

Datasheet

48V 165F Ultra Capacitor Module



GTSM-48V165FUS



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

SPECIFICATIONS

ELECTRICAL

Capacitance

Nominal capacitance	165 F
Capacitance tolerance	+20% / -10%

Voltage

Rated voltage	48 V
Maximum absolute voltage	51 V
Maximum series voltage	750 V

Resistance

ESR, DC	5 mΩ
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Current

Maximum continuous current ($\Delta T=40^{\circ}\text{C}$)	100 A
Maximum peak current, 1 sec.	2,275 A
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

14.5 kg

Positive Terminal

M8 Screw Hole

Negative Terminal

M10 Screw Hole

Recommended Torque - Terminal

20/30 Nm

Vibration Specification

SAE J2380
ISO16750-2, T14

Shock Specification

SAE J2464

Cooling

Natural Convection

Environmental Protection

IP65

MONITORING / CELL VOLTAGE MANAGEMENT

Internal Temperature Sensor

NTC Thermistor

Cell Voltage Monitoring

Overvoltage Alarm

TYPICAL APPLICATIONS

- Electric vehicle
- Fork lift, Cranes
- Telecommunications
- Railway transportation
- Engine starting

POWER AND ENERGY

Usable Power Density (Pd)	3,850 W/kg
Impedance Match Power Density (Pmax)	8,000 W/kg
Gravimetric Energy Density (Emax)	3.8 Wh/kg
Energy Available	52.8 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 times
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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)	3 Years
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SAFETY

Short Circuit Current (Isc)

(Current possible with short circuit from rated voltage. Do not use as an operating current.)	8,500 A
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Factory High-Pot Test

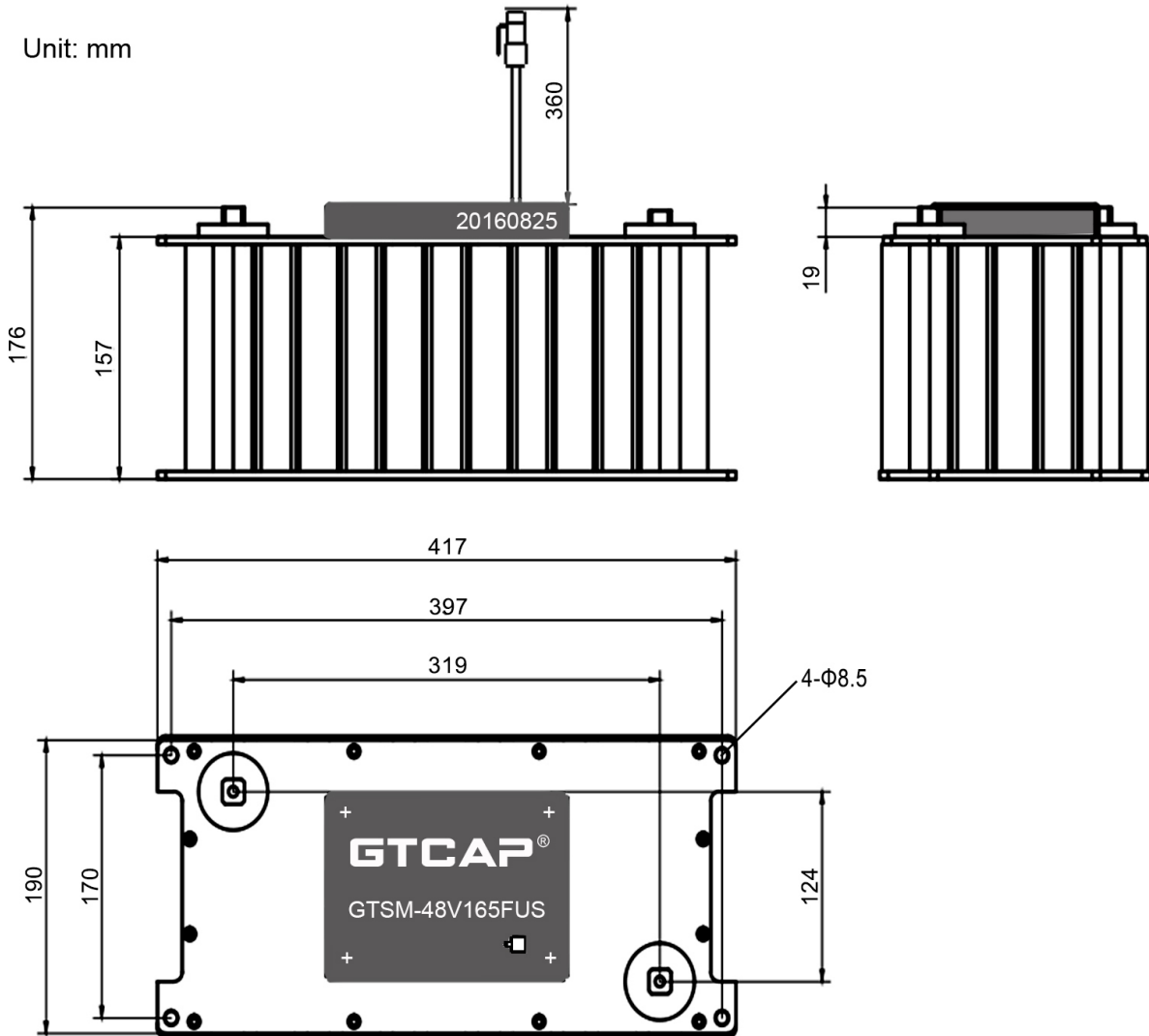
2,500 V/DC

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Part Number	Dimension (mm)			Package Quantity(set)
	L (±0.5mm)	W (±0.5mm)	H (±0.5mm)	
GTSM-48V165FUS	417.0	190.0	176.0	1

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.