

# Type EDC, 70 °C Long Life Electric Double Layer Supercapacitor



Type EDC, 70 °C electric double layer supercapacitors offer high capacitance values in a thru hole stacked coin type package. Primarily designed for integrated circuit voltage backup, the capacitors can also be used to deliver the initial power from batteries.

## Highlights

- Long life
- High discharge current
- 70 °C Operating temperature

## Specifications

|   |   |
|---|---|
| <b>Operating Temperature Range</b>                    | -25 °C to +70 °C  |
| <b>Rated Voltage Range</b>                            | 5.5 Vdc to 6.3 Vdc  |
| <b>Capacitance Range</b>                              | 0.047 F to 1.5 F  |
| <b>Life, Moisture and Temperature Characteristics</b> | After the following procedures have been performed, measure the capacitance and ESR at +20 °C.  |
| <b>Life Test:</b>                                     | Apply the max. operating voltage for 1000 h at +70 °C   |
| <b>Capacitance Change</b>                             | ±30% of the initial measured value  |
| <b>ESR</b>  | ≤ 4 times the initial specified value   |
| <b>Shelf Life:</b>                                    | Subject the capacitor to 1000 hours without voltage at +70 °C.  |
| <b>Capacitance Change</b>                             | ±30% of the initial measured value  |
| <b>ESR</b>  | ≤ 4 times the initial specified value   |
| <b>Moisture Resistance:</b>                           | Subject the capacitor to 240 hours at +40 °C at 90 to 95% RH without voltage.   |
| <b>Capacitance Change</b>                             | ±30% of the initial measured value  |
| <b>ESR</b>  | ≤ 3 times the initial specified value   |
| <b>Temperature Cycling</b>                            | Stabilize the capacitor at each of the following temperatures for 1 hour in sequence, and then measure the capacitance and ESR at that temperature. |
|   | <ol style="list-style-type: none"> <li>1. +20 °C</li> <li>2. -25 °C</li> <li>3. +20 °C</li> <li>4. +70 °C</li> <li>5. +20 °C</li> </ol>             |
| <b>Capacitance Change (at -25 °C)</b>                 | ±30% of the initial measured value  |
| <b>ESR (at -25 °C)</b>                                | ≤ 5 times the initial measured value  |
| <b>Capacitance Change (at +85 °C)</b>                 | ±30% of the initial measured value  |
| <b>ESR (at +85 °C)</b>                                | ≤ 4 times the initial measured value  |
| <b>Capacitance Change (Step 5 at +20 °C)</b>          | ±10% of the initial measured value  |
| <b>ESR (Step 5 at +20 °C)</b>                         | meets the initial specified value   |
| <b>RoHS Compliant without Exemptions</b>              |   |

# Type EDC, 70 °C Long Life Electric Double Layer Supercapacitor Ratings

| 5.5 VDC         |       |                    |           |        |        |
|-----------------|-------|--------------------|-----------|--------|--------|
| CDE Part Number | Cap F | ESR 1 kHz $\Omega$ | Case Code |        |        |
|                 |       |                    | V Type    | H Type | C Type |
| EDC473Z5R5*     | 0.047 | 120                | V1        | H1     | C1     |
| EDC104Z5R5*     | 0.1   | 75                 | V1        | H1     | C1     |
| EDC224Z5R5*     | 0.22  | 75                 | V1        | H1     | C1     |
| EDC334Z5R5*     | 0.33  | 75                 | V1        | H1     | C1     |
| EDC474Z5R5*     | 0.47  | 50                 | V1        | H1     | C1     |
| EDC105Z5R5*     | 1     | 30                 | V2        | H2     | C2     |
| EDC155Z5R5*     | 1.5   | 30                 | V2        | H2     | C2     |

\*V, H, or C

| 6.3 VDC         |       |                    |           |
|-----------------|-------|--------------------|-----------|
| CDE Part Number | Cap F | ESR 1 kHz $\Omega$ | Case Code |
| EDC104Z6R3C     | 0.1   | 120                | C3        |
| EDC224Z6R3C     | 0.22  | 75                 | C3        |
| EDC334Z6R3C     | 0.33  | 75                 | C3        |
| EDC474Z6R3C     | 0.47  | 50                 | C4        |
| EDC684Z6R3C     | 0.68  | 50                 | C4        |
| EDC105Z6R3C     | 1     | 30                 | C4        |

## Part Numbering System

**EDC**  
Series

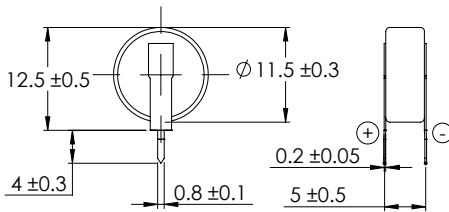
**224**  
Capacitance  
224 = 0.22 F  
473 = 0.047 F  
105 = 1.0 F

**Z**  
Tolerance  
-20/+80%

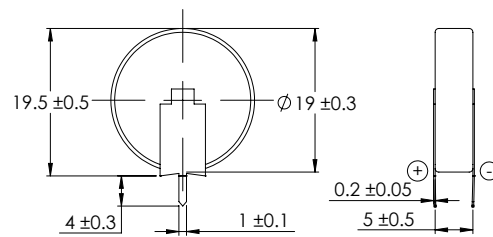
**5R5**  
Voltage  
5R5 = 5.5 Vdc

**C**  
Case Style  
C = Radial  
H = Horizontal Style  
V = Vertical Style

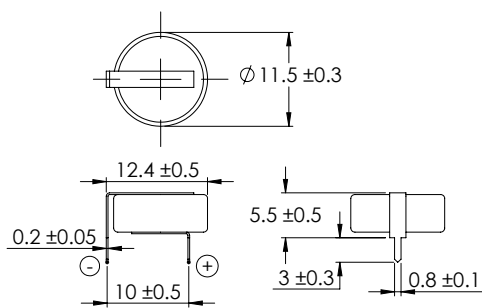
## EDC Outline Drawing



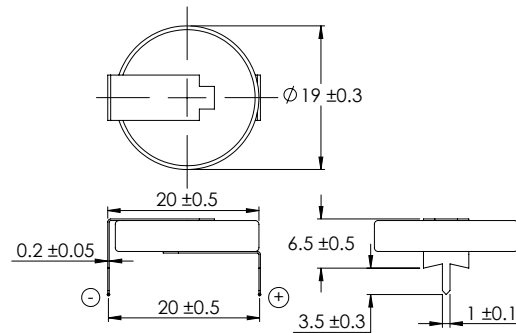
V1



V2



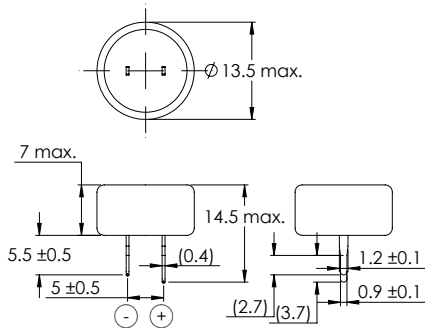
H1



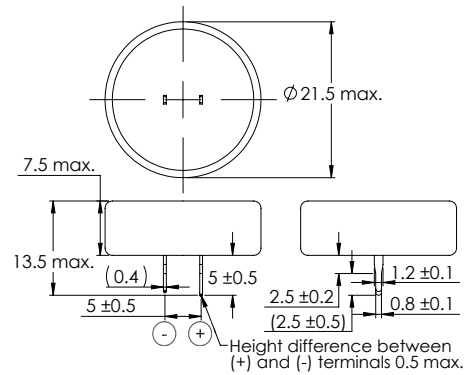
H2

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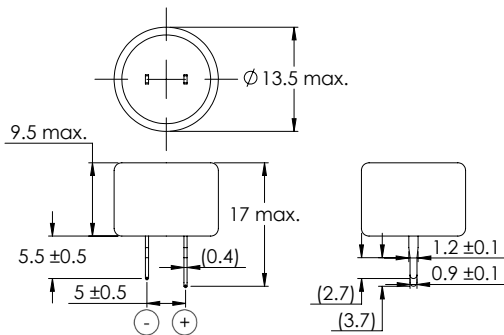
## EDC Outline Drawing



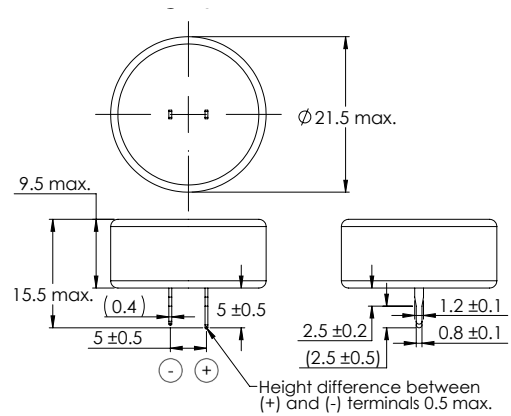
C1



C2



C3



C4

### Recommended Soldering Procedures

|                |  |
|----------------|--|
| Hand Soldering | Use a 30W iron with a max. temperature of 350 °C for 3 seconds.  |
| Wave Soldering | Pre-heat circuit board to a surface temp of 110 °C for a max. of 60 seconds, with a max. component temperature of 100 °C. Min. printed circuit board thickness of 0.8 mm. Recommended solder bath temperature of 240 °C with a max. dipping time of 5 seconds. |