

### Film Chip Capacitor

Type: **ECWU(C)**

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

#### ■Features

- Small in size
- Applicable for reflow soldering

#### ■Recommended Applications

- DC Blocking for xDSL

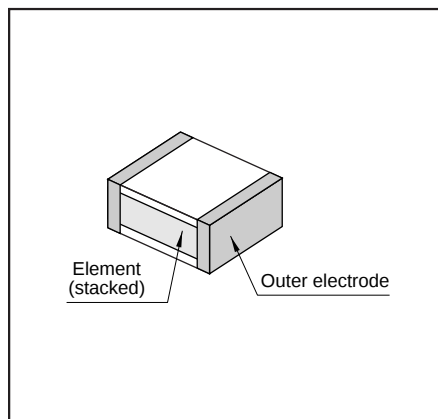
#### ■Explanation of Part Numbers

| 1            | 2                         | 3        | 4             | 5      | 6                | 7 | 8 | 9          | 10                                                                                                           | 11 |
|--------------|---------------------------|----------|---------------|--------|------------------|---|---|------------|--------------------------------------------------------------------------------------------------------------|----|
| <b>E</b>     | <b>C</b>                  | <b>W</b> | <b>U</b>      |        |                  |   |   | <b>V</b>   |                                                                                                              |    |
| Product code | Dielectric & construction |          | Rated voltage |        | Capacitance      |   |   | Suffix     |                                                                                                              |    |
|              |                           |          |               | 2<br>4 | 250VDC<br>400VDC |   |   | V16<br>V17 | for xDSL, Withstand voltage: 400VDC<br>Cap.tol : ±5%<br>for xDSL, Withstand voltage: 600VDC<br>Cap.tol : ±5% |    |

#### ■Specifications

|                       |                                                                                      |                        |
|-----------------------|--------------------------------------------------------------------------------------|------------------------|
| Category temp.range   | -55 to +85°C                                                                         |                        |
| Rated voltage         | 250VDC(V16), 400VDC (V17)                                                            |                        |
| Capacitance range     | 250VDC(V16)                                                                          | 0.001 to 0.12 µF (E12) |
|                       | 400VDC(V17)                                                                          | 0.001 to 0.15 µF (E12) |
| Capacitance tolerance | ±5%(J)                                                                               |                        |
| Withstand voltage     | Between terminals<br>250VDC(V16) : 400VDC 60s<br>400VDC(V17) : 600VDC 60s            |                        |
| Dissipation factor    | ≤1.0%(20°C, 1kHz)                                                                    |                        |
| Insulation resistance | ≥3000MΩ(20°C, 100VDC, 60s)                                                           |                        |
| Soldering conditions  | Reflow soldering<br>230°C max. and 30s max. at more than 210°C (Temp.at cap.surface) |                        |

#### ■Construction



#### ■Dimensions in mm (not to scale)

| Size code | L   | Tol  | W   | Tol  | H   | Tol  |
|-----------|-----|------|-----|------|-----|------|
| E1        | 4.8 |      | 3.3 |      | 1.4 |      |
| E2        | 4.8 |      | 3.3 |      | 2.0 |      |
| E3a       | 4.8 |      | 3.3 |      | 2.4 |      |
| E3        | 4.8 |      | 3.3 |      | 2.8 |      |
| D2        | 6.0 | ±0.2 | 4.1 | ±0.3 | 2.0 | ±0.2 |
| D3        | 6.0 |      | 4.1 |      | 2.4 |      |
| D4        | 6.0 |      | 4.1 |      | 2.8 |      |
| D5        | 6.0 |      | 4.1 |      | 3.2 |      |
| B         | 6.0 |      | 5.0 |      |     |      |
| Z         | 7.1 | ±0.4 | 5.0 |      |     |      |
| Y         | 7.1 |      | 6.3 | ±0.4 | ✱   | ±0.3 |
| V         | 9.8 |      | 6.3 |      |     |      |
| U         | 9.8 | ±0.5 | 8.0 |      |     |      |

✱ Refer to the column "Rating, Dimensions & Quantity".

### ■Taping Specification for Automatic Mounting

See page 24 for automatic mounting.

### ■Rating, Dimensions & Quantity/Reel

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

| Cap.<br>( $\mu$ F) | Rated volt. 250VDC |                 |     |     |           |       | Rated volt. 400VDC |                 |     |     |           |       |
|--------------------|--------------------|-----------------|-----|-----|-----------|-------|--------------------|-----------------|-----|-----|-----------|-------|
|                    | Part No            | Dimensions (mm) |     |     | Size code | Q'ty  | Part No            | Dimensions (mm) |     |     | Size code | Q'ty  |
|                    |                    | L               | W   | H   |           |       |                    | L               | W   | H   |           |       |
| 0.001              | ECWU2102V16        | 4.8             | 3.3 | 1.4 | E1        | 3,000 | ECWU4102V17        | 4.8             | 3.3 | 1.4 | E1        | 3,000 |
| 0.0012             | ECWU2122V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4122V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0015             | ECWU2155V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4155V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0018             | ECWU2182V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4182V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0022             | ECWU2222V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4222V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0027             | ECWU2272V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4272V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0033             | ECWU2332V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4332V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0039             | ECWU2392V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4392V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0047             | ECWU2472V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4472V17        | 4.8             | 3.3 | 1.4 | E1        |       |
| 0.0056             | ECWU2562V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4562V17        | 4.8             | 3.3 | 2.0 | E2        |       |
| 0.0068             | ECWU2682V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4682V17        | 4.8             | 3.3 | 2.0 | E2        |       |
| 0.0082             | ECWU2822V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4822V17        | 4.8             | 3.3 | 2.4 | E3a       | 2,000 |
| 0.01               | ECWU2103V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4103V17        | 4.8             | 3.3 | 2.8 | E3        |       |
| 0.012              | ECWU2123V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4123V17        | 6.0             | 4.1 | 2.0 | D2        | 3,000 |
| 0.015              | ECWU2153V16        | 4.8             | 3.3 | 1.4 | E1        |       | ECWU4153V17        | 6.0             | 4.1 | 2.4 | D3        | 2,000 |
| 0.018              | ECWU2183V16        | 4.8             | 3.3 | 2.0 | E2        |       | ECWU4183V17        | 6.0             | 4.1 | 2.8 | D4        |       |
| 0.022              | ECWU2223V16        | 4.8             | 3.3 | 2.0 | E2        |       | ECWU4223V17        | 6.0             | 4.1 | 3.2 | D5        |       |
| 0.027              | ECWU2273V16        | 4.8             | 3.3 | 2.4 | E3a       | 2,000 | ECWU4273V17        | 6.0             | 5.0 | 3.0 | B         | 1,500 |
| 0.033              | ECWU2333V16        | 4.8             | 3.3 | 2.8 | E3        |       | ECWU4333V17        | 6.0             | 5.0 | 3.6 | B         |       |
| 0.039              | ECWU2393V16        | 6.0             | 4.1 | 2.0 | D2        | 3,000 | ECWU4393V17        | 7.1             | 5.0 | 3.2 | Z         |       |
| 0.047              | ECWU2473V16        | 6.0             | 4.1 | 2.4 | D3        |       | ECWU4473V17        | 7.1             | 5.0 | 3.8 | Z         | 1,000 |
| 0.056              | ECWU2563V16        | 6.0             | 4.1 | 2.8 | D4        | 2,000 | ECWU4563V17        | 7.1             | 6.3 | 3.6 | Y         |       |
| 0.068              | ECWU2683V16        | 6.0             | 4.1 | 3.2 | D5        |       | ECWU4683V17        | 7.1             | 6.3 | 4.4 | Y         |       |
| 0.082              | ECWU2823V16        | 6.0             | 5.0 | 3.2 | B         | 1,500 | ECWU4823V17        | 9.8             | 6.3 | 3.4 | V         | 1,000 |
| 0.1                | ECWU2104V16        | 6.0             | 5.0 | 3.8 | B         |       | ECWU4104V17        | 9.8             | 6.3 | 4.0 | V         |       |
| 0.12               | ECWU2124V16        | 6.0             | 5.0 | 4.5 | B         |       | ECWU4124V17        | 9.8             | 8.0 | 3.8 | U         |       |
| 0.15               |                    |                 |     |     |           |       | ECWU4154V17        | 9.8             | 8.0 | 4.6 | U         |       |

### ■Recommended for Land Dimensions (mm)

The diagram illustrates the dimensions of a capacitor land. It features two gray rectangular electrodes. The distance between the inner edges of these electrodes is labeled 'A'. The width of each electrode is labeled 'B'. The total width from the outer edge of the left electrode to the outer edge of the right electrode is labeled 'B'. The height of the electrodes is labeled 'C'. The area between the electrodes is labeled 'Land'. A dashed line outlines the area defined by dimensions A and C. An arrow points to the top edge of the right electrode, labeled 'Electrode'.

| Size code       | Land dimensions for reflow soldering |      |     |
|-----------------|--------------------------------------|------|-----|
|                 | A                                    | B    | C   |
| E1, E2, E3a, E3 | 2.6                                  | 6.6  | 3.0 |
| D2, D3, D4, D5  | 3.8                                  | 7.8  | 3.8 |
| B               | 3.8                                  | 7.8  | 4.6 |
| Z               | 4.5                                  | 9.0  | 4.6 |
| Y               | 4.5                                  | 9.0  | 5.7 |
| V               | 7.2                                  | 11.9 | 5.7 |
| U               | 7.2                                  | 11.9 | 7.2 |