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Please read this before using the product.

SAFETY REMINDERS

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8. The descriptions in this catalog apply as of April 2007.

General Multilayer Ceramic Chip Capacitors

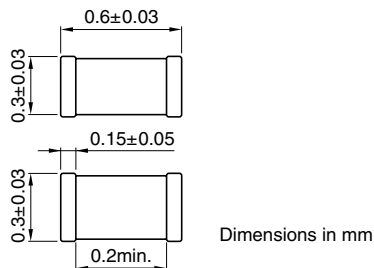
C Series C0603 (EIA CC0201) Type

Conformity to RoHS Directive

FEATURES

- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers.
- A monolithic structure ensures superior mechanical strength and reliability.
- High-accuracy automatic mounting is facilitated through the maintenance of very precise dimensional tolerances.
- Composed of only ceramics and metals, these capacitors provide extremely dependable performance, exhibiting virtually no degradation even when subjected to temperature extremes.
- Low stray capacitance ensures high conformity with nominal values, thereby simplifying the circuit design process.
- Low residual inductance assures superior frequency characteristics.
- Because electrostatic capacity has been obtained up to the electrolytic capacitor range, these capacitors offer long service life and are optimally suited for power supply designs that require high levels of reliability.
- Owing to their low ESR and excellent frequency characteristics, these products are optimally suited for high frequency and high-density type power supplies.

SHAPES AND DIMENSIONS



PRODUCT IDENTIFICATION

C	0603	CH	1E	100	D	□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

0603	0.6×0.3mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF
0R5	0.5pF

(6) Capacitance tolerance

Symbol	Tolerance	Applicable capacitance range
C	±0.25pF	10pF or less
D	±0.5pF	
J	±5%	Over 10pF
K	±10%	
M	±20%	
Z	+80, -20%	

(7) Packaging style

T	Taping (reel)
B	Bulk

• 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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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)**TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)**RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: CH	Temperature characteristics: C0G
0.5	±0.25pF	0.30±0.03	C0603CH1E0R5C	C0603C0G1E0R5C
0.75	±0.25pF	0.30±0.03	C0603CH1ER75C	C0603C0G1ER75C
1	±0.25pF	0.30±0.03	C0603CH1E010C	C0603C0G1E010C
1.5	±0.25pF	0.30±0.03	C0603CH1E1R5C	C0603C0G1E1R5C
2	±0.25pF	0.30±0.03	C0603CH1E020C	C0603C0G1E020C
3	±0.25pF	0.30±0.03	C0603CH1E030C	C0603C0G1E030C
4	±0.25pF	0.30±0.03	C0603CH1E040C	C0603C0G1E040C
5	±0.25pF	0.30±0.03	C0603CH1E050C	C0603C0G1E050C
6	±0.5pF	0.30±0.03	C0603CH1E060D	C0603C0G1E060D
7	±0.5pF	0.30±0.03	C0603CH1E070D	C0603C0G1E070D
8	±0.5pF	0.30±0.03	C0603CH1E080D	C0603C0G1E080D
9	±0.5pF	0.30±0.03	C0603CH1E090D	C0603C0G1E090D
10	±0.5pF	0.30±0.03	C0603CH1E100D	C0603C0G1E100D
12	±5%	0.30±0.03	C0603CH1E120J	C0603C0G1E120J
15	±5%	0.30±0.03	C0603CH1E150J	C0603C0G1E150J
18	±5%	0.30±0.03	C0603CH1E180J	C0603C0G1E180J
22	±5%	0.30±0.03	C0603CH1E220J	C0603C0G1E220J
27	±5%	0.30±0.03	C0603CH1E270J	C0603C0G1E270J
33	±5%	0.30±0.03	C0603CH1E330J	C0603C0G1E330J
39	±5%	0.30±0.03	C0603CH1E390J	C0603C0G1E390J
47	±5%	0.30±0.03	C0603CH1E470J	C0603C0G1E470J
56	±5%	0.30±0.03	C0603CH1E560J	C0603C0G1E560J
68	±5%	0.30±0.03	C0603CH1E680J	C0603C0G1E680J
82	±5%	0.30±0.03	C0603CH1E820J	C0603C0G1E820J
100	±5%	0.30±0.03	C0603CH1E101J	C0603C0G1E101J

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)**RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
100	±10%	0.30±0.03	C0603JB1E101K	C0603X5R1E101K	C0603X7R1E101K
150	±10%	0.30±0.03	C0603JB1E151K	C0603X5R1E151K	C0603X7R1E151K
220	±10%	0.30±0.03	C0603JB1E221K	C0603X5R1E221K	C0603X7R1E221K
330	±10%	0.30±0.03	C0603JB1E331K	C0603X5R1E331K	C0603X7R1E331K
470	±10%	0.30±0.03	C0603JB1E471K	C0603X5R1E471K	C0603X7R1E471K
680	±10%	0.30±0.03	C0603JB1E681K	C0603X5R1E681K	C0603X7R1E681K
1,000	±10%	0.30±0.03	C0603JB1E102K	C0603X5R1E102K	C0603X7R1E102K
1,500	±10%	0.30±0.03	C0603JB1E152K	C0603X5R1E152K	C0603X7R1E152K
2,200	±10%	0.30±0.03	C0603JB1E222K	C0603X5R1E222K	C0603X7R1E222K
3,300	±10%	0.30±0.03	C0603JB1E332K	C0603X5R1E332K	C0603X7R1E332K

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
4,700	±10%	0.30±0.03	C0603JB1C472K	C0603X5R1C472K	C0603X7R1C472K

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R(±15%)RATED VOLTAGE E_{dc}: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: JB	Temperature characteristics: X5R
6,800	±10%	0.30±0.03	C0603JB1A682K	C0603X5R1A682K
10,000	±10%	0.30±0.03	C0603JB1A103K	C0603X5R1A103K

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
15,000	±10%	0.30±0.03	C0603JB0J153K	C0603X5R0J153K
	±20%	0.30±0.03	C0603JB0J153M	C0603X5R0J153M
22,000	±10%	0.30±0.03	C0603JB0J223K	C0603X5R0J223K
	±20%	0.30±0.03	C0603JB0J223M	C0603X5R0J223M
33,000	±10%	0.30±0.03	C0603JB0J333K	C0603X5R0J333K
	±20%	0.30±0.03	C0603JB0J333M	C0603X5R0J333M
47,000	±10%	0.30±0.03	C0603JB0J473K	C0603X5R0J473K
	±20%	0.30±0.03	C0603JB0J473M	C0603X5R0J473M
68,000	±10%	0.30±0.03	C0603JB0J683K	C0603X5R0J683K
	±20%	0.30±0.03	C0603JB0J683M	C0603X5R0J683M
100,000	±10%	0.30±0.03	C0603JB0J104K	C0603X5R0J104K
	±20%	0.30±0.03	C0603JB0J104M	C0603X5R0J104M

TEMPERATURE CHARACTERISTICS: JF(+30, –80%), Y5V(+22, –82%)
RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
10,000	+80, –20%	0.30±0.03	C0603JF1C103Z	C0603Y5V1C103Z

• For more information about the products of other capacitance or data, please contact us.

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