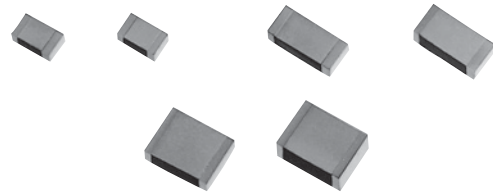


Stacked Metallized PPS Film Chip Capacitor

Type : **ECHU(X)**

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



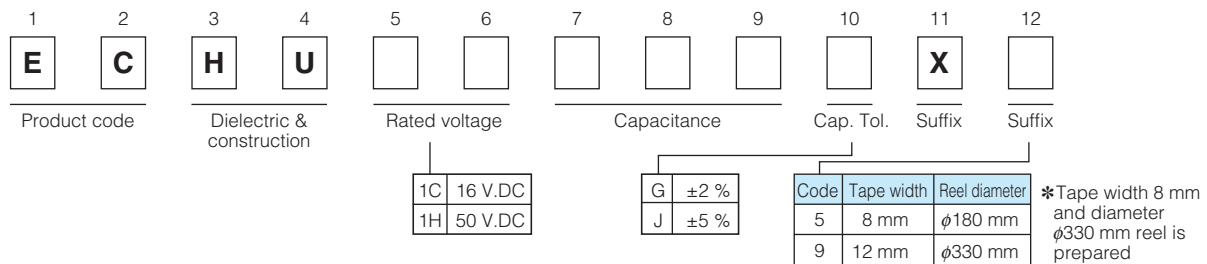
Features

- Small in size (Minimum size 1.6 mm × 0.8 mm)
- 85 °C, 85 %RH, W.V. × 1.0 for 500 hours
- For reflow soldering
- RoHS directive compliant

Recommended applications

- Time-constant
- Filtering
- Oscillation and resonance
- Audio circuit

Explanation of part number



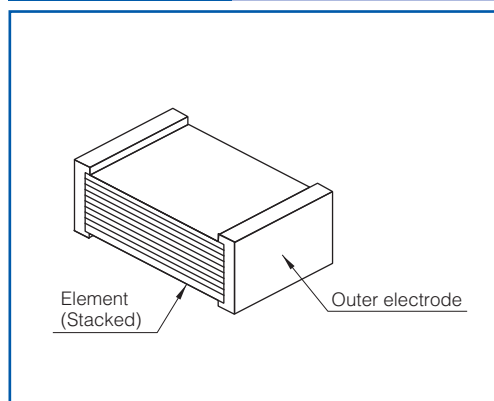
Specifications

| | |
|--|--|
| Category temp. range (Including temperature-rise on unit surface) | - 55 °C to +125 °C |
| Rated voltage | 16 V.DC, 50 V.DC (50 V.DC : 0.12 μF or more : Derating or rated voltage by 1.25 % / °C at more than 105 °C) |
| Capacitance range | 0.00010 μF to 0.22 μF (E12) |
| Capacitance tolerance | ±2 % (G), ±5 % (J) |
| Dissipation factor (tan δ) | tan δ ≤ 0.6 % (20 °C, 1 kHz) |
| Withstand voltage | Between terminals : Rated volt. (V.DC) × 150 %, 60 s |
| Insulation resistance (IR) | 16 V.DC : IR ≥ 3000 MΩ (20 °C, 10 V.DC, 60 s) 50 V.DC : IR ≥ 3000 MΩ (20 °C, 50 V.DC, 60 s) |
| Soldering conditions | Reflow soldering : 260 °C max. and 95 sec max. at more than 220 °C (Temp. at capacitor surface) |

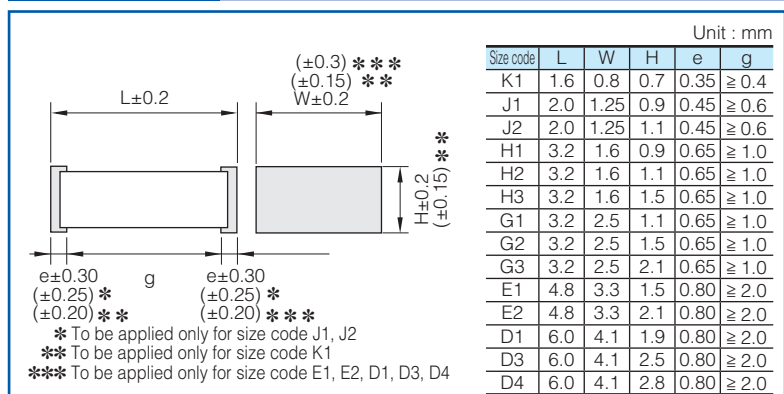
* Please consult us for flow soldering

* In case of applying voltage in alternating current (50 Hz or 60 Hz sine wave) to a capacitor with DC rated voltage, please refer to the page of "Permissible voltage (R.M.S) in alternating current corresponding to DC rated voltage".

Construction



Dimensions



Taping specification for automatic mounting

Refer to the page of taping specifications

Rating · Dimensions · Quantity

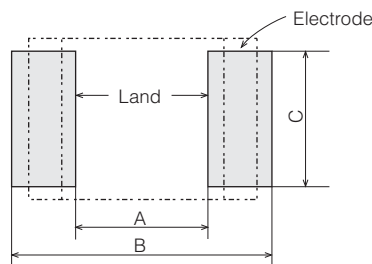
- Capacitance tolerance : $\pm 2\%$ (G), $\pm 5\%$ (J)

| Capacitance (μF) | Rated voltage 16 V.DC | | | | | Rated voltage 50 V.DC | | | | | | |
|----------------------------------|-----------------------|-----------------|------|-----|-----------|-----------------------|--------------|-----------------|------|-----|-----------|------|
| | Part No. | Dimensions (mm) | | | Size code | Q'ty | Part No. | Dimensions (mm) | | | Size code | Q'ty |
| | | L | W | H | | | | L | W | H | | |
| 0.00010 | ECHU1C101□X5 | 1.6 | 0.8 | 0.7 | K1 | 4000 | ECHU1H101□X5 | 2.0 | 1.25 | 0.9 | J1 | 3000 |
| 0.00012 | ECHU1C121□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H121□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00015 | ECHU1C151□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H151□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00018 | ECHU1C181□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H181□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00022 | ECHU1C221□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H221□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00027 | ECHU1C271□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H271□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00033 | ECHU1C331□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H331□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00039 | ECHU1C391□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H391□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00047 | ECHU1C471□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H471□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00056 | ECHU1C561□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H561□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00068 | ECHU1C681□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H681□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.00082 | ECHU1C821□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H821□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.0010 | ECHU1C102□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H102□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.0012 | ECHU1C122□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H122□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.0015 | ECHU1C152□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H152□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.0018 | ECHU1C182□X5 | 1.6 | 0.8 | 0.7 | K1 | | ECHU1H182□X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.0022 | ECHU1C222□X5 | 1.6 | 0.8 | 0.7 | K1 | ECHU1H222□X5 | 2.0 | 1.25 | 0.9 | J1 | | |
| 0.0027 | ECHU1C272□X5 | 1.6 | 0.8 | 0.7 | K1 | ECHU1H272□X5 | 2.0 | 1.25 | 0.9 | J1 | | |
| 0.0033 | ECHU1C332□X5 | 2.0 | 1.25 | 0.9 | J1 | ECHU1H332□X5 | 3.2 | 1.6 | 0.9 | H1 | 2000 | |
| 0.0039 | ECHU1C392□X5 | 2.0 | 1.25 | 0.9 | J1 | ECHU1H392□X5 | 3.2 | 1.6 | 0.9 | H1 | | |
| 0.0047 | ECHU1C472□X5 | 2.0 | 1.25 | 0.9 | J1 | ECHU1H472□X5 | 3.2 | 1.6 | 0.9 | H1 | | |
| 0.0056 | ECHU1C562□X5 | 2.0 | 1.25 | 0.9 | J1 | ECHU1H562□X5 | 3.2 | 1.6 | 0.9 | H1 | | |
| 0.0068 | ECHU1C682□X5 | 2.0 | 1.25 | 0.9 | J1 | ECHU1H682□X5 | 3.2 | 1.6 | 0.9 | H1 | | |
| 0.0082 | ECHU1C822□X5 | 2.0 | 1.25 | 1.1 | J2 | ECHU1H822□X5 | 3.2 | 1.6 | 1.1 | H2 | | |
| 0.010 | ECHU1C103□X5 | 2.0 | 1.25 | 1.1 | J2 | ECHU1H103□X5 | 3.2 | 1.6 | 1.1 | H2 | | |
| 0.012 | ECHU1C123□X5 | 3.2 | 1.6 | 0.9 | H1 | ECHU1H123□X5 | 3.2 | 2.5 | 1.1 | G1 | | |
| 0.015 | ECHU1C153□X5 | 3.2 | 1.6 | 0.9 | H1 | ECHU1H153□X5 | 3.2 | 2.5 | 1.1 | G1 | | |
| 0.018 | ECHU1C183□X5 | 3.2 | 1.6 | 0.9 | H1 | ECHU1H183□X5 | 3.2 | 2.5 | 1.5 | G2 | | |
| 0.022 | ECHU1C223□X5 | 3.2 | 1.6 | 0.9 | H1 | ECHU1H223□X5 | 3.2 | 2.5 | 1.5 | G2 | | |
| 0.027 | ECHU1C273□X5 | 3.2 | 1.6 | 1.1 | H2 | ECHU1H273□X5 | 3.2 | 2.5 | 1.5 | G2 | | |
| 0.033 | ECHU1C333□X5 | 3.2 | 1.6 | 1.1 | H2 | ECHU1H333□X5 | 3.2 | 2.5 | 2.1 | G3 | | |
| 0.039 | ECHU1C393□X5 | 3.2 | 1.6 | 1.5 | H3 | ECHU1H393□X5 | 3.2 | 2.5 | 2.1 | G3 | | |
| 0.047 | ECHU1C473□X5 | 3.2 | 1.6 | 1.5 | H3 | ECHU1H473□X9 | 4.8 | 3.3 | 1.5 | E1 | | 3000 |
| 0.056 | ECHU1C563□X5 | 3.2 | 2.5 | 1.5 | G2 | ECHU1H563□X9 | 4.8 | 3.3 | 1.5 | E1 | | |
| 0.068 | ECHU1C683□X5 | 3.2 | 2.5 | 1.5 | G2 | ECHU1H683□X9 | 4.8 | 3.3 | 1.5 | E1 | | |
| 0.082 | ECHU1C823□X5 | 3.2 | 2.5 | 2.1 | G3 | ECHU1H823□X9 | 4.8 | 3.3 | 2.1 | E2 | | |
| 0.10 | ECHU1C104□X5 | 3.2 | 2.5 | 2.1 | G3 | ECHU1H104□X9 | 4.8 | 3.3 | 2.1 | E2 | | |
| 0.12 | | | | | | ECHU1H124□X9 | 6.0 | 4.1 | 1.9 | D1 | 2000 | |
| 0.15 | | | | | | ECHU1H154□X9 | 6.0 | 4.1 | 1.9 | D1 | | |
| 0.18 | | | | | | ECHU1H184□X9 | 6.0 | 4.1 | 2.5 | D3 | | |
| 0.22 | | | | | | ECHU1H224□X9 | 6.0 | 4.1 | 2.8 | D4 | | |

* □ : Capacitance tolerance code

Recommended for land dimensions

Unit : mm



| Size code | Land dimensions | | |
|------------|------------------|-----|-----|
| | Reflow soldering | | |
| | A | B | C |
| K1 | 0.6 | 2.0 | 0.7 |
| J1, J2 | 0.8 | 2.4 | 1.1 |
| H1, H2, H3 | 1.8 | 3.6 | 1.4 |
| G1, G2, G3 | 1.8 | 3.6 | 2.3 |
| E1, E2 | 3.0 | 5.6 | 3.0 |
| D1, D3, D4 | 4.0 | 7.0 | 3.8 |

* It is not warrantable that you can mount the capacitor without trouble under all the mounting condition when "Recommender for Land dimensions" is adopted.