

# LSUC 002R8L 0400F EA

The Ultracapacitor, also known as double-layer capacitor, stores energy by means of a static charge as opposed to a battery

It is used for energy storage applications which undergo very frequent charge and discharge cycles at high current and short duration. It features a wide operating temperature range, making it an ideal energy storage device for extreme environments.

It can be applied in wind power, hybrid systems, industrial automation, power backup and stabilization. Imagination is its only boundary.



## PERFORMANCE SPECIFICATIONS

|                              |            |
|------------------------------|------------|
| Rated Voltage(Nominal)       | 2.8 V      |
| Surge Voltage                | 3.0 V      |
| Capacitance                  | 400 F      |
| Capacitance Tolerance        | 0% / + 20% |
| Max. ESR DC                  | 3.0 mΩ     |
| Max. ESR AC (1 kHz)          | 2.8 mΩ     |
| Typical ESR AC <sup>1</sup>  | 2.5 mΩ     |
| Total Energy                 | 0.43 Wh    |
| Max. Current <sup>2</sup>    | 255 A      |
| Leakage Current <sup>2</sup> | < 1 mA     |

<sup>1</sup> Internal control value

<sup>2</sup> The stated maximum peak current should not be used in normal operation and is only provided as a reference value.

## THERMAL SPECIFICATIONS

|   |      |
|---|------|
| Max. Continuous Current $\Delta T=15\text{ }^{\circ}\text{C}^7$ | 25 A |
| Max. Continuous Current $\Delta T=40\text{ }^{\circ}\text{C}^7$ | 40 A |
| Thermal Resistance ( $^{\circ}\text{C}/\text{W}$ ) <sup>8</sup> | 8.3  |

<sup>7</sup>Initial state value.

<sup>8</sup>The specification is calculated under limited conditions.

## MECHANICAL SPECIFICATIONS<sup>9</sup>

|               |              |
|---------------|--------------|
| D1 + 1.0 mm   | 35           |
| L ± 2.0 mm    | 66           |
| Mount Options | Lug          |
| Weight        | 80 g         |
| Safety Vent   | Bottom Notch |

<sup>9</sup>Dimensions and weight may differ with terminals and it may change without notice.

## ENVIRONMENTAL SPECIFICATIONS

|                         |                            |
|-------------------------|----------------------------|
| Operating Temperature   | -40°C to 65°C              |
| Operating Humidity (RH) | Up to 95%, condensing      |
| Storage Conditions      | -20°C to 25°C Up to 85% RH |

## LIFE INFORMATION

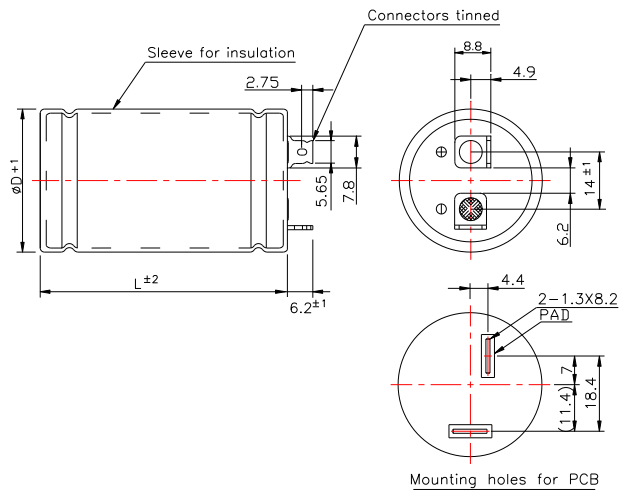
|   |                |
|---|----------------|
| Endurance Life (65 °C)                    | 1500hr         |
| Capacitance Change <sup>3</sup>           | < 20%          |
| ESR DC Change <sup>4</sup>                | < 100%         |
| Projected Life (25 °C)                    | 10 Years       |
| Capacitance Change <sup>3</sup>           | < 20%          |
| ESR DC Change <sup>4</sup>                | < 100%         |
| Projected Cycle Life (25 °C) <sup>5</sup> | 500,000 Cycles |
| Capacitance Change <sup>3</sup>           | < 20%          |
| ESR DC Change <sup>4</sup>                | < 100%         |
| Shelf Life (25 °C) <sup>6</sup>           | 4 Years        |

<sup>3</sup> Decrease from minimum Capacitance value.

<sup>4</sup> Increase from Max. ESR value.

<sup>5</sup> Cycle Life may vary for different working conditions. (e.g. voltage or temperature)

<sup>6</sup> Stored uncharged state under appropriate storage conditions.



## COMPLIANCE SPECIFICATIONS

|                   |   |
|-------------------|---|
| Certifications    | UL810A – MH46367                              |
| Environmental     | RoHS, REACH                                   |
| Shock & Vibration | IEC 60068-2-27 : 2008<br>IEC 60068-2-6 : 2007 |

**VERSION HISTORY**

| Current Version | Previous Version | Date       | Author     | Change Description               |
|-----------------|------------------|------------|------------|----------------------------------|
| A               | -                | 2017-07-27 | Horim Kang | Initial version of Specification |
| B               | A                | 2020-04-10 | Horim Kang | Data sheet amendment             |
| C               | B                | 2021-04-22 | Insoo Park | Data Sheet revision              |
|                 |                  |            |            |                                  |

**Markings**

- Positive / Negative terminal
- Serial number
- Part number
- Warning marking

**Accessories**

Notice : Product dimensions and specifications may change without notice. Please contact LS Mtron for any technical specifications.