

Multilayer Ceramic Chip Capacitors (Array Type)

Series: **ECJ**



■ Features

- Miniaturized, with 4 built-in capacitors ("12" type (0805) and "13" type (1206))
- Improved placement time on mounting machines
- Low self-inductance and excellent frequency characteristics

■ Recommended Applications

- Input/Output circuit of computer's motherboard
 - Serial port
 - Video port
 - Parallel port

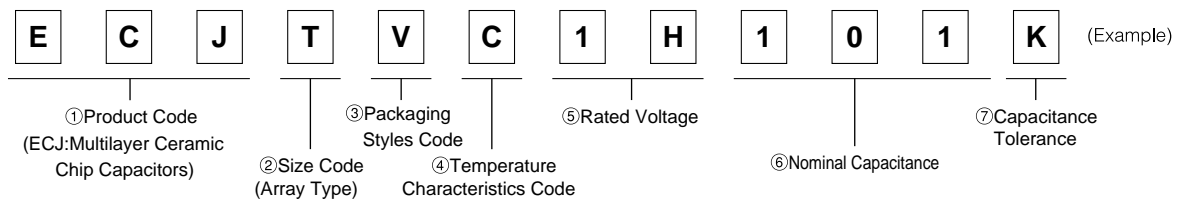
■ Handling Precautions

See Pages 44 to 48

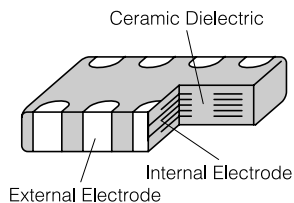
■ Packaging Specifications

See Page 82

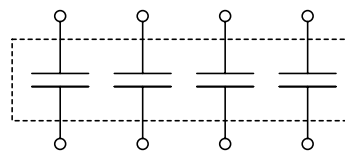
■ Explanation of Part Numbers



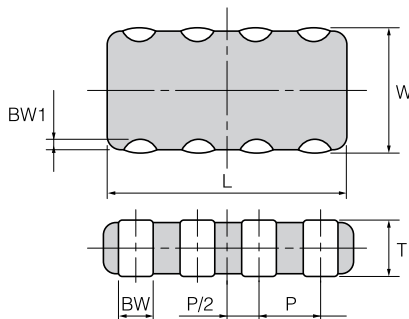
■ Construction



Schematic



■ Dimensions in mm (not to scale)



Unit : mm

Code	Size Code (EIA)	L	W	T	BW	BW1	P
T	Type "12" (0805)	2.00±0.15	1.25±0.15	0.85±0.15	0.25±0.10	0.2 +0.3/-0.1	0.5±0.1
R	Type "13" (1206)	3.2±0.2	1.6±0.2	0.85±0.10	0.40±0.15	0.2 +0.3/-0.1	0.8±0.1

■ Packaging Styles and Standard Packaging Quantity

Code	Packaging Styles		Quantity	Type "12" (0805)	Type "13" (1206)
V	φ180 reel	Paper taping (Pitch : 4mm)	pcs/reel	4,000	4,000

■ Temperature Characteristics

● Class 1

Code	Temp. Char.	Temp. Char. Tolerance (ppm/°C)
C	CH	0 ± 60

Note : Measurement of capacitance at 20 °C and 85 °C should be made to calculate temperature characteristics

● Class 2

Code	Temp. Char.	Capacitance Change	Measurement Temperature Range	Reference Temperature
B	B	±10 %	-25 to 85 °C	20 °C
	X7R	±15 %	-55 to 125 °C	25 °C
F	F	+30, -80 %	-25 to 85 °C	20 °C
	Y5V	+22, -82 %	-30 to 85 °C	25 °C

For applicable "Temperature Characteristics", see the list of standard Products on page 29.

■ Rated Voltage

Code	1H	1E	1C	1A
Rated Voltage	DC 50 V	DC 25 V	DC 16 V	DC 10 V

■ Nominal Capacitance

Ex.	100	101	104
Nominal Capacitance	10 pF	100 pF	100000 pF (0.1μF)

■ Capacitance tolerance

Class	Temp. Char.	Tolerance Code	Capacitance Tolerance	
1	CH	F	C=10pF	±1 pF
		K	C≥15pF	±10 %
2	B, X7R	M	±20 %	
	F, Y5V	Z	+80, -20 %	

■ Specifications and Test Method

Item	Specifications		Test Method
	Class 1	Class 2	
Operating Temperature Range	CH: -55 to 125 °C	B, X7R: -55 to 125 °C F, Y5V: -30 to 85 °C	—
Dielectric Withstanding Voltage	No breakdown		Test Voltage Class 1: Rated Voltage ×300% Class 2: Rated voltage ×250% Electrification time: 1 to 5s Charge/discharge current: Within 50 mA
Insulation Resistance (IR)	10000MΩ or 500/C (MΩ) whichever is less Note: DC10V, 100/C(MΩ) min. (C: Nominal Cap. in μF)		Measuring Voltage: Rated Voltage Measuring Voltage time: 60 ± 5s Charge/discharge current: Within 50 mA
Capacitance	Within the specified tolerance		Reference Temperature: 20±2 °C Class 1 Class 2
Q Factor or Dissipation Factor (tan δ)	C<30 pF: Q≥400+20C 30 pF≤C≤1000 pF: Q≥1000 (C: Nominal Cap. in pF)	tan δ: B, X7R: 0.025 max. F, Y5V: 0.05 max. :0.1 max. (DC16V) :0.125 max. (DC10V)	Measuring Freq. 1 MHz ± 10% Measuring Voltage: 0.5 to 5 Vrms Pretreatment: The capacitors should be kept in a temperature of 150±0/-10°C for 1 hour and stored in standard condition* for 48 ± 4 hours, before initial measurement. Measuring Freq.: 1 kHz ± 10% Measuring Voltage: 1.0 ± 0.2 Vrms

*Standard condition : Temperature 15 to 35 °C, Relative humidity 45 to 75 %

Soldering method for Multilayer ceramic chip capacitor array should be reflow soldering.

Flow soldering is prohibited because solder bridge could cause short circuit between the electrodes terminal.

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use. Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

Standard Products for Type "12" (EIA "0805"), Taped Version

		Class 1																	
		Code	C																
Capacitance (pF)	Rated voltage	DC50V																	
	Capacitance Tolerance	Part No	Dim. T (mm)	Temp. Char. CH															
10	±1pF(F)	ECJTV1H100F	0.85	○															
22	±10%(K)	ECJTV1H220K	0.85	○															
47		ECJTV1H470K	0.85	○															
100		ECJTV1H101K	0.85	○															
220		ECJTV1H221K	0.85	○															
Class 2																			
		Code	B						Code	F									
Capacitance (pF)	Rated voltage	DC50V		DC25V			DC16V			Rated voltage	DC16V								
	Capacitance Tolerance	Part No	Dim. T (mm)	Temp. Char. B X7R		Part No	Dim. T (mm)	Temp. Char. B X7R		Part No	Dim. T (mm)	Temp. Char. B X7R		Capacitance Tolerance	Part No	Dim. T (mm)	Temp. Char. F Y5V		
470	±20%(M)	ECJTV1H471M	0.85	○ ○															
1000		ECJTV1H102M	0.85	○ ○															
2200		ECJTV1H222M	0.85	○ ○															
4700							ECJTV1E472M	0.85	○ ○										
10000											ECJTV1C103M	0.85	○ ○						
100000														+80,-20%(Z)	ECJTV1C104Z	0.85	○ ○		

Packaging Style Code: "V" for Taped Version. (φ180 reel, Taping pitch: 4 mm)

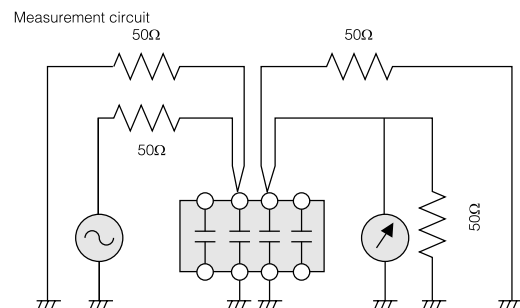
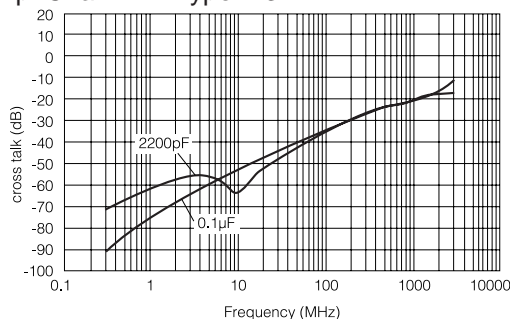
Standard Products for Type "13" (EIA "1206"), Taped Version

		Class 1				Class 2												
		Code	C			Code	B						Code	F				
Capacitance (pF)	Rated voltage	DC50V				Rated voltage	DC50V			DC16V			Rated voltage	DC25V		DC10V		
	Capacitance Tolerance	Part No	Dim. T (mm)	Temp. Char. CH	Capacitance Tolerance	Part No	Dim. T (mm)	Temp. Char. B X7R		Part No	Dim. T (mm)	Temp. Char. B X7R		Capacitance Tolerance	Part No	Dim. T (mm)	Temp. Char. F Y5V	
10	±1pF(F)	ECJRV1H100F	0.85	○														
15	±10%(K)	ECJRV1H150K	0.85	○														
22		ECJRV1H220K	0.85	○														
33		ECJRV1H330K	0.85	○														
47		ECJRV1H470K	0.85	○														
68		ECJRV1H680K	0.85	○														
100		ECJRV1H101K	0.85	○														
150		ECJRV1H151K	0.85	○														
220		ECJRV1H221K	0.85	○														
330		ECJRV1H331K	0.85	○														
470		ECJRV1H471K	0.85	○														
680	±20%(M)					ECJRV1H471M	0.85	○ ○										
1000						ECJRV1H681M	0.85	○ ○										
1500						ECJRV1H102M	0.85	○ ○										
2200						ECJRV1H152M	0.85	○ ○										
3300						ECJRV1H222M	0.85	○ ○										
4700						ECJRV1H332M	0.85	○ ○										
6800						ECJRV1H472M	0.85	○ ○										
10000					ECJRV1H682M	0.85	○ ○											
100000										ECJRV1C104M	0.85	○ ○		+80,-20%(Z)	ECJRV1E104Z	0.85	○ ○	
1000000																	ECJRV1A106Z 0.85 ○ ○	

Packaging Style Code: "V" for Taped Version. (φ180 reel, Taping pitch: 4 mm)

Cross talk characteristics [Ex.]

Temp. Char. B. Type "13"



Measurement in the condition where did mounting to the PC board.