



**THE DATASHEET OF
ECH-U1H221JB5**



Film Chip Capacitor

Type: **ECHU(B)**

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 both flow and reflow soldering

■ Recommended Applications

- ◆ Time-constant
- ◆ Filtering
- ◆ Oscillation and resonance

■ Explanation of Part Numbers



■ Specifications

| | |
|-----------------------|--|
| Category temp. range | -5 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 | 10VDC: ≥3000MΩ (20°C, 10VDC 60s) 50VDC: ≥3000MΩ (20°C, 50VDC 60s) |
| Soldering conditions | Flow soldering: 260°C max. 5sec max. Reflow soldering: 260°C max. and 30sec max. at more than 230°C (Temp. at cap. surface) |

■ Construction



■ Dimensions in mm (not to scale)



■Taping Specification for Automatic Insertion(Mounting)

Refer to the PDF file of taping specifications

■Rating, Dimensions & Quantity/Reel

| Cap. (μF) | Rated volt. 16VDC | | | | | | Rated volt. 50VDC | | | | | | | | |
|-----------|------------------------------------|-----------------|-----|------|------|------|-------------------|-----------------|-----|------|------|------|------|----|------|
| | Part No. | Dimensions (mm) | | | Code | Q'ty | Part No. | Dimensions (mm) | | | Code | Q'ty | | | |
| | | L | W | H | | | | L | W | H | | | | | |
| 0.0001 | Please use 50VDC rating of ECHU(B) | | | | | | ECHU1H101 | B5 | 2.0 | 1.25 | 0.8 | J1 | 3000 | | |
| 0.00012 | | | | | | | ECHU1H121 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00015 | | | | | | | ECHU1H151 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00018 | | | | | | | ECHU1H181 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00022 | | | | | | | ECHU1H221 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00027 | | | | | | | ECHU1H271 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00033 | | | | | | | ECHU1H331 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00039 | | | | | | | ECHU1H391 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00047 | | | | | | | ECHU1H471 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00056 | | | | | | | ECHU1H561 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00068 | | | | | | | ECHU1H681 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.00082 | | | | | | | ECHU1H821 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.001 | | | | | | | ECHU1H102 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.0012 | | | | | | | ECHU1H122 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.0015 | | | | | | | ECHU1H152 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.0018 | | | | | | | ECHU1H182 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.0022 | | | | | | | ECHU1H222 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.0027 | | | | | | | ECHU1H272 | B5 | 2.0 | 1.25 | 0.8 | J1 | | | |
| 0.0033 | | ECHU1C332 | B5 | 2.0 | 1.25 | 0.8 | J1 | ECHU1H332 | B5 | 3.2 | 1.6 | 0.8 | | H1 | 2000 |
| 0.0039 | | ECHU1C392 | B5 | 2.0 | 1.25 | 0.8 | J1 | ECHU1H392 | B5 | 3.2 | 1.6 | 0.8 | | H1 | |
| 0.0047 | ECHU1C472 | B5 | 2.0 | 1.25 | 0.8 | J1 | ECHU1H472 | B5 | 3.2 | 1.6 | 0.8 | H1 | | | |
| 0.0056 | ECHU1C562 | B5 | 2.0 | 1.25 | 0.8 | J1 | ECHU1H562 | B5 | 3.2 | 1.6 | 0.8 | H1 | | | |
| 0.0068 | ECHU1C682 | B5 | 2.0 | 1.25 | 0.8 | J1 | ECHU1H682 | B5 | 3.2 | 1.6 | 0.8 | H1 | | | |
| 0.0082 | ECHU1C822 | B5 | 2.0 | 1.25 | 1.0 | J2 | ECHU1H822 | B5 | 3.2 | 1.6 | 1.0 | H2 | | | |
| 0.01 | ECHU1C103 | B5 | 2.0 | 1.25 | 1.0 | J2 | ECHU1H103 | B5 | 3.2 | 1.6 | 1.0 | H2 | | | |
| 0.012 | ECHU1C123 | B5 | 3.2 | 1.6 | 0.8 | H1 | ECHU1H123 | B5 | 3.2 | 2.5 | 1.0 | G1 | | | |
| 0.015 | ECHU1C153 | B5 | 3.2 | 1.6 | 0.8 | H1 | ECHU1H153 | B5 | 3.2 | 2.5 | 1.0 | G1 | | | |
| 0.018 | ECHU1C183 | B5 | 3.2 | 1.6 | 0.8 | H1 | ECHU1H183 | B5 | 3.2 | 2.5 | 1.4 | G2 | | | |
| 0.022 | ECHU1C223 | B5 | 3.2 | 1.6 | 0.8 | H1 | ECHU1H223 | B5 | 3.2 | 2.5 | 1.4 | G2 | | | |
| 0.027 | ECHU1C273 | B5 | 3.2 | 1.6 | 1.0 | H2 | ECHU1H273 | B5 | 3.2 | 2.5 | 1.4 | G2 | | | |
| 0.033 | ECHU1C333 | B5 | 3.2 | 1.6 | 1.0 | H2 | ECHU1H333 | B5 | 3.2 | 2.5 | 2.0 | G3 | | | |
| 0.039 | ECHU1C393 | B5 | 3.2 | 1.6 | 1.4 | H3 | ECHU1H393 | B5 | 3.2 | 2.5 | 2.0 | G3 | | | |
| 0.047 | ECHU1C473 | B5 | 3.2 | 1.6 | 1.4 | H3 | ECHU1H473 | B9 | 4.8 | 3.3 | 1.4 | E1 | | | |
| 0.056 | ECHU1C563 | B5 | 3.2 | 2.5 | 1.4 | G2 | ECHU1H563 | B9 | 4.8 | 3.3 | 1.4 | E1 | | | |
| 0.068 | ECHU1C683 | B5 | 3.2 | 2.5 | 1.4 | G2 | ECHU1H683 | B9 | 4.8 | 3.3 | 1.4 | E1 | | | |
| 0.082 | ECHU1C823 | B5 | 3.2 | 2.5 | 2.0 | G3 | ECHU1H823 | B9 | 4.8 | 3.3 | 2.0 | E2 | | | |
| 0.1 | ECHU1C104 | B5 | 3.2 | 2.5 | 2.0 | G3 | ECHU1H104 | B9 | 4.8 | 3.3 | 2.0 | E2 | | | |

Capacitance tolerance code G, J

■Example for Land Dimensions (mm)

Electrode

| Code | Land dimensions | | | | | |
|------|-----------------|-----|-----|------------------|-----|-----|
| | Flow soldering | | | Reflow soldering | | |
| | A | B | C | A | B | C |
| J1 | 1.0 | 2.7 | 1.1 | 1.0 | 2.7 | 1.1 |
| J2 | 1.0 | 2.7 | 1.1 | 1.0 | 2.7 | 1.1 |
| H1 | 2.2 | 3.8 | 1.4 | 2.2 | 3.8 | 1.4 |
| H2 | 2.2 | 3.8 | 1.4 | 2.2 | 3.8 | 1.4 |
| H3 | 2.2 | 3.8 | 1.4 | 2.2 | 3.8 | 1.4 |
| G1 | 2.2 | 3.8 | 2.3 | 2.2 | 3.8 | 2.3 |
| G2 | 2.2 | 3.8 | 2.3 | 2.2 | 3.8 | 2.3 |
| G3 | 2.2 | 3.8 | 2.3 | 2.2 | 3.8 | 2.3 |
| E1 | 2.6 | 6.6 | 3.0 | 2.6 | 6.6 | 3.0 |
| E2 | 2.6 | 6.6 | 3.0 | 2.6 | 6.6 | 3.0 |

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