MULTILAYER CERAMIC CHIP CAPACITORS



# CKC Series
# Commercial Grade
# 4 in 1 Array

**Type:** CKCL44 [EIA CC0805]
CKCA43 [EIA CC1206]

**Issue date:**
**January 2013**

Version A13

# REMINDERS

Please read before using this product

## SAFETY REMINDERS

### REMINDERS

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Notice : Effective January 2013, TDK will use a new catalog part number which adds product thickness and packaging specification detail. This new part number should be referenced on all catalog orders going forward, and is not applicable for OEM part number orders. Please be aware the last five digits of the TDK catalog part number will differ from the TDK item description (internal control number) on the product label. Contact your local TDK Sales representative for more information.

(Example)

| Catalog Issued date | TDK Part Number (In Catalog) | TDK Item Description (On Delivery Label) |
|---|---|---|
| Prior to January 2013 | C1608C0G1E103J | C1608C0G1E103JT000N |
| January 2013 and Later | C1608C0G1E103J080AA | C1608C0G1E103JT000N |



# CKC Series

## 4in1 Array Capacitors

Type: CKCL44 [EIA CC0805], CKCA43 [EIA CC1206]

Lead Free · RoHS COMPLIANT · Ecological

### Features



- Multiple capacitors are fitted in a single product, contributing to reduced installation costs.
- The electrostatic capacity range and shape are designed to meet the demands of the cellular phone market.
- Unique electrode construction reduces crosstalk.

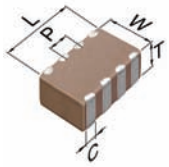
### Applications



- Cellular telephone interface
- Interface cable circuit
- PC and peripherals
- CPU bus line
- High frequency circuit
- Noise bypass circuit

### Shape & Dimensions



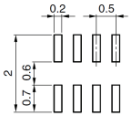



| | |
|---|---|
| L | Body Length |
| W | Body Width |
| T | Body Height |
| C | Terminal Width |
| P | Terminal Spacing |

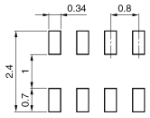
### PC Board Pattern



**CKCL44**




**CKCA43**




Dimensions in mm

### Part Number Construction

CKC • A43 • X5R • 0J • 105 • M • 100 • A • A

**Series Name**

**Dimensions L x W (mm)**

| Code | Length | Width |
|---|---|---|
| L44 | 2.00 ± 0.15 | 1.25 ± 0.15 |
| A43 | 3.20 ± 0.20 | 1.60 ± 0.15 |

**Temperature Characteristics**

| Temperature Characteristics | Capacitance Change | Temperature Range |
|---|---|---|
| C0G | 0±30 ppm/°C | -55 to +125°C |
| CH | 0±60 ppm/°C | -25 to +85°C |
| JB | ±10% | -25 to +85°C |
| X5R | ±15% | -55 to +85°C |
| X7R | ±15% | -55 to +125°C |

**Rated Voltage (DC)**

| Code | Voltage (DC) |
|---|---|
| 0J | 6.3V |
| 1A | 10V |
| 1C | 16V |
| 1E | 25V |
| 1H | 50V |

**Nominal Capacitance (pF)**

The capacitance is expressed in three digit codes and in units of pico Farads (pF). The first and second digits identify the first and second significant figures of the capacitance. The third digit identifies the multiplier. R designates a decimal point.

Ex. 0R2 = 0.2pF; 103 = 10,000pF; 105 = 1,000,000pF = 1,000nF = 1µF

**Capacitance Tolerance**

| Code | Tolerance |
|---|---|
| F | ± 1pF |
| K | ± 10% |
| M | ± 20% |

**Nominal Thickness**

| Code | Thickness |
|---|---|
| 085 | 0.85 mm |
| 100 | 1.00 mm |

**Packaging Style**

| Code | Style |
|---|---|
| A | 178” Reel, 4mm Pitch |

**Special Reserved Code**

| Code | Description |
|---|---|
| A | TDK Internal Code |



• All specifications are subject to change without notice.

## Capacitance Range Chart

# CKCL44(C2012) [EIA CC0805]

**Capacitance Range Chart**

Temperature Characteristics: C0G (0 ± 30ppm/ºC), CH (0 ± 60ppm/ºC), JB (± 10%), X5R (± 15%), X7R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

| Capacitance (pF) | Code | Tolerance | C0G | CH | JB | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1H (50V) | 1H (50V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 10 | 100 | F: ± 1pF<br>K: ± 10% | ■ | ■ | | | | | |
| 15 | 150 | | ■ | ■ | | | | | |
| 22 | 220 | | ■ | ■ | | | | | |
| 33 | 330 | | ■ | ■ | | | | | |
| 47 | 470 | | ■ | ■ | | | | | |
| 68 | 680 | | ■ | ■ | | | | | |
| 100 | 101 | | ■ | ■ | | | | | |
| 150 | 151 | | ■ | ■ | | | | | |
| 220 | 221 | | | | ■ | | | | |
| 470 | 471 | | | | ■ | | | | |
| 1,000 | 102 | | | | ■ | | | | |
| 2,200 | 222 | | | | ■ | | | | |
| 4,700 | 472 | | | | ■ | | | | |
| 10,000 | 103 | | | | | ■ | | | |
| 22,000 | 223 | | | | | | ■ | | |
| 47,000 | 473 | | | | | | | ■ | |
| 100,000 | 104 | | | | | | | | ■ |

| Capacitance (pF) | Code | Tolerance | X5R | | | | | X7R | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 220 | 221 | M: ± 20% | ■ | | | | | ■ | | |
| 470 | 471 | | ■ | | | | | ■ | | |
| 1,000 | 102 | | ■ | | | | | ■ | | |
| 2,200 | 222 | | ■ | | | | | ■ | | |
| 4,700 | 472 | | ■ | | | | | ■ | | |
| 10,000 | 103 | | | ■ | | | | | ■ | |
| 22,000 | 223 | | | | ■ | | | | | ■ |
| 47,000 | 473 | | | | | ■ | | | | |
| 100,000 | 104 | | | | | | ■ | | | |

Standard Thickness
■ 0.85 mm



• All specifications are subject to change without notice.

## Capacitance Range Chart

# CKCA43(C3216) [EIA CC1206]

**Capacitance Range Chart**

Temperature Characteristics: C0G (0 ± 30ppm/ºC), CH (0 ± 60ppm/ºC), JB (± 10%), X5R (± 15%), X7R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

| Capacitance (pF) | Code | Tolerance | C0G | CH |
|---|---|---|---|---|
| | | | 1H (50V) | 1H (50V) |
| 10 | 100 | F: ± 1pF<br>K: ± 10% | | |
| 15 | 150 | | | |
| 22 | 220 | | | |
| 33 | 330 | | | |
| 47 | 470 | | | |
| 68 | 680 | | | |
| 100 | 101 | | | |
| 150 | 151 | | | |
| 220 | 221 | | | |
| 330 | 331 | | | |
| 470 | 471 | | | |
| 680 | 681 | | | |
| 1,000 | 102 | | | |

| Capacitance (pF) | Code | Tolerance | JB | | | | X5R | | | | X7R | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1H (50V) | 1E (25V) | 1C (16V) | 0J (6.3V) | 1H (50V) | 1E (25V) | 1C (16V) | 0J (6.3V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 470 | 471 | M: ± 20% | | | | | | | | | | | |
| 1,000 | 102 | | | | | | | | | | | | |
| 2,200 | 222 | | | | | | | | | | | | |
| 4,700 | 472 | | | | | | | | | | | | |
| 10,000 | 103 | | | | | | | | | | | | |
| 22,000 | 223 | | | | | | | | | | | | |
| 47,000 | 473 | | | | | | | | | | | | |
| 100,000 | 104 | | | | | | | | | | | | |
| 1,000,000 | 105 | | | | | | | | | | | | |

Standard Thickness

1.00 mm



• All specifications are subject to change without notice.



## Capacitance Range Table

### Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (-55 to +125ºC, 0±30 ppm/ºC)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rated Voltage Edc: 50V | Rated Voltage Edc: 25V | Rated Voltage Edc: 16V | Rated Voltage Edc: 10V |
| 10 pF | 2012 | 0.85 ± 0.15 | ± 1% | CKCL44C0G1H100F085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 1% | CKCA43C0G1H100F100AA | | | |
| 15 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H150K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43C0G1H150K100AA | | | |
| 22 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H220K085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 10% | CKCA43C0G1H220K100AA | | | |
| 33 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H330K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43C0G1H330K100AA | | | |
| 47 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H470K085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 10% | CKCA43C0G1H470K100AA | | | |
| 68 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H680K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43C0G1H680K100AA | | | |
| 100 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H101K085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 10% | CKCA43C0G1H101K100AA | | | |
| 150 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44C0G1H151K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43C0G1H151K100AA | | | |
| 220 pF | 3216 | 1.00 ± 0.15 | ± 10% | CKCA43C0G1H221K100AA | | | |
| 330 pF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43C0G1H331K100AA | | | |
| 470 pF | 3216 | 1.00 ± 0.15 | ± 10% | CKCA43C0G1H471K100AA | | | |
| 680 pF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43C0G1H681K100AA | | | |
| 1 nF | 3216 | 1.00 ± 0.15 | ± 10% | CKCA43C0G1H102K100AA | | | |

### Class 1 (Temperature Compensating)

Temperature Characteristics: CH (-25 to +85ºC, 0±60 ppm/ºC)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rated Voltage Edc: 50V | Rated Voltage Edc: 25V | Rated Voltage Edc: 16V | Rated Voltage Edc: 10V |
| 10 pF | 2012 | 0.85 ± 0.15 | ± 1% | CKCL44CH1H100F085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 1% | CKCA43CH1H100F100AA | | | |
| 15 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H150K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H150K100AA | | | |
| 22 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H220K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H220K100AA | | | |
| 33 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H330K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H330K100AA | | | |
| 47 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H470K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H470K100AA | | | |
| 68 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H680K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H680K100AA | | | |
| 100 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H101K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H101K100AA | | | |
| 150 pF | 2012 | 0.85 ± 0.15 | ± 10% | CKCL44CH1H151K085AA | | | |
| | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H151K100AA | | | |
| 220 pF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H221K100AA | | | |
| 330 pF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H331K100AA | | | |
| 470 pF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H471K100AA | | | |
| 680 pF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H681K100AA | | | |
| 1 nF | 3216 | 1.00 ± 0.10 | ± 10% | CKCA43CH1H102K100AA | | | |



• All specifications are subject to change without notice.



## Capacitance Range Table

### Class 2 (Temperature Stable)

Temperature Characteristics: JB (-25 to +85ºC, ±10%)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rated Voltage Edc: 50V | Rated Voltage Edc: 25V | Rated Voltage Edc: 16V | Rated Voltage Edc: 10V |
| 220 pF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44JB1H221M085AA | | | |
| 470 pF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44JB1H471M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB1H471M100AA | | | |
| 1 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44JB1H102M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB1H102M100AA | | | |
| 2.2 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44JB1H222M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB1H222M100AA | | | |
| 4.7 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44JB1H472M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB1H472M100AA | | | |
| 10 nF | 2012 | 0.85 ± 0.15 | ± 20% | | CKCL44JB1E103M085AA | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB1H103M100AA | | | |
| 22 nF | 2012 | 0.85 ± 0.15 | ± 20% | | | CKCL44JB1C223M085AA | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB1H223M100AA | | | |
| 47 nF | 2012 | 0.85 ± 0.15 | ± 20% | | | | CKCL44JB1A473M085AA |
| | 3216 | 1.00 ± 0.15 | ± 20% | | CKCA43JB1E473M100AA | | |
| 100 nF | 3216 | 1.00 ± 0.15 | ± 20% | | | CKCA43JB1C104M100AA | |

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number |
|---|---|---|---|---|
| | | | | Rated Voltage Edc: 6.3V |
| 100 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44JB0J104M085AA |
| 1 µF | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43JB0J105M100AA |

### Class 2 (Temperature Stable)

Temperature Characteristics: X5R (-55 to +85ºC, ±15%)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rated Voltage Edc: 50V | Rated Voltage Edc: 25V | Rated Voltage Edc: 16V | Rated Voltage Edc: 10V |
| 220 pF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X5R1H221M085AA | | | |
| 470 pF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X5R1H471M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R1H471M100AA | | | |
| 1 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X5R1H102M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R1H102M100AA | | | |
| 2.2 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X5R1H222M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R1H222M100AA | | | |
| 4.7 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X5R1H472M085AA | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R1H472M100AA | | | |
| 10 nF | 2012 | 0.85 ± 0.15 | ± 20% | | CKCL44X5R1E103M085AA | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R1H103M100AA | | | |
| 22 nF | 2012 | 0.85 ± 0.15 | ± 20% | | | CKCL44X5R1C223M085AA | |
| | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R1H223M100AA | | | |
| 47 nF | 2012 | 0.85 ± 0.15 | ± 20% | | | | CKCL44X5R1A473M085AA |
| | 3216 | 1.00 ± 0.15 | ± 20% | | CKCA43X5R1E473M100AA | | |
| 100 nF | 2012 | 0.85 ± 0.15 | ± 20% | | | | |
| | 3216 | 1.00 ± 0.15 | ± 20% | | | CKCA43X5R1C104M100AA | |
| 1 µF | 3216 | 1.00 ± 0.15 | ± 20% | | | | |

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number |
|---|---|---|---|---|
| | | | | Rated Voltage Edc: 6.3V |
| 100 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X5R0J104M085AA |
| 1 µF | 3216 | 1.00 ± 0.15 | ± 20% | CKCA43X5R0J105M100AA |



• All specifications are subject to change without notice.

## Capacitance Range Table

**Class 2 (Temperature Stable)**

Temperature Characteristics: X7R (-55 to +125ºC, ±15%)

| Capacitance | Size | Thickness (mm) | Capacitance Tolerance | TDK Part Number | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rated Voltage Edc: 50V | Rated Voltage Edc: 25V | Rated Voltage Edc: 16V | Rated Voltage Edc: 10V |
| 220 pF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X7R1H221M085AA | | | |
| 470 pF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X7R1H471M085AA | | | |
| | 3216 | 1.00 ± 0.30 | ± 20% | CKCA43X7R1H471M100AA | | | |
| 1 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X7R1H102M085AA | | | |
| | 3216 | 1.00 ± 0.30 | ± 20% | CKCA43X7R1H102M100AA | | | |
| 2.2 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X7R1H222M085AA | | | |
| | 3216 | 1.00 ± 0.30 | ± 20% | CKCA43X7R1H222M100AA | | | |
| 4.7 nF | 2012 | 0.85 ± 0.15 | ± 20% | CKCL44X7R1H472M085AA | | | |
| | 3216 | 1.00 ± 0.30 | ± 20% | CKCA43X7R1H472M100AA | | | |
| 10 nF | 2012 | 0.85 ± 0.15 | ± 20% | | CKCL44X7R1E103M085AA | | |
| | 3216 | 1.00 ± 0.30 | ± 20% | CKCA43X7R1H103M100AA | | | |
| 22 nF | 2012 | 0.85 ± 0.15 | ± 20% | | | CKCL44X7R1C223M085AA | |
| | 3216 | 1.00 ± 0.30 | ± 20% | CKCA43X7R1H223M100AA | | | |
| 47 nF | 3216 | 1.00 ± 0.30 | ± 20% | | CKCA43X7R1E473M100AA | | |
| 100 nF | 3216 | 1.00 ± 0.30 | ± 20% | | | CKCA43X7R1C104M100AA | |



• All specifications are subject to change without notice.

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Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

**Офис по работе с юридическими лицами:**

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9