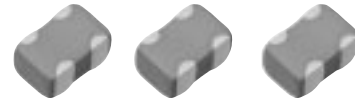


# Panasonic

## Multilayer Ceramic Capacitors(2 Array Type)

### Multilayer Ceramic Capacitors (2 Array Type)

Series: **ECJU**



#### ■ Features

- Array of 2 capacitors within 0504 case size
- Single part placement, saving placement time and using less PC board area
- Advanced multi-layer technology that results in high capacitance within a very small package
- RoHS compliant

#### ■ Recommended Applications

- Stabilization of power supply voltages and for filtering of noise
- Bypass capacitor for digital signal lines

#### ■ Handling Precautions

See Page 48 to 53

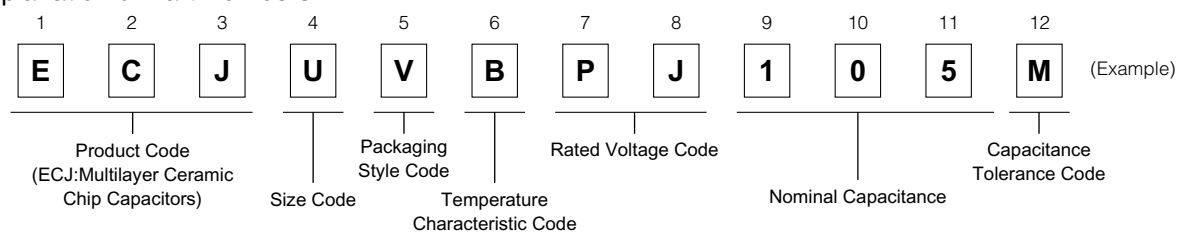
#### ■ Packaging Specifications

See Page 45, 46, 56

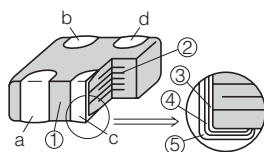
#### ■ Discontinued / Revised Part Numbers, Alternative Part Numbers

See Page 54, 55

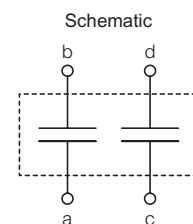
#### ■ Explanation of Part Numbers



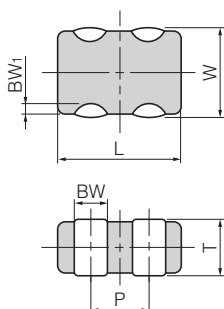
#### ■ Construction



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 <sub>1</sub>	P
U	0504	1.37±0.15	1.0±0.1	0.60 <sup>+0.06</sup> <sub>-0.10</sub>	0.36±0.10	2.0±0.1	0.64±0.10
				0.8±0.1			0.52±0.06

#### ■ Packaging Styles and Standard Packaging Quantity

Quantity: pcs. / reel

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

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## Multilayer Ceramic Capacitors(2 Array Type)

### 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 27.

### 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 Testing Methods

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	tan δ: 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.

# Panasonic

## Multilayer Ceramic Capacitors(2 Array Type)

### 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. CH
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. X5R
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

