

# Multilayer Ceramic Chip Capacitors

Commercial Grade

Three-terminal Feed-through Type

## CKD Series

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|              |                 |                          |
|--------------|-----------------|--------------------------|
| <b>Type:</b> | <b>CKD710JB</b> | <b>1005 [0402 inch]*</b> |
|              | <b>CKD610JB</b> | <b>1608 [0603 inch]*</b> |
|              | <b>CKD61BJB</b> | <b>1608 [0603 inch]*</b> |

\* Dimensions Code JIS[EIA]

○ All specifications are subject to change without notice.

○ Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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# Multilayer Ceramic Chip Capacitors

Commercial Grade

Three-terminal Feed-through Type

Conformity to RoHS Directive  
Lead-free Compatible

## Overview of CKD Series

### FEATURES

- Small capacitors featuring low ESL and high capacitance that realize low impedance characteristics.
- Effective for suppressing noise or voltage fluctuations in power circuits.
- For large current (Up to 2A) applications.

### APPLICATIONS

For power lines of high-speed, large-current circuits of telecommunication terminal devices including smartphones, audio-visual equipment, and information equipment.

### PART NUMBER IDENTIFICATION

| CKD         |                                       | 710JB         |               | 0G  |             | 435               |           | M         |           | 045  |               | B    |       |                   | A |
|-------------|---------------------------------------|---------------|---------------|-----|-------------|-------------------|-----------|-----------|-----------|------|---------------|------|-------|-------------------|---|
| Series name | L x W dimensions - GND terminal width |               | Rated voltage |     | Capacitance |                   | Tolerance |           | Thickness |      | Packing style |      |       | TDK internal code |   |
|             | Code                                  | mm            | Code          | V   | Code        | pF                |           |           | Code      | mm   | Code          | Reel | Pitch |                   |   |
|             | 710JB                                 | 1.0×0.5 - 0.3 | 0G            | 4   | 105         | 1,000,000 (1.0μF) | M         | ±20%      | 030       | 0.3  | A             | ø178 | 4mm   |                   |   |
|             | 610JB                                 | 1.6×0.8 - 0.4 | 0J            | 6.3 |             |                   | S         | +50%/−20% | 045       | 0.45 | B             | ø178 | 2mm   |                   |   |
|             | 61BJB                                 | 1.6×0.8 - 0.8 |               |     |             |                   |           |           | 060       | 0.6  | D             | ø330 | 4mm   |                   |   |
|             |                                       |               |               |     |             |                   |           |           |           |      | E             | ø330 | 2mm   |                   |   |

### PACKAGING STYLE AND SPECIFICATIONS

| Type     | Package quantity (piece/reel) |        | Single weight (g) |
|----------|-------------------------------|--------|-------------------|
|          | ø178                          | ø330   |                   |
| CKD710JB | 10,000                        | 50,000 | 0.0008*           |
| CKD610JB | 4,000                         | 10,000 | 0.0038            |
| CKD61BJB | 4,000                         | 10,000 | 0.0038            |

\* In the case of CKD710JB0G435M, the weight is 0.0015g.

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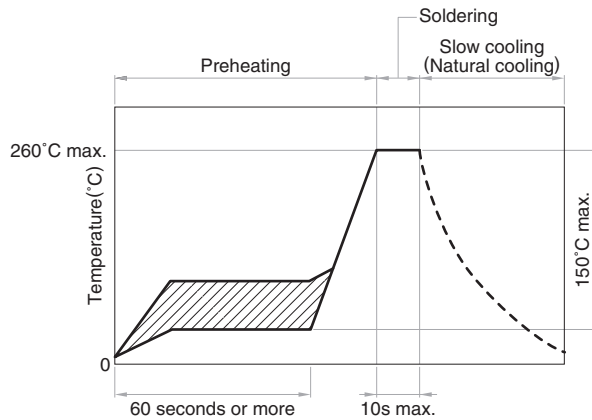
○ Please contact our Sales office when your application is considered the following:  
The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

○ All specifications are subject to change without notice.

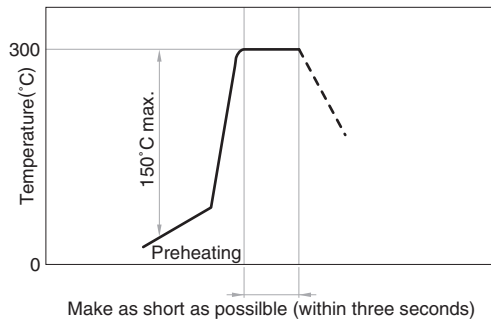
# Overview of CKD Series

## RECOMMENDED SOLDERING CONDITION

### REFLOW SOLDERING



### HAND SOLDERING

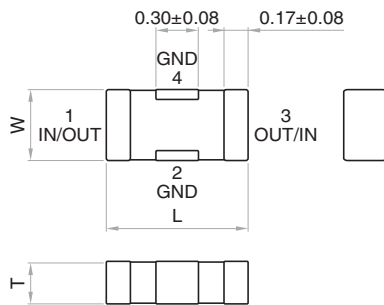


## PRECAUTIONS FOR USE

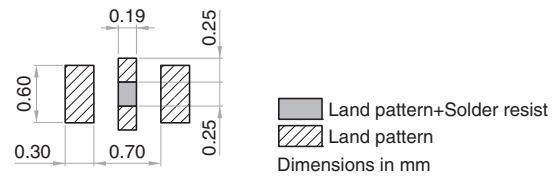
- Before soldering, be sure to preheat components. The  $\Delta T$  preheating temperature must be 150°C max. with attention paid to thermal shock.
- Natural cooling of components in the air is recommended. On the other hand, when dipping them in a solvent for purposes, such as cleaning, make sure that the temperature difference ( $\Delta T$ ) is 100°C.
- When performing hand soldering for circuit modification, apply the soldering iron to the copper foil area of the printed circuit board for 3 seconds or less. The temperature of the iron tip should not exceed 300°C.
- Use a wrist band to discharge static electricity in your body through the grounding wire.
- When incorporating the printed circuit board on which this product is mounted into a frame, etc., do not apply stress to the product through local bending of the board by tightening of screws, etc.

# CKD Series CKD710JB Type

## SHAPES AND DIMENSIONS



## RECOMMENDED LAND PATTERN



| Part No.            | L         | W         | T         |
|---------------------|-----------|-----------|-----------|
| CKD710JB0J474M030□A | 1.00±0.05 | 0.55±0.05 | 0.30±0.05 |
| CKD710JB0J474S030□A | 1.00±0.05 | 0.55±0.05 | 0.30±0.05 |
| CKD710JB0G105M030□A | 1.00±0.05 | 0.55±0.05 | 0.30±0.05 |
| CKD710JB0G105S030□A | 1.00±0.05 | 0.55±0.05 | 0.30±0.05 |
| CKD710JB0G435M045□A | 1.05±0.05 | 0.65±0.05 | 0.45±0.05 |

\* Make sure to connect the GND terminal of this product and the GND of the mounting circuit board by using through holes so that the distance between them is the shortest.

## ELECTRICAL CHARACTERISTICS

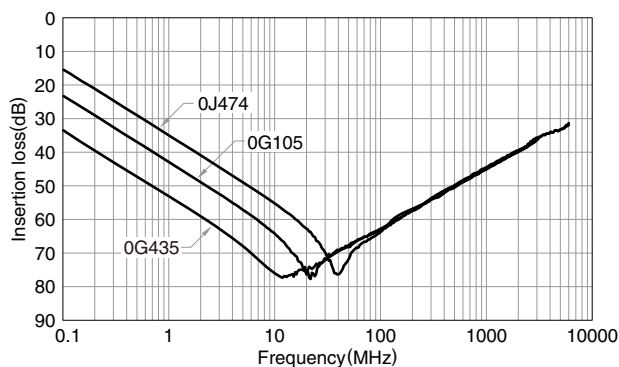
### CHARACTERISTICS SPECIFICATION TABLE

| Part No.            | Capacitance (μF) | Tolerance (%) | Rated voltage Edc (V) | Rated current Idc (A) | Operating temperature range (°C) |
|---------------------|------------------|---------------|-----------------------|-----------------------|----------------------------------|
| CKD710JB0J474M030□A | 0.47             | ±20           | 6.3                   | 2                     | -55 to +105                      |
| CKD710JB0J474S030□A | 0.47             | +50/-20       | 6.3                   | 2                     | -55 to +105                      |
| CKD710JB0G105M030□A | 1.0              | ±20           | 4                     | 2                     | -55 to +105                      |
| CKD710JB0G105S030□A | 1.0              | +50/-20       | 4                     | 2                     | -55 to +105                      |
| CKD710JB0G435M030□A | 4.3              | ±20           | 4                     | 2                     | -55 to +85                       |

\* □: Please specify packing style code, B (ø178 reel 2mm-pitch) or E (ø330 reel 2mm-pitch).

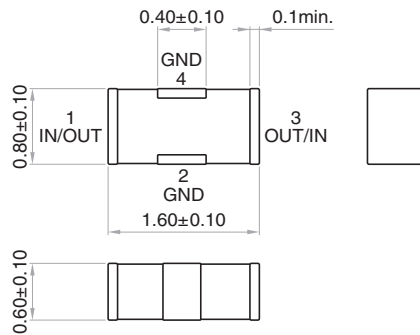
## ELECTRICAL CHARACTERISTICS GRAPH (EXAMPLE)

### INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

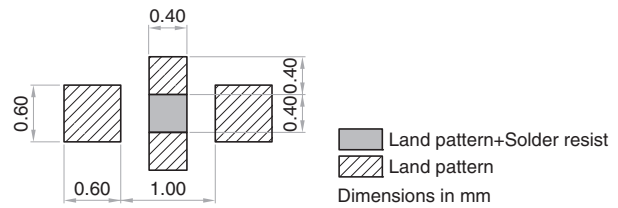


# CKD Series CKD610JB Type

## SHAPES AND DIMENSIONS



## RECOMMENDED LAND PATTERN



\* Make sure to connect the GND terminal of this product and the GND of the mounting circuit board by using through holes so that the distance between them is the shortest.

## ELECTRICAL CHARACTERISTICS

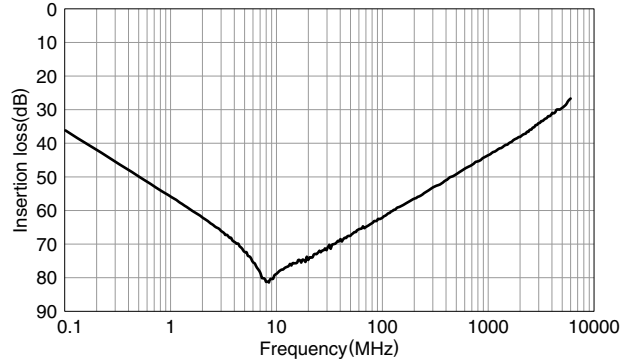
### CHARACTERISTICS SPECIFICATION TABLE

| Part No.            | Capacitance (μF) | Tolerance (%) | Rated voltage Edc (V) | Rated current Idc (A) | Operating temperature range (°C) |
|---------------------|------------------|---------------|-----------------------|-----------------------|----------------------------------|
| CKD610JB0J475M060□A | 4.7              | ±20           | 6.3                   | 2                     | -55 to +85                       |
| CKD610JB0J475S060□A | 4.7              | +50/-20       | 6.3                   | 2                     | -55 to +85                       |

\* □: Please specify packing style code, A (ø178 reel 4mm-pitch) or D (ø330 reel 4mm-pitch).

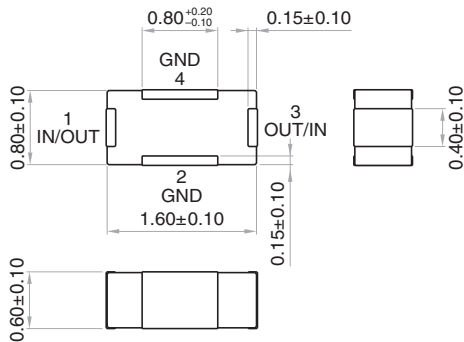
## ELECTRICAL CHARACTERISTICS GRAPH (EXAMPLE)

### INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

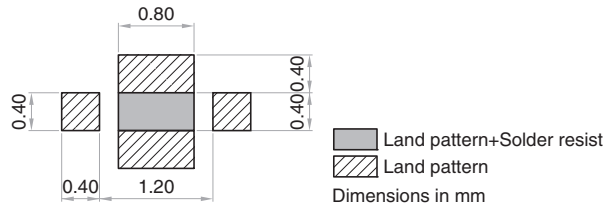


# CKD Series CKD61BJB Type

## SHAPES AND DIMENSIONS



## RECOMMENDED LAND PATTERN



\* Make sure to connect the GND terminal of this product and the GND of the mounting circuit board by using through holes so that the distance between them is the shortest.

## ELECTRICAL CHARACTERISTICS

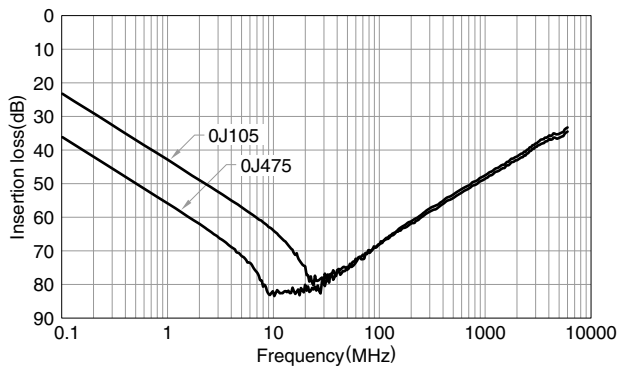
### CHARACTERISTICS SPECIFICATION TABLE

| Part No.            | Capacitance (μF) | Tolerance (%) | Rated voltage Edc (V) | Rated current Idc (A) | Operating temperature range (°C) |
|---------------------|------------------|---------------|-----------------------|-----------------------|----------------------------------|
| CKD61BJB0J105M060□A | 1.0              | ±20           | 6.3                   | 2                     | -55 to +105                      |
| CKD61BJB0J105S060□A | 1.0              | +50/-20       | 6.3                   | 2                     | -55 to +105                      |
| CKD61BJB0J475M060□A | 4.7              | ±20           | 6.3                   | 2                     | -55 to +85                       |
| CKD61BJB0J475S060□A | 4.7              | +50/-20       | 6.3                   | 2                     | -55 to +85                       |

\* □: Please specify packing style code, A (ø178 reel 4mm-pitch) or D (ø330 reel 4mm-pitch).

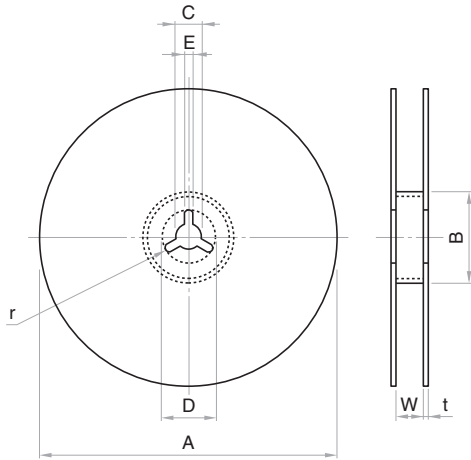
## ELECTRICAL CHARACTERISTICS GRAPH (EXAMPLE)

### INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



# CKD Series    Packing Style

## REEL DIMENSIONS

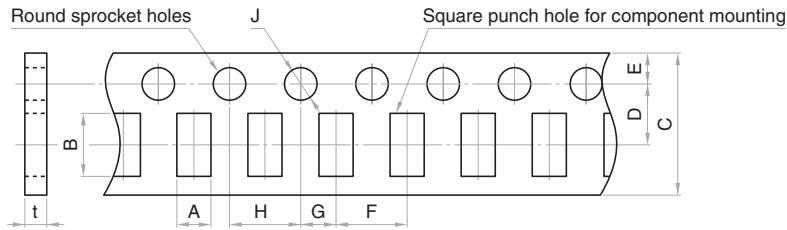


Dimensions in mm

| Reel | A                    | B        | C       | D       | E       | W        | t        | r   |
|------|----------------------|----------|---------|---------|---------|----------|----------|-----|
| ø178 | ø178±2.0             | ø60±2.0  | ø13±0.5 | ø21±0.8 | 2.0±0.5 | 9.0±0.3  | 2.0±0.05 | 1.0 |
| ø330 | ø382 max.(ø330 nom.) | ø50 min. | ø13±0.5 | ø21±0.8 | 2.0±0.5 | 10.0±1.5 | 2.0±0.05 | 1.0 |

## TAPE DIMENSIONS

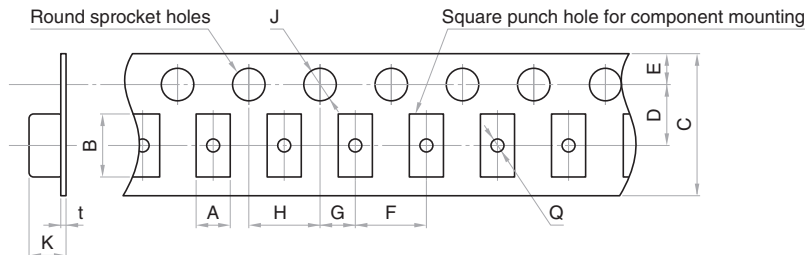
Paper tape(Apply to the product less than 1.0 mm thick)



Dimensions in mm

| Type   | A         | B         | C       | D        | E        | F       | G        | H       | J           | t        |
|--------|-----------|-----------|---------|----------|----------|---------|----------|---------|-------------|----------|
| CKD710 | 0.62 typ. | 1.12 typ. | 8.0±0.3 | 3.5±0.05 | 1.75±0.1 | 2.0±0.1 | 2.0±0.05 | 4.0±0.1 | ø1.5+0.1/-0 | 1.1 max. |
| CKD610 | 1.10 typ. | 1.90 typ. | 8.0±0.3 | 3.5±0.05 | 1.75±0.1 | 4.0±0.1 | 2.0±0.05 | 4.0±0.1 | ø1.5+0.1/-0 | 1.1 max. |
| CKD61B |           |           |         |          |          |         |          |         |             |          |

## Plastic tape



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|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| <a href="#"><u>CKD110JB1E220S</u></a> | <a href="#"><u>CKD110JB1E470S</u></a> | <a href="#"><u>CKD110JB1E101S</u></a> | <a href="#"><u>CKD110JB1E221S</u></a> | <a href="#"><u>CKD110JB1E471S</u></a> |
| <a href="#"><u>CKD110JB1E102S</u></a> | <a href="#"><u>CKD110JB1E222S</u></a> | <a href="#"><u>CKD110JB1E472S</u></a> | <a href="#"><u>CKD110JB1E103S</u></a> | <a href="#"><u>CKD110JB1E223S</u></a> |
| <a href="#"><u>CKD110JB1E473S</u></a> | <a href="#"><u>CKD110JB1E104S</u></a> | <a href="#"><u>CKD510JB1H220S</u></a> | <a href="#"><u>CKD510JB1H470S</u></a> | <a href="#"><u>CKD510JB1H101S</u></a> |
| <a href="#"><u>CKD510JB1H221S</u></a> | <a href="#"><u>CKD510JB1H471S</u></a> | <a href="#"><u>CKD510JB1H102S</u></a> | <a href="#"><u>CKD510JB1H222S</u></a> | <a href="#"><u>CKD510JB1H472S</u></a> |
| <a href="#"><u>CKD510JB1E103S</u></a> | <a href="#"><u>CKD510JB1E223S</u></a> | <a href="#"><u>CKD510JB1E473S</u></a> | <a href="#"><u>CKD510JB1E104S</u></a> | <a href="#"><u>CKD310JB1C104S</u></a> |
| <a href="#"><u>CKD310JB1C224S</u></a> | <a href="#"><u>CKD310JB1C474S</u></a> | <a href="#"><u>CKD510JB1A105S</u></a> | <a href="#"><u>CKD61BJB0J474S</u></a> | <a href="#"><u>CKD610JB0J105S</u></a> |
| <a href="#"><u>CKD610JB0J225S</u></a> | <a href="#"><u>CKD310JB1C105S</u></a> | <a href="#"><u>CKD310JB0J226S</u></a> | <a href="#"><u>CKD61BJB0J105S</u></a> | <a href="#"><u>CKD31C101H153M</u></a> |
| <a href="#"><u>CKD710JB0G105S</u></a> | <a href="#"><u>CKD710JB0J474S</u></a> | <a href="#"><u>CKD710JB1A224S</u></a> | <a href="#"><u>CKD710JB1C104S</u></a> |                                       |