



**THE DATASHEET OF
PCS1C390MCL1GS**

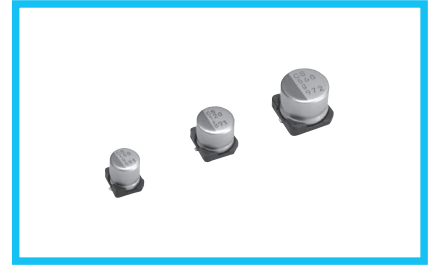




Chip Type, LongLife Assurance



- Load life of 5000 hours at 105°C.
- SMD type : Lead free reflow soldering condition at 260°C peak correspondence.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 Qualified. Please contact us for details.

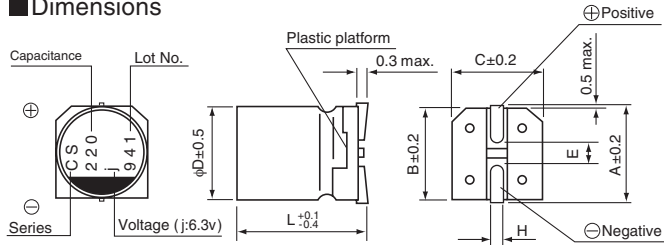


■ Specifications

| Item | Performance Characteristics | | | | | | | | | |
|---|--|--|--------------------|---|-------|---|-----------|---|-----------------------|---|
| Category Temperature Range | -55 to +105°C | | | | | | | | | |
| Rated Voltage Range | 4 to 16V | | | | | | | | | |
| Rated Capacitance Range | 22 to 560μF | | | | | | | | | |
| 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) | Less than or equal to the specified value . After 2 minutes' application of rated voltage at 20°C | | | | | | | | | |
| Temperature Characteristics (Max.Impedance Ratio) | $Z(+105^{\circ}\text{C}) / Z(+20^{\circ}\text{C}) \leq 1.25$ (100kHz) $Z(-55^{\circ}\text{C}) / Z(+20^{\circ}\text{C}) \leq 1.25$ | | | | | | | | | |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours at 105°C. | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>150% 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 ± 20% of the initial capacitance value (※ 3) | tan δ | 150% or less than the initial specified value | ESR (※ 1) | 150% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change | Within ± 20% of the initial capacitance value (※ 3) | | | | | | | | | |
| tan δ | 150% or less than the initial specified value | | | | | | | | | |
| ESR (※ 1) | 150% or less than the initial specified value | | | | | | | | | |
| Leakage current (※ 2) | Less than or equal to the initial specified value | | | | | | | | | |
| 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 60°C, 90% RH. | <table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (※ 3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (※ 1)</td><td>150% 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 ± 20% of the initial capacitance value (※ 3) | tan δ | 150% or less than the initial specified value | ESR (※ 1) | 150% or less than the initial specified value | Leakage current (※ 2) | Less than or equal to the initial specified value |
| Capacitance change | Within ± 20% of the initial capacitance value (※ 3) | | | | | | | | | |
| tan δ | 150% or less than the initial specified value | | | | | | | | | |
| ESR (※ 1) | 150% or less than 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 250°C or less, reflow soldering shall be two times maximum. In case peak temperature is 260°C or less, reflow soldering shall be once. Measurement for solder temperature profile shall be made at the capacitor top. | <table border="1"> <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 |
| 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.

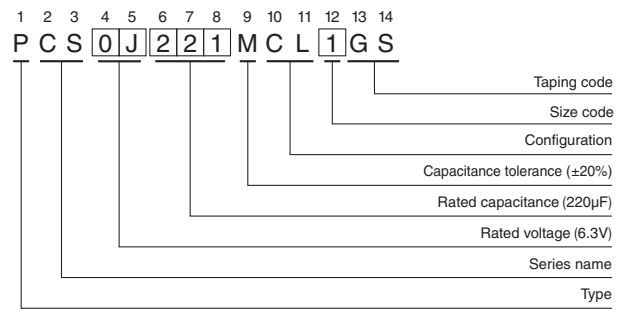
■ Dimensions



| | (mm) | | |
|------|------------|------------|------------|
| Size | φ5 × 6L | φ6.3 × 6L | φ8 × 7L |
| φD | 5.0 | 6.3 | 8.0 |
| L | 5.9 | 5.9 | 6.9 |
| A | 6.0 | 7.3 | 9.0 |
| B | 5.3 | 6.6 | 8.3 |
| C | 5.3 | 6.6 | 8.3 |
| E | 1.6 | 2.1 | 3.2 |
| H | 0.5 to 0.8 | 0.5 to 0.8 | 0.8 to 1.1 |

| Voltage | | 4 | 6.3 | 10 | 16 |
|---------|--|---|-----|----|----|
| V | | 4 | 6.3 | 10 | 16 |
| Code | | g | j | A | C |

Type numbering system (Example : 6.3V 220μF)



● 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.



■ Dimensions

| Rated Voltage (V) (code) | Surge Voltage (V) | Rated Capacitance (μF) | Case Size φD × L (mm) | tan δ | Leakage Current (μA) (at 20°C after 2 minutes) | ESR (mΩ) (20°C/100kHz) | Rated Ripple (mA _{rms}) (105°C/100kHz) | Part Number |
|-----------------------------|-------------------|------------------------|--------------------------|-------|---|---------------------------|---|----------------|
| 4 (0G) | 4.6 | 150 | 5 × 6 | 0.12 | 120 | 25 | 2200 | PCS0G151MCL1GS |
| | | 330 | 6.3 × 6 | 0.12 | 264 | 20 | 2800 | PCS0G331MCL1GS |
| | | 330 | ● 8 × 7 | 0.12 | 264 | 22 | 3200 | PCS0G331MCL9GS |
| | | 560 | 8 × 7 | 0.12 | 448 | 18 | 3600 | PCS0G561MCL1GS |
| 6.3 (0J) | 7.2 | 47 | 5 × 6 | 0.12 | 100 | 35 | 1600 | PCS0J470MCL1GS |
| | | 100 | 5 × 6 | 0.12 | 126 | 25 | 2400 | PCS0J101MCL1GS |
| | | 100 | ● 6.3 × 6 | 0.12 | 126 | 22 | 2800 | PCS0J101MCL9GS |
| | | 120 | ● 6.3 × 6 | 0.12 | 151 | 22 | 2800 | PCS0J121MCL9GS |
| | | 220 | 6.3 × 6 | 0.12 | 277 | 20 | 2800 | PCS0J221MCL1GS |
| | | 220 | ● 8 × 7 | 0.12 | 277 | 22 | 3200 | PCS0J221MCL9GS |
| | | 390 | 8 × 7 | 0.12 | 491 | 22 | 3200 | PCS0J391MCL1GS |
| 10 (1A) | 11.5 | 33 | 5 × 6 | 0.12 | 100 | 40 | 1300 | PCS1A330MCL1GS |
| | | 56 | ● 6.3 × 6 | 0.12 | 112 | 27 | 2300 | PCS1A560MCL9GS |
| | | 68 | 5 × 6 | 0.12 | 136 | 30 | 2100 | PCS1A680MCL1GS |
| | | 120 | 6.3 × 6 | 0.12 | 240 | 27 | 2300 | PCS1A121MCL1GS |
| | | 150 | ● 8 × 7 | 0.12 | 300 | 30 | 2600 | PCS1A151MCL9GS |
| | | 270 | 8 × 7 | 0.12 | 540 | 22 | 3200 | PCS1A271MCL1GS |
| 16 (1C) | 18.4 | 22 | 5 × 6 | 0.12 | 100 | 45 | 1100 | PCS1C220MCL1GS |
| | | 39 | 5 × 6 | 0.12 | 125 | 35 | 2000 | PCS1C390MCL1GS |
| | | 39 | ● 6.3 × 6 | 0.12 | 125 | 30 | 2200 | PCS1C390MCL9GS |
| | | 68 | 6.3 × 6 | 0.12 | 218 | 30 | 2200 | PCS1C680MCL1GS |
| | | 82 | ● 8 × 7 | 0.12 | 262 | 28 | 2800 | PCS1C820MCL9GS |
| | | 120 | 8 × 7 | 0.12 | 384 | 28 | 2800 | PCS1C121MCL1GS |

No marked, [1] will be put at 12th digit of type numbering system.

● : In this case, [9] 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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