

# LOW LEAKAGE CURRENT ULTRACAPACITOR MODULES

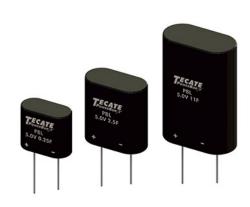
# **FEATURES**

- Small size and low resistance
- Quick charge and discharge
- RoHS compliant
- UL recognized

## **APPLICATIONS**

- Pulse power demand
- Hybrid battery packs
- Portable electronic devices





#### **GENERAL SPECIFICATIONS**

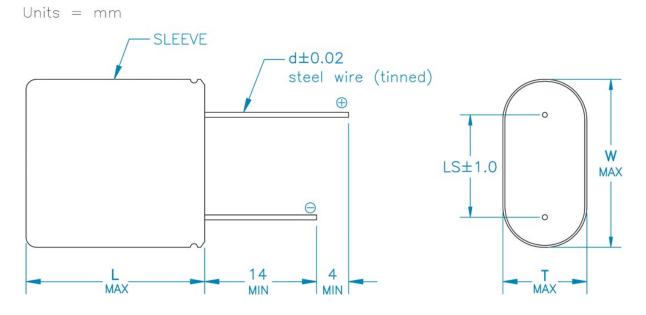
| Item   | Performance  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|
| Operating temperature                            | -40°C to +65°C @ 5V  |  |  |  |  |  |  |  |
|  | -40°C to +85°C @ 4.6V  |  |  |  |  |  |  |  |
| Storage temperature                              | -40°C to +70°C   |  |  |  |  |  |  |  |
| Capacitance                                      | 5F   |  |  |  |  |  |  |  |
| Rated voltage                                    | 5 VDC / 4.6 VDC  |  |  |  |  |  |  |  |
| Surge voltage                                    | 5.7 VDC  |  |  |  |  |  |  |  |
| Temperature characteristics                      | Capacitance change: Within ±5% of initial measured value at +25°C (-40°C to +85°C)           |  |  |  |  |  |  |  |
|  | Internal resistance: Within $\pm$ 50% of initial measured value at +25°C (at -40°C)          |  |  |  |  |  |  |  |
| Endurance  | After 1000 hours, the capacitor shall meet the following limits:                             |  |  |  |  |  |  |  |
| (At rated voltage & max. operating               | Capacitance change: ±30% of initial rated value  |  |  |  |  |  |  |  |
| temp)  | mp) Internal resistance: Within 2 times of initial specified value                           |  |  |  |  |  |  |  |
| Projected Load life<br>(At rated voltage & 25°C) | After 10 years:  |  |  |  |  |  |  |  |
|  | Capacitance change: Within ±30 % of initial rated value                                      |  |  |  |  |  |  |  |
|  | Internal resistance: Within 2 times of initial specified value                               |  |  |  |  |  |  |  |
| Projected cycle life                             | After 500,000 cycles:  |  |  |  |  |  |  |  |
| (From rated voltage to 1/2 rated                 | Capacitance change: Within ±30 % of initial rated value                                      |  |  |  |  |  |  |  |
| voltage at 25°C)                                 | Internal resistance: Within 2 times of initial specified value                               |  |  |  |  |  |  |  |
| Shelf life                                       | After 2 years at 25°C without load, the capacitor shall meet the specified endurance limits. |  |  |  |  |  |  |  |

7520 Mission Valley Road • San Diego, CA 92108-4400 USA • Tel: 619.398.9700 • Fax: 619.398.9777 • www.tecategroup.com



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# DIMENSIONS



## **STANDARD PRODUCTS**

| Part Number   | Nom. Cap.<br>(F) GMV (F)* | ESR DC    | ESR AC<br>(mΩ)       | Leakage Current<br>(mA) | Dimensions (mm)          |    |    |    |     | Rated |             |
|---------------|---------------------------|-----------|----------------------|-------------------------|--------------------------|----|----|----|-----|-------|-------------|
|               |                           | GIVIV (F) | <b>(m</b> Ω <b>)</b> | (1 KHz)                 | (111A)<br>(72 hrs @ 25C) | L  | w  | т  | d   | LS    | Current (A) |
| PBL-5.0/5.0NB | 5                         | 4.5       | 170                  | 120                     | 0.08                     | 35 | 22 | 12 | 0.6 | 15.4  | 7.3         |

\*NOTE: GMV = Guaranteed Minimum Value.