

Multilayer Ceramic Capacitors (2 Array Type)

Series: **ECJU**



■ Features

- 2 capacitors in the miniature size of 0504
- Fast mounting and space saving with less part placement
- Downsizing and high capacitance due to original material (Thin and high lamination technology)
- RoHS compliant

■ Recommended Applications

- Stabilizing of power supply voltage and noise filtering as decoupling capacitors for digital IC power circuit
- Bypass capacitors for CPU digital signal

■ Handling Precautions

See Page 49 to 54

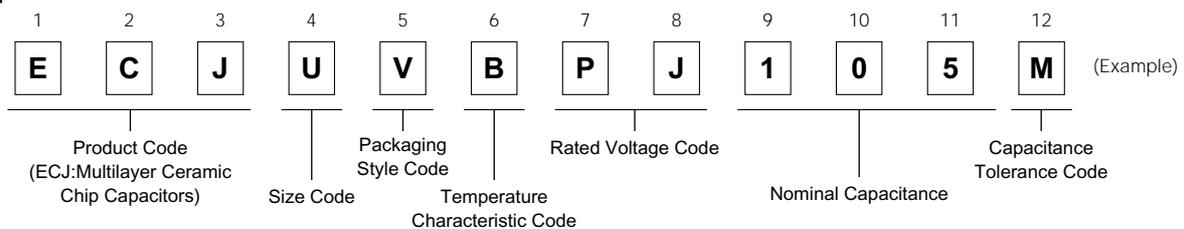
■ Packaging Specifications

See Page 46, 47, 58

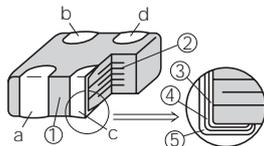
■ Discontinued / Revised Part Numbers, Alternative Part Numbers

See Page 56, 57

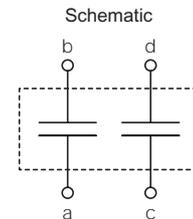
■ Explanation of Part Numbers



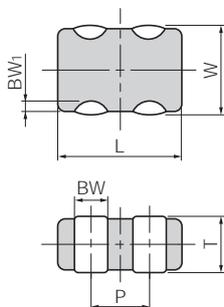
■ Construction



No	Name
①	Ceramic dielectric
②	Internal electrode
③	Substrate electrode
④	Terminal electrode
⑤	External electrode



■ Dimensions in mm (not to scale)



Size Code	Size (EIA)	L	W	T	BW	BW ₁	P
U	0504	1.37±0.15	1.0±0.1	0.60 ^{+0.06} _{-0.10}	0.36±0.10	2.0±0.1	0.64±0.10
				0.8±0.1			0.81±0.06

■ Packaging Styles and Standard Packaging Quantity

Quantity: pcs. / reel

Packaging Style Code	Packaging Styles	Size Thickness (mm)	0504	
			T=0.6	T=0.8
V	φ180 reel	Paper taping (Pitch : 4 mm)	4,000	

Temperature Characteristics

● Class 1

Temperature Characteristic Code	Temperature Characteristics	Temp. Coeff. (ppm/°C)	Rate of Capacitance change at each Temp. (%)			
			-25 °C		85 °C	
			max.	min.	max.	min.
C	CH	0 ± 60	0.49	-0.27	0.39	-0.39

Temperature coefficient: calculated between 20 °C to 85 °C

● Class 2

Temperature Characteristic Code	Temperature Characteristics	Capacitance Change	Measurement Temperature Range	Reference Temperature
B	B	±10 %	-25 to 85 °C	20 °C
	X7R	±15 %	-55 to 125 °C	25 °C
	X5R	±15 %	-55 to 85 °C	25 °C

For applicable *temperature characteristics*, see the lists of standard products on page 28.

Rated Voltage

Code	1H	1E	1C, PC	1A, PA	PJ
Rated Voltage	DC 50 V	DC 25 V	DC 16 V	DC 10 V	DC 6.3 V

Nominal Capacitance

Ex.	100	101	103	104	105
Nominal Capacitance	10 pF	100 pF	10,000 pF (0.01 μF)	100,000 pF (0.1 μF)	1,000,000 pF (1.0 μF)

Capacitance tolerance

Class	Temperature Characteristics		Tolerance Code	Capacitance Tolerance	
1	CH	Capacitance range	C=10 pF	F	±1 pF
			C>10 pF	K	±10 %
2	B, X7R, X5R		M	±20 %	

Specifications and Test Method

Item	Specifications		Test Method	
	Class 1	Class 2		
Operating Temperature Range	Temp. Char. CH: -55 to 125 °C	Temp. Char. B, X7R: -55 to 125 °C X5R: -55 to 85 °C	—	
Dielectric Withstanding Voltage	No dielectric breakdown and /or damage		Test voltage: Class 1: Rated voltage × 300 % Class 2: Rated voltage × 250 % Duration: 1 to 5 s Charge/discharge current: 50 mA max.	
Insulation Resistance (I.R.)	10000 MΩ or 500/C (MΩ) Whichever is less Note: 100/C (MΩ) min. for DC 10 V max. C: Nominal Cap. in μF		Measuring voltage: Rated voltage Duration: 60±5 s Charge/discharge current: 50 mA max.	
Capacitance	Within the specified tolerance		Measuring temperature: 20±2 °C	
Q Factor or Dissipation Factor (tan δ)	Q: C < 30 pF: Q>400+20 C 30 pF<C<1000 pF: Q>1000 C: Nominal Cap. in pF	tanδ: Temp. Char. B, X7R: 0.025 max. X5R: 0.15 max. Please see the technical specifications for details.	Class 1	
			Measuring frequency	1 MHz ± 10 %
			Measuring voltage	0.5 to 5 Vrms
			Class 2	
			Preconditioning: The capacitors shall be kept in temperature of 150 +0/-10 °C for 1 hour and subjected to standard condition * 48±4 hours before initial measurement.	
			Measuring frequency	1 kHz ± 10 %
			Measuring voltage	1.0±0.2 Vrms

* Standard condition: Temperature 15 to 35 °C, Relative humidity 45 to 75 %.
For further information, see the technical specifications.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

Standard Products for EIA "0504", Taped Version

● Class 1

- ◆ Temperature Characteristic Code: C (Temperature Characteristics: CH)

Rated voltage		DC 50 V		
Capacitance (pF)	Capacitance Tolerance	Part No.	Dim. T (mm)	Temp. Char.
10	±1 pF (F)	ECJUVC1H100F	0.6	○
22		ECJUVC1H220K	0.6	○
47	±10 % (K)	ECJUVC1H470K	0.6	○
100		ECJUVC1H101K	0.6	○

Standard packaging quantity of Packaging Style Code "V" (T = 0.6 mm): 4,000 pcs./reel
Avoid flow soldering.

● Class 2

- ◆ Temperature Characteristic Code: B (Temperature Characteristics: B, X7R, X5R)

Rated voltage		DC 50 V			DC 25 V			DC 16 V			DC 10 V				
Capacitance (pF)	Capacitance Tolerance	Part No.	Dim. T (mm)	Temp. Char.		Part No.	Dim. T (mm)	Temp. Char.		Part No.	Dim. T (mm)	Temp. Char.			
				B	X7R			B	X7R			X5R	X5R		
470	±20 % (M)	ECJUVB1H471M	0.6	○	○										
1000		ECJUVB1H102M	0.6	○	○										
2200		ECJUVB1H222M	0.6	○	○										
4700						ECJUVB1E472M	0.6	○	○						
10000						ECJUVB1E103M	0.6	○	○						
47000										ECJUVB1C473M	0.6	○			
100000												ECJUVB1A104M	0.6	○	
1000000										ECJUVBPC105M	0.8	○	ECJUVBPA105M	0.8	○

Rated voltage		DC 6.3 V		
Capacitance (μF)	Capacitance Tolerance	Part No.	Dim. T (mm)	Temp. Char.
1	±20 % (M)	ECJUVBPJ105M	0.8	○
2.2		ECJUVBPJ225M	0.8	○

Standard packaging quantity of Packaging Style Code "V" (T = 0.6 mm, T = 0.8 mm): 4,000 pcs./reel
Avoid flow soldering.

■ Cross talk characteristics [Ex.]

Temperature Characteristics X5R, 1.0 μF

