

Stacked Metallized PPS Film Chip Capacitor

Type: **ECHU(X)**

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

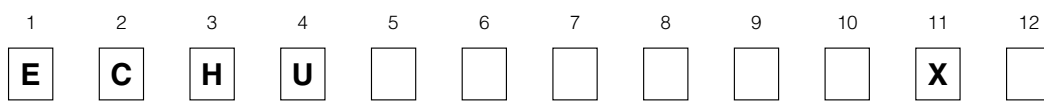
■Features

- 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

■Explanation of Part Numbers



Product code Dielectric & construction Rated voltage Capacitance Cap. Tol. Suffix Suffix

| | |
|----|--------|
| 01 | 10 VDC |
| 1C | 16 VDC |
| 1H | 50 VDC |

| | |
|---|------|
| G | ±2 % |
| J | ±5 % |

| | |
|---|-----------------------|
| | Tape width |
| | Reel diameter |
| 5 | 8 mm size ø180 mm |
| 9 | 12 mm size ø330 mm |

* Tape width 8 mm and diameter ø330 mm reel is prepared.

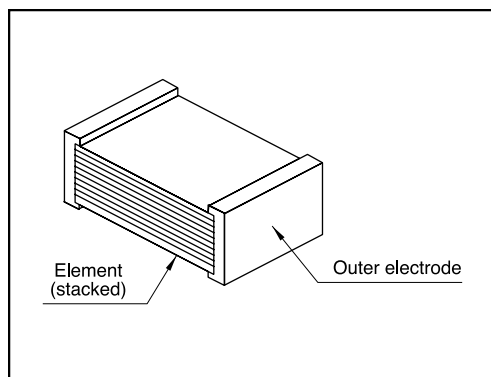
■Specifications

| | |
|--|---|
| Category temp. range (Including temperature-rise on unit surface) | -55 °C to +125 °C |
| Rated voltage | 10 VDC, 16 VDC, 50 VDC (50 VDC: 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) |
| Withstand voltage | Between terminals : Rated volt. (VDC) × 150 % 60 s |
| Dissipation factor (tan δ) | tan δ ≤ 0.6 % (20 °C, 1 kHz) |
| Insulation resistance (IR) | 10 VDC : IR ≥ 3000 MΩ (20 °C, 10 VDC, 60 s) 16 VDC : IR ≥ 3000 MΩ (20 °C, 10 VDC, 60 s) 50 VDC : IR ≥ 3000 MΩ (20 °C, 50 VDC, 60 s) |
| Soldering conditions | Reflow soldering : 260 °C max. and 95 sec max. at more than 220 °C (Temp. at cap. surface) |

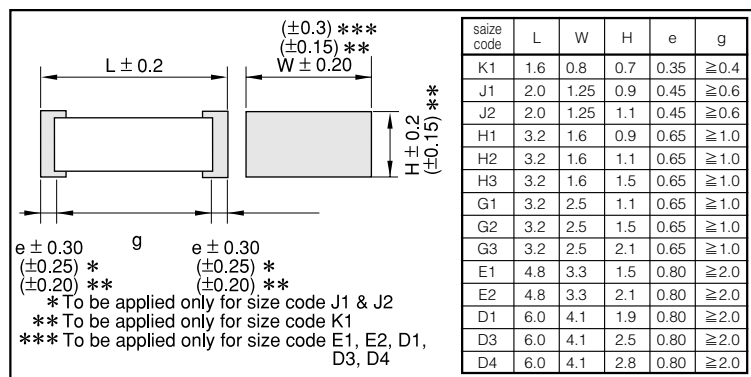
* Please consult us for flow soldering

* 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 in mm (not to scale)



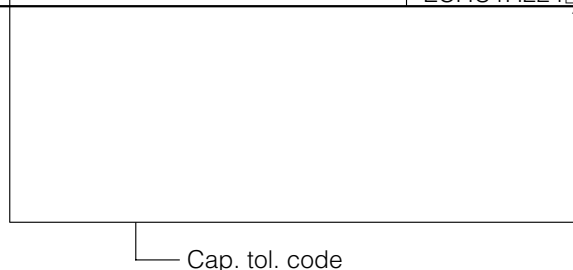
■Taping Specification for Automatic Mounting

Refer to the page of taping specifications

■Rating, Dimensions & Quantity/Reel

●Capacitance tolerance : ±2 % (G), ±5 % (J)

| Cap. (μF) | Rated volt. 16 VDC | | | | | Q'ty | Rated volt. 50 VDC | | | | | Q'ty |
|-----------|--------------------|-----------------|------|-----|-----------|--------------|--------------------|-----------------|------|-----|-----------|------|
| | Part No. | Dimensions (mm) | | | Size Code | | Part No. | Dimensions (mm) | | | Size Code | |
| | | 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 | | |
| 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 | | |
| 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 | | |
| 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 | | |



- Rating, Dimensions & Quantity/Reel
- Capacitance tolerance : ±2 % (G), ±5 % (J)

| Cap. (μF) | Rated volt. 10 VDC | | | | | | |
|-----------|--------------------|-----------------|-----|------|-----------|------|------|
| | Part No. | Dimensions (mm) | | | Size Code | Q'ty | |
| | | L | W | H | | | |
| 0.00010 | | | | | | | |
| 0.00012 | | | | | | | |
| 0.00015 | | | | | | | |
| 0.00018 | | | | | | | |
| 0.00022 | | | | | | | |
| 0.00027 | | | | | | | |
| 0.00033 | | | | | | | |
| 0.00039 | | | | | | | |
| 0.00047 | | | | | | | |
| 0.00056 | | | | | | | |
| 0.00068 | | | | | | | |
| 0.00082 | | | | | | | |
| 0.0010 | | | | | | | |
| 0.0012 | | | | | | | |
| 0.0015 | | | | | | | |
| 0.0018 | | | | | | | |
| 0.0022 | | | | | | | |
| 0.0027 | | | | | | | |
| 0.0033 | ECHU01332 | X5 | 1.6 | 0.8 | 0.7 | K1 | 4000 |
| 0.0039 | ECHU01392 | X5 | 1.6 | 0.8 | 0.7 | K1 | |
| 0.0047 | ECHU01472 | X5 | 1.6 | 0.8 | 0.7 | K1 | |
| 0.0056 | ECHU01562 | X5 | 1.6 | 0.8 | 0.7 | K1 | |
| 0.0068 | ECHU01682 | X5 | 2.0 | 1.25 | 0.9 | J1 | 3000 |
| 0.0082 | ECHU01822 | X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.010 | ECHU01103 | X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.012 | ECHU01123 | X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.015 | ECHU01153 | X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.018 | ECHU01183 | X5 | 2.0 | 1.25 | 0.9 | J1 | |
| 0.022 | ECHU01223 | X5 | 2.0 | 1.25 | 1.1 | J2 | |
| 0.027 | ECHU01273 | X5 | 2.0 | 1.25 | 1.1 | J2 | |
| 0.033 | | | | | | | |
| 0.039 | | | | | | | |
| 0.047 | | | | | | | |
| 0.056 | | | | | | | |
| 0.068 | | | | | | | |
| 0.082 | | | | | | | |
| 0.10 | | | | | | | |

Please use 16 VDC rating of ECHU(X)

Please use 16 VDC rating of ECHU(X)

Cap. tol. code

■ Recommended for Land Dimensions (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.

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[ECH-U1C332JX5](#) [ECH-U1C333GX5](#) [ECH-U1C333JX5](#) [ECH-U1C392JX5](#) [ECH-U1C393GX5](#) [ECH-U1C393JX5](#)
[ECH-U1C472JX5](#) [ECH-U1C473GX5](#) [ECH-U1C473JX5](#) [ECH-U1C562JX5](#) [ECH-U1C563GX5](#) [ECH-U1C563JX5](#)
[ECH-U1C682GX5](#) [ECH-U1C682JX5](#) [ECH-U1C683GX5](#) [ECH-U1C683JX5](#) [ECH-U1C822GX5](#) [ECH-U1C822JX5](#)
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[ECH-U1H103GX5](#) [ECH-U1H103JX5](#) [ECH-U1H121JX5](#) [ECH-U1H122JX5](#) [ECH-U1H123JX5](#) [ECH-U1H152GX5](#)
[ECH-U1H152JX5](#) [ECH-U1H153GX5](#) [ECH-U1H153JX5](#) [ECH-U1H181GX5](#) [ECH-U1H181JX5](#) [ECH-U1H182JX5](#)
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[ECH-U1H271JX5](#) [ECH-U1H272GX5](#) [ECH-U1H272JX5](#) [ECH-U1H273GX5](#) [ECH-U1H273JX5](#) [ECH-U1H331JX5](#)
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