 7	0.08	41	82	800	PCH1E101MCL1GS
		220	▲ 8 × 10	0.08	20	40	1800	PCH1E221MCL6GS
		220	10 × 8	0.08	33	66	1400	PCH1E221MCL1GS
		270	8 × 12	0.08	19	38	2100	PCH1E271MCL1GS
		330	10 × 10	0.08	20	40	2200	PCH1E331MCL1GS
		470	10 × 12.7	0.08	15	30	2000	PCH1E471MCL1GS
35 (1V)	43	68	8 × 7	0.08	44	88	700	PCH1V680MCL1GS
		150	▲ 8 × 10	0.08	22	44	1700	PCH1V151MCL6GS
		150	10 × 8	0.08	33	66	1300	PCH1V151MCL1GS
		220	8 × 12	0.08	21	42	1800	PCH1V221MCL1GS
		270	10 × 10	0.08	20	40	2200	PCH1V271MCL1GS
		330	10 × 12.7	0.08	16	32	1900	PCH1V331MCL1GS
50 (1H)	63	39	8 × 7	0.08	45	90	700	PCH1H390MCL1GS
		82	▲ 8 × 10	0.08	26	52	1600	PCH1H820MCL6GS
		82	10 × 8	0.08	42	84	1200	PCH1H820MCL1GS
		120	△ 8 × 12	0.08	25	50	1600	PCH1H121MCL2GS
		120	10 × 10	0.08	25	50	1700	PCH1H121MCL1GS
		180	10 × 12.7	0.08	19	38	1800	PCH1H181MCL1GS
63 (1J)	79	22	8 × 7	0.08	48	96	700	PCH1J220MCL1GS
		39	8 × 10	0.08	28	56	1500	PCH1J390MCL1GS
		47	10 × 8	0.08	47	94	1100	PCH1J470MCL1GS
		56	8 × 12	0.08	27	54	1700	PCH1J560MCL1GS
		68	10 × 10	0.08	28	56	1800	PCH1J680MCL1GS
		100	10 × 12.7	0.08	24	48	1600	PCH1J101MCL1GS

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.

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