

## PCJ

Chip Type, Low ESR,  
Higher Capacitance



For SMD



High Ripple  
Current



Low Impedance

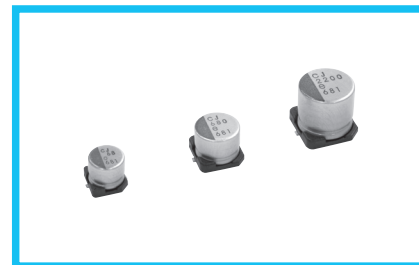
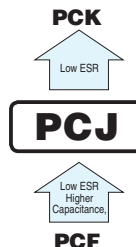


For High  
Frequency



Anti-Solvent  
Feature

- Low ESR, Higher Capacitance, High ripple current.
- Load life of 2000 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 compliant. Please contact us for details.



## Specifications

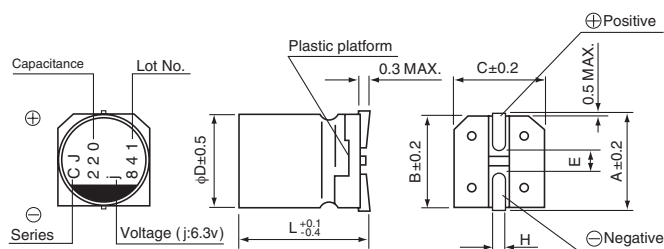
| Item                                                 | Performance Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                     |       |                                               |           |                                               |                       |                                                   |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------|-------|-----------------------------------------------|-----------|-----------------------------------------------|-----------------------|---------------------------------------------------|
| Category Temperature Range                           | -55 to +105°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                     |       |                                               |           |                                               |                       |                                                   |
| Rated Voltage Range                                  | 2.5 to 16V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                     |       |                                               |           |                                               |                       |                                                   |
| Rated Capacitance Range                              | 33 to 2700μF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                     |       |                                               |           |                                               |                       |                                                   |
| 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<br>(Max.Impedance Ratio) | Z+105°C / Z+20°C ≤ 1.25 (100kHz)<br>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 2000 hours at 105°C.                                                                                                                                                                                                                                                                                                                                                                                                                    | <table><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<br>(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><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<br>Soldering Heat                      | After soldering the capacitor under the soldering conditions prescribed here, the capacitor shall meet the specifications listed at right.<br>Pre-heating shall be done at 150 to 200°C and for 60 to 180 sec.<br>The duration for over +230°C temperature at capacitor surface shall not exceed 60 seconds.<br>In case peak temperature is 250°C or less, reflow soldering shall be two times maximum.<br>In case peak temperature is 260°C or less, reflow soldering shall be once.<br>Measurement for solder temperature profile shall be made at the capacitor top. | <table><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.

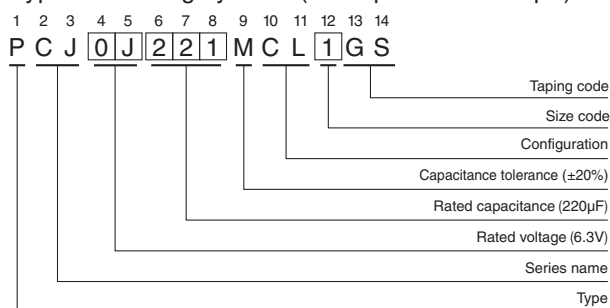
※ 2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.

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

## Dimensions



## Type numbering system (Example : 6.3V 220μF)



| Size | φ5 × 6L    | φ6.3 × 6L  | φ6.3 × 8L  | φ8 × 7L    | φ8 × 8L    | φ8 × 10L   | φ8 × 12L   | φ10 × 8L   | φ10 × 10L  | φ10 × 12.7L |
|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| φD   | 5.0        | 6.3        | 6.3        | 8.0        | 8.0        | 8.0        | 8.0        | 10.0       | 10.0       | 10.0        |
| L    | 5.9        | 5.9        | 7.9        | 6.9        | 7.9        | 9.9        | 11.9       | 7.9        | 9.9        | 12.6        |
| A    | 6.0        | 7.3        | 7.3        | 9.0        | 9.0        | 9.0        | 9.0        | 11.0       | 11.0       | 11.0        |
| B    | 5.3        | 6.6        | 6.6        | 8.3        | 8.3        | 8.3        | 8.3        | 10.3       | 10.3       | 10.3        |
| C    | 5.3        | 6.6        | 6.6        | 8.3        | 8.3        | 8.3        | 8.3        | 10.3       | 10.3       | 10.3        |
| E    | 1.6        | 2.1        | 2.1        | 3.2        | 3.2        | 3.2        | 3.2        | 4.6        | 4.6        | 4.6         |
| H    | 0.5 to 0.8 | 0.5 to 0.8 | 0.5 to 0.8 | 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 | 0.8 to 1.1  |

## Voltage

|      |     |   |     |    |    |
|------|-----|---|-----|----|----|
| V    | 2.5 | 4 | 6.3 | 10 | 16 |
| Code | e   | g | j   | A  | C  |

## 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.

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## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Surge Voltage<br>(V) | Rated Capacitance<br>(μF) | Case Size<br>φD × L (mm) | tan δ | Leakage Current<br>(μA)<br>(at 20°C after<br>2 minutes) | ESR<br>(mΩ)<br>(at 100kHz 20°C) | Rated Ripple<br>(mA <sub>rms</sub> )<br>(105°C/100kHz) | Part Number    |
|--------------------------------|----------------------|---------------------------|--------------------------|-------|---------------------------------------------------------|---------------------------------|--------------------------------------------------------|----------------|
| 2.5<br>(0E)                    | 2.8                  | 180                       | 5 × 6                    | 0.12  | 90                                                      | 21                              | 2670                                                   | PCJ0E181MCL1GS |
|                                |                      | 390                       | 6.3 × 6                  | 0.12  | 195                                                     | 15                              | 3400                                                   | PCJ0E391MCL1GS |
|                                |                      | 470                       | 6.3 × 8                  | 0.12  | 235                                                     | 13                              | 3600                                                   | PCJ0E471MCL1GS |
|                                |                      | 560                       | ■ 6.3 × 8                | 0.12  | 280                                                     | 13                              | 3600                                                   | PCJ0E561MCL4GS |
|                                |                      | 560                       | 8 × 7                    | 0.12  | 280                                                     | 13                              | 4100                                                   | PCJ0E561MCL1GS |
|                                |                      | 680                       | 8 × 7                    | 0.12  | 340                                                     | 13                              | 4100                                                   | PCJ0E681MCL1GS |
|                                |                      | 820                       | ▲ 8 × 8                  | 0.12  | 410                                                     | 12                              | 4260                                                   | PCJ0E821MCL6GS |
|                                |                      | 820                       | 8 × 12                   | 0.12  | 410                                                     | 9                               | 5400                                                   | PCJ0E821MCL1GS |
|                                |                      | 1000                      | 8 × 8                    | 0.12  | 500                                                     | 12                              | 4260                                                   | PCJ0E102MCL1GS |
|                                |                      | 1200                      | 10 × 8                   | 0.12  | 600                                                     | 13                              | 4800                                                   | PCJ0E122MCL1GS |
|                                |                      | 1500                      | ▲ 8 × 10                 | 0.12  | 750                                                     | 10                              | 5220                                                   | PCJ0E152MCL6GS |
|                                |                      | 1500                      | 8 × 12                   | 0.12  | 750                                                     | 9                               | 5400                                                   | PCJ0E152MCL1GS |
|                                |                      | 2200                      | 10 × 10                  | 0.12  | 1100                                                    | 10                              | 5500                                                   | PCJ0E222MCL1GS |
|                                |                      | 2700                      | 10 × 12.7                | 0.12  | 1350                                                    | 9                               | 5800                                                   | PCJ0E272MCL1GS |
| 4<br>(0G)                      | 4.6                  | 100                       | 5 × 6                    | 0.12  | 80                                                      | 22                              | 2610                                                   | PCJ0G101MCL1GS |
|                                |                      | 150                       | 5 × 6                    | 0.12  | 120                                                     | 22                              | 2610                                                   | PCJ0G151MCL1GS |
|                                |                      | 270                       | 6.3 × 6                  | 0.12  | 216                                                     | 15                              | 3200                                                   | PCJ0G271MCL1GS |
|                                |                      | 330                       | 6.3 × 6                  | 0.12  | 264                                                     | 15                              | 3300                                                   | PCJ0G331MCL1GS |
|                                |                      | 390                       | 6.3 × 8                  | 0.12  | 312                                                     | 14                              | 3470                                                   | PCJ0G391MCL1GS |
|                                |                      | 470                       | 8 × 7                    | 0.12  | 376                                                     | 14                              | 3950                                                   | PCJ0G471MCL1GS |
|                                |                      | 560                       | 8 × 7                    | 0.12  | 448                                                     | 14                              | 4000                                                   | PCJ0G561MCL1GS |
|                                |                      | 560                       | ● 8 × 12                 | 0.12  | 448                                                     | 9                               | 5200                                                   | PCJ0G561MCL9GS |
|                                |                      | 680                       | 8 × 8                    | 0.12  | 544                                                     | 13                              | 3950                                                   | PCJ0G681MCL1GS |
|                                |                      | 1000                      | ■ 8 × 10                 | 0.12  | 800                                                     | 10                              | 5220                                                   | PCJ0G102MCL4GS |
|                                |                      | 1000                      | 10 × 8                   | 0.12  | 800                                                     | 13                              | 4300                                                   | PCJ0G102MCL1GS |
|                                |                      | 1200                      | 8 × 12                   | 0.12  | 960                                                     | 9                               | 5400                                                   | PCJ0G122MCL1GS |
|                                |                      | 1200                      | ▲ 10 × 10                | 0.12  | 960                                                     | 10                              | 5500                                                   | PCJ0G122MCL6GS |
|                                |                      | 1500                      | ■ 8 × 12                 | 0.12  | 1200                                                    | 9                               | 5200                                                   | PCJ0G152MCL4GS |
|                                |                      | 1500                      | 10 × 10                  | 0.12  | 1200                                                    | 10                              | 5500                                                   | PCJ0G152MCL1GS |
|                                |                      | 1800                      | 10 × 10                  | 0.12  | 1440                                                    | 10                              | 5500                                                   | PCJ0G182MCL1GS |
|                                |                      | 1800                      | ● 10 × 12.7              | 0.12  | 1440                                                    | 9                               | 5600                                                   | PCJ0G182MCL9GS |
|                                |                      | 2200                      | 10 × 12.7                | 0.12  | 1760                                                    | 9                               | 5700                                                   | PCJ0G222MCL1GS |
| 6.3<br>(0J)                    | 7.2                  | 100                       | 5 × 6                    | 0.12  | 126                                                     | 24                              | 2500                                                   | PCJ0J101MCL1GS |
|                                |                      | 120                       | 5 × 6                    | 0.12  | 151                                                     | 24                              | 2500                                                   | PCJ0J121MCL1GS |
|                                |                      | 220                       | 6.3 × 6                  | 0.12  | 277                                                     | 15                              | 3200                                                   | PCJ0J221MCL1GS |
|                                |                      | 270                       | 6.3 × 8                  | 0.12  | 340                                                     | 14                              | 3470                                                   | PCJ0J271MCL1GS |
|                                |                      | 330                       | ■ 6.3 × 8                | 0.12  | 416                                                     | 14                              | 3470                                                   | PCJ0J331MCL4GS |
|                                |                      | 330                       | 8 × 7                    | 0.12  | 416                                                     | 14                              | 3950                                                   | PCJ0J331MCL1GS |
|                                |                      | 390                       | 8 × 7                    | 0.12  | 491                                                     | 14                              | 3950                                                   | PCJ0J391MCL1GS |
|                                |                      | 470                       | 8 × 8                    | 0.12  | 592                                                     | 13                              | 3950                                                   | PCJ0J471MCL1GS |
|                                |                      | 820                       | ▲ 8 × 10                 | 0.12  | 1033                                                    | 12                              | 4770                                                   | PCJ0J821MCL6GS |
|                                |                      | 820                       | ■ 8 × 12                 | 0.12  | 1033                                                    | 10                              | 5150                                                   | PCJ0J821MCL4GS |
|                                |                      | 820                       | 10 × 8                   | 0.12  | 1033                                                    | 13                              | 4500                                                   | PCJ0J821MCL1GS |
|                                |                      | 1200                      | 10 × 10                  | 0.12  | 1512                                                    | 12                              | 5025                                                   | PCJ0J122MCL1GS |
|                                |                      | 1500                      | 10 × 10                  | 0.12  | 1890                                                    | 12                              | 5025                                                   | PCJ0J152MCL1GS |
|                                |                      | 1500                      | ● 10 × 12.7              | 0.12  | 1890                                                    | 10                              | 5500                                                   | PCJ0J152MCL9GS |
|                                |                      | 1800                      | 10 × 12.7                | 0.12  | 2268                                                    | 11                              | 5200                                                   | PCJ0J182MCL1GS |
| 10<br>(1A)                     | 11.5                 | 47                        | 5 × 6                    | 0.12  | 94                                                      | 28                              | 2310                                                   | PCJ1A470MCL1GS |
|                                |                      | 56                        | 5 × 6                    | 0.12  | 112                                                     | 28                              | 2310                                                   | PCJ1A560MCL1GS |
|                                |                      | 68                        | 5 × 6                    | 0.12  | 136                                                     | 28                              | 2310                                                   | PCJ1A680MCL1GS |
|                                |                      | 120                       | 6.3 × 6                  | 0.12  | 240                                                     | 25                              | 2530                                                   | PCJ1A121MCL1GS |
|                                |                      | 150                       | 6.3 × 8                  | 0.12  | 300                                                     | 21                              | 2880                                                   | PCJ1A151MCL1GS |
|                                |                      | 220                       | 8 × 7                    | 0.12  | 440                                                     | 21                              | 3220                                                   | PCJ1A221MCL1GS |
|                                |                      | 270                       | 8 × 7                    | 0.12  | 540                                                     | 21                              | 3220                                                   | PCJ1A271MCL1GS |
|                                |                      | 330                       | 8 × 8                    | 0.12  | 660                                                     | 19                              | 3390                                                   | PCJ1A331MCL1GS |
|                                |                      | 390                       | 8 × 10                   | 0.12  | 780                                                     | 17                              | 4000                                                   | PCJ1A391MCL1GS |
|                                |                      | 470                       | 10 × 8                   | 0.12  | 940                                                     | 19                              | 3800                                                   | PCJ1A471MCL1GS |
| 16<br>(1C)                     | 18.4                 | 680                       | 10 × 10                  | 0.12  | 1360                                                    | 13                              | 4820                                                   | PCJ1A681MCL1GS |
|                                |                      | 33                        | 5 × 6                    | 0.12  | 105                                                     | 35                              | 2070                                                   | PCJ1C330MCL1GS |
|                                |                      | 39                        | 5 × 6                    | 0.12  | 125                                                     | 35                              | 2070                                                   | PCJ1C390MCL1GS |
|                                |                      | 68                        | 6.3 × 6                  | 0.12  | 217                                                     | 28                              | 2390                                                   | PCJ1C680MCL1GS |
|                                |                      | 82                        | 6.3 × 8                  | 0.12  | 262                                                     | 24                              | 2700                                                   | PCJ1C820MCL1GS |
|                                |                      | 100                       | ■ 6.3 × 8                | 0.12  | 320                                                     | 24                              | 2700                                                   | PCJ1C101MCL4GS |
|                                |                      | 100                       | 8 × 7                    | 0.12  | 320                                                     | 24                              | 3010                                                   | PCJ1C101MCL1GS |
|                                |                      | 120                       | 8 × 7                    | 0.12  | 384                                                     | 24                              | 3010                                                   | PCJ1C121MCL1GS |
|                                |                      | 150                       | 8 × 8                    | 0.12  | 480                                                     | 22                              | 3150                                                   | PCJ1C151MCL1GS |
|                                |                      | 180                       | 8 × 10                   | 0.12  | 576                                                     | 18                              | 3890                                                   | PCJ1C181MCL1GS |
|                                |                      | 220                       | ■ 8 × 10                 | 0.12  | 704                                                     | 18                              | 3890                                                   | PCJ1C221MCL4GS |
|                                |                      | 220                       | 10 × 8                   | 0.12  | 704                                                     | 22                              | 3450                                                   | PCJ1C221MCL1GS |
|                                |                      | 270                       | 8 × 12                   | 0.12  | 864                                                     | 16                              | 4070                                                   | PCJ1C271MCL1GS |
|                                |                      | 330                       | 10 × 10                  | 0.12  | 1056                                                    | 16                              | 4350                                                   | PCJ1C331MCL1GS |

- Taping specifications are given in page 20.
- Recommended land size, soldering by reflow are given in page 16, 17.
- Please refer to page 3 for the minimum order quantity.

No marked, [1] will be put at 12th digit of type numbering system.  
 ■ : In this case, [4] will be put at 12th digit of type numbering system.  
 ▲ : In this case, [6] will be put at 12th digit of type numbering system.  
 ● : In this case, [9] will be put at 12th digit of type numbering system.

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