

## Film Chip Capacitor

Type: **ECHU(X)**

Stacked metallized PPS film as dielectric with simple mold - less construction

### ■Features

- Small in size (minimum size 2.0×1.25mm)
- 85°C, 85%RH, W.V. × 1.0 for 500 hours
- Applicable for reflow soldering

### ■Recommended Applications

- Time - constant
- Filtering
- Oscillation and resonance

### ■Explanation of Numbers

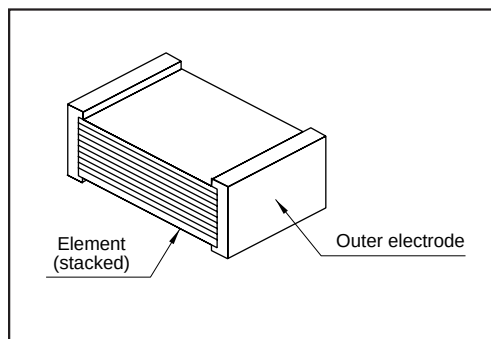
| 1            | 2                         | 3        | 4             | 5                    | 6           | 7 | 8         | 9              | 10     | 11       | 12                  |
|--------------|---------------------------|----------|---------------|----------------------|-------------|---|-----------|----------------|--------|----------|---------------------|
| <b>E</b>     | <b>C</b>                  | <b>H</b> | <b>U</b>      |                      |             |   |           |                |        | <b>X</b> | <b>5</b>            |
| Product code | Dielectric & construction |          | Rated voltage |                      | Capacitance |   | Cap. Tol. |                | Suffix | Suffix   |                     |
|              |                           |          |               | 1C 16VDC<br>1H 50VDC |             |   |           | G ±2%<br>J ±5% |        |          | Tape width<br>5 8mm |

### ■Specifications

|                       |                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------|
| Category temp. range  | −55 to +125°C                                                                           |
| Rated voltage         | 16VDC, 50VDC                                                                            |
| Capacitance range     | 0.0001 to 0.1 μF (E12)                                                                  |
| Capacitance tolerance | ±2%(G), ±5%(J)                                                                          |
| Withstand voltage     | Between terminals : Rated volt. (VDC)×175% 1 to 5s                                      |
| Dissipation factor    | ≤0.6% (20°C, 1kHz)                                                                      |
| Insulation resistance | 16VDC : ≥ 3000MΩ (20°C, 10VDC 60s)<br>50VDC : ≥ 3000MΩ (20°C, 50VDC 60s)                |
| Soldering conditions  | Reflow soldering : 260°C max. and 30sec max. at more than 230°C (Temp. at cap. surface) |

※ Flow soldering Type ECHU(B) is available. Please contact the home page (<http://www.maco.panasonic.co.jp>)

### ■Construction



### ■Dimensions in mm (not to scale)

| size code | L   | W    | H   | e    | g     |
|-----------|-----|------|-----|------|-------|
| J1        | 2.0 | 1.25 | 0.9 | 0.45 | ≥ 0.6 |
| J2        | 2.0 | 1.25 | 1.1 | 0.45 | ≥ 0.6 |
| H1        | 3.2 | 1.6  | 0.9 | 0.65 | ≥ 1.0 |
| H2        | 3.2 | 1.6  | 1.1 | 0.65 | ≥ 1.0 |
| H3        | 3.2 | 1.6  | 1.5 | 0.65 | ≥ 1.0 |
| G1        | 3.2 | 2.5  | 1.1 | 0.65 | ≥ 1.0 |
| G2        | 3.2 | 2.5  | 1.5 | 0.65 | ≥ 1.0 |
| G3        | 3.2 | 2.5  | 2.1 | 0.65 | ≥ 1.0 |

$L \pm 0.2$   
 $W \pm 0.2$   
 $H \pm 0.2$   
 $e \pm 0.35$  ( $\pm 0.25$ ) \*  
 $g$   
 \*To be applied only for size code J1 & J2

# ■Taping Specification for Automatic Insertion(Mounting)

Refer to the PDF file of the taping specification.

## ■Rating, Dimensions & Quantity/Reel

●Capacitance tolerance :  $\pm 2\%$  (G),  $\pm 5\%$  (J)

| Cap. (μF) | Rated volt. 16VDC                  |                 |     |      |           |      | Rated volt. 50VDC                  |                 |     |      |           |      |      |
|-----------|------------------------------------|-----------------|-----|------|-----------|------|------------------------------------|-----------------|-----|------|-----------|------|------|
|           | Part No.                           | Dimensions (mm) |     |      | Size Code | Q'ty | Part No.                           | Dimensions (mm) |     |      | Size Code | Q'ty |      |
|           |                                    | L               | W   | H    |           |      |                                    | L               | W   | H    |           |      |      |
| 0.0001    | Please use 50VDC rating of ECHU(X) |                 |     |      |           |      | ECHU1H101                          | □X5             | 2.0 | 1.25 | 0.9       | J1   | 3000 |
| 0.00012   |                                    |                 |     |      |           |      | ECHU1H121                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00015   |                                    |                 |     |      |           |      | ECHU1H151                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00018   |                                    |                 |     |      |           |      | ECHU1H181                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00022   |                                    |                 |     |      |           |      | ECHU1H221                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00027   |                                    |                 |     |      |           |      | ECHU1H271                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00033   |                                    |                 |     |      |           |      | ECHU1H331                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00039   |                                    |                 |     |      |           |      | ECHU1H391                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00047   |                                    |                 |     |      |           |      | ECHU1H471                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00056   |                                    |                 |     |      |           |      | ECHU1H561                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00068   |                                    |                 |     |      |           |      | ECHU1H681                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.00082   |                                    |                 |     |      |           |      | ECHU1H821                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.001     |                                    |                 |     |      |           |      | ECHU1H102                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.0012    |                                    |                 |     |      |           |      | ECHU1H122                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.0015    |                                    |                 |     |      |           |      | ECHU1H152                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.0018    |                                    |                 |     |      |           |      | ECHU1H182                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.0022    |                                    |                 |     |      |           |      | ECHU1H222                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.0027    |                                    |                 |     |      |           |      | ECHU1H272                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |      |
| 0.0033    | ECHU1C332                          | □X5             | 2.0 | 1.25 | 0.9       | J1   | Please use 50VDC rating of ECHU(C) |                 |     |      |           |      |      |
| 0.0039    | ECHU1C392                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |                                    |                 |     |      |           |      |      |
| 0.0047    | ECHU1C472                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |                                    |                 |     |      |           |      |      |
| 0.0056    | ECHU1C562                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |                                    |                 |     |      |           |      |      |
| 0.0068    | ECHU1C682                          | □X5             | 2.0 | 1.25 | 0.9       | J1   |                                    |                 |     |      |           |      |      |
| 0.0082    | ECHU1C822                          | □X5             | 2.0 | 1.25 | 1.1       | J2   |                                    |                 |     |      |           |      |      |
| 0.01      | ECHU1C103                          | □X5             | 2.0 | 1.25 | 1.1       | J2   |                                    |                 |     |      |           |      |      |
| 0.012     | ECHU1C123                          | □X5             | 3.2 | 1.6  | 0.9       | H1   |                                    |                 |     |      |           |      |      |
| 0.015     | ECHU1C153                          | □X5             | 3.2 | 1.6  | 0.9       | H1   |                                    |                 |     |      |           |      |      |
| 0.018     | ECHU1C183                          | □X5             | 3.2 | 1.6  | 0.9       | H1   |                                    |                 |     |      |           |      |      |
| 0.022     | ECHU1C223                          | □X5             | 3.2 | 1.6  | 0.9       | H1   |                                    |                 |     |      |           |      |      |
| 0.027     | ECHU1C273                          | □X5             | 3.2 | 1.6  | 1.1       | H2   |                                    |                 |     |      |           |      |      |
| 0.033     | ECHU1C333                          | □X5             | 3.2 | 1.6  | 1.1       | H2   |                                    |                 |     |      |           |      |      |
| 0.039     | ECHU1C393                          | □X5             | 3.2 | 1.6  | 1.5       | H3   |                                    |                 |     |      |           |      |      |
| 0.047     | ECHU1C473                          | □X5             | 3.2 | 1.6  | 1.5       | H3   |                                    |                 |     |      |           |      |      |
| 0.056     | ECHU1C563                          | □X5             | 3.2 | 2.5  | 1.5       | G2   |                                    |                 |     |      |           |      |      |
| 0.068     | ECHU1C683                          | □X5             | 3.2 | 2.5  | 1.5       | G2   |                                    |                 |     |      |           |      |      |
| 0.082     | ECHU1C823                          | □X5             | 3.2 | 2.5  | 2.1       | G3   |                                    |                 |     |      |           |      |      |
| 0.1       | ECHU1C104                          | □X5             | 3.2 | 2.5  | 2.1       | G3   |                                    |                 |     |      |           |      |      |

Capacitance tolerance code

## ■Example for Land Dimensions (mm)

