

LOW LEAKAGE CURRENT ULTRACAPACITOR MODULES

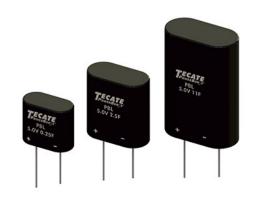
FEATURES

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

APPLICATIONS

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





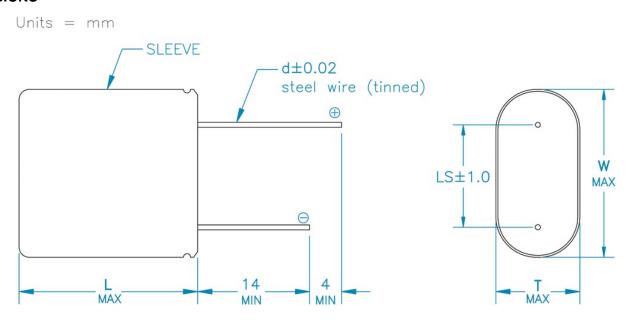
GENERAL SPECIFICATIONS

Item	Performance							
Operating temperature	-40°C to +65°C @ 5V							
Operating temperature	-40°C to +85°C @ 4.6V							
Storage temperature	-40°C to +70°C							
Capacitance	4F							
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 ±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)	Internal resistance: Within 2 times of initial specified value							
Ducingtod Lond life	After 10 years:							
Projected Load life	Capacitance change: Within ±30 % of initial rated value							
(At rated voltage & 25°C)	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.							



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DIMENSIONS



STANDARD PRODUCTS

Part Number	Nom. Cap. (F)	GMV (F)*	ESR DC (mΩ)	ESR AC (mΩ) (1 KHz)	Leakage Current (mA) (72 hrs @ 25C)	Dimensions (mm)					Rated
						L	w	Т	d	LS	Current (A)
PBL-4.0/5.0NB	4	3.6	200	120	0.03	30	22	12	0.6	15.4	6

^{*}NOTE: GMV = Guaranteed Minimum Value.