



Datasheet

16V 500F Ultracapacitor Module

GTSM-16V-500FUSC



FEATURES AND BENEFITS

- Compact, fully enclosed splash proof design
- Highest power performance
- Individually balanced cells
- Over 1,000,000 duty cycles
- Ultra-low internal resistance

TYPICAL APPLICATIONS

- Wind turbine pitch control
- Heavy industrial equipment
- Telecommunications
- Railway transportation
- Uninterruptible Power Supplies (UPS)

SPECIFICATIONS

ELECTRICAL

Capacitance

Nominal capacitance	500 F
Capacitance tolerance	+20% / -0%

Voltage

Rated voltage	16 V
Maximum absolute voltage	17 V
Maximum series voltage	750 V

Resistance

ESR, DC	1.8 mΩ
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Current

Maximum continuous current ($\Delta T=40^{\circ}C$)	100 A
Maximum peak current, 1 sec.	2,275 A
Maximum leakage current (after 72hrs @ 25°C)	5.2 mA

TEMPERATURE

Operating temperature range

(Cell case temperature)	-40°C to +65°C
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Storage temperature range

(Storage uncharged)	-40°C to +70°C
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PHYSICAL

Weight	5.7 kg
Power terminals	M8/M10
Recommended torque - terminal	20/30 Nm
Vibration specification	GB-T 11287-2000
Shock specification	GBT 14537-1993
Environmental protection	IP65

MONITORING / CELL VOLTAGE MANAGEMENT

Internal temperature sensor	NTC Thermistor
Cell voltage monitoring	Overvoltage Alarm

POWER AND ENERGY

Usable power density (Pd)	3,590 W/kg
Impedance match power density (Pmax)	7,480 W/kg
Gravimetric energy density (E _{max})	3.1 Wh/kg
Energy available	17.8 Wh

LIFE

High temperature

(at rated voltage & maximum operating temperature)	1,500 hours
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Capacitance change

(% decrease from minimum initial value)	≤20%
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ESR change

(% increase from minimum initial value)	≤100%
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Room temperature

(at Rated Voltage at 25°C)	10 years
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Capacitance change

(% decrease from minimum initial value)	≤20%
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ESR change

(% increase from minimum initial value)	≤100%
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Cycle Life

(Number of cycles)	1,000,000
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Capacitance change

(% decrease from minimum initial value)	≤20%
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ESR change

(% increase from minimum initial value)	≤100%
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Shelf life

(Stored uncharged up to a maximum storage temperature)	2 years
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SAFETY

Short circuit current

(Current possible with short circuit from rated voltage. Do not use as an operating current.)	8000 A
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Factory high-pot test

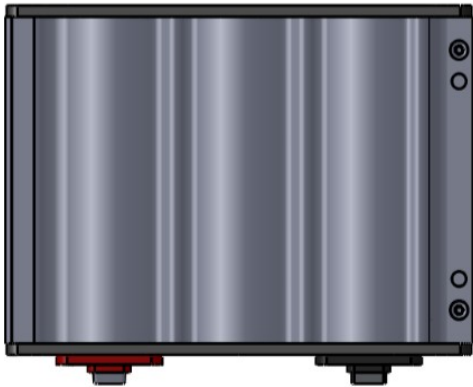
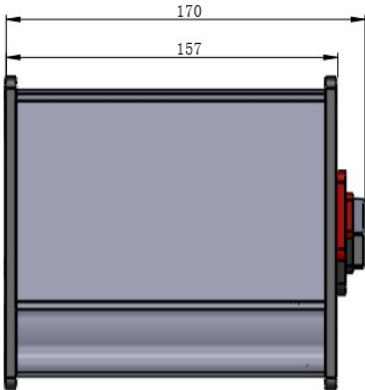
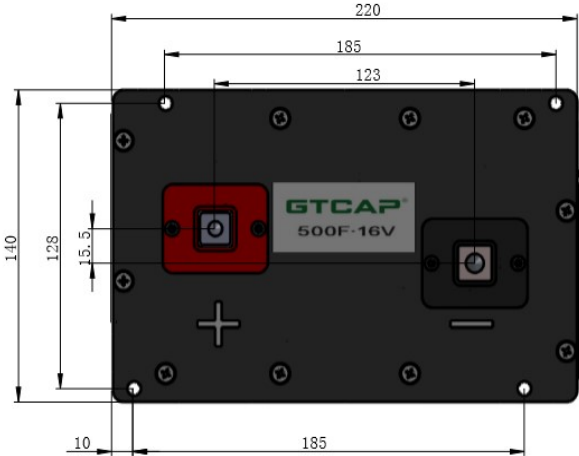
	2,500 V/DC
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Part Number	Dimension (mm)			Package Quantity(set)
	L (±0.5mm)	W (±0.5mm)	H (±0.5mm)	
GTSM-16V-500FUSC	220.0	140.0	170.0	2

Product dimensions are for reference only unless otherwise specified. Product dimensions and specifications may change without notice. Please contact GTCAP directly for any technical specifications critical to application.