

## 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 @ $25^{\circ}\text{C}$ )	5.2 mA

## TEMPERATURE

## Operating Temperature Range

(Cell case temperature)	$-40^{\circ}\text{C}$ to $+65^{\circ}\text{C}$
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## Storage Temperature Range

(Storage uncharged)	$-40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$
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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
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## Cooling

Natural Convection
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## Environmental Protection

IP65
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## 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)	$\leq 20\%$
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ESR change (% increase from minimum initial value)	$\leq 100\%$
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Room Temperature (at rated voltage at $25^{\circ}\text{C}$ )	10 years
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Capacitance change (% decrease from minimum initial value)	$\leq 20\%$
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ESR change (% increase from minimum initial value)	$\leq 100\%$
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Cycle Life (Number of cycles)	1,000,000 times
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Capacitance change (% decrease from minimum initial value)	$\leq 20\%$
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ESR change (% increase from minimum initial value)	$\leq 100\%$
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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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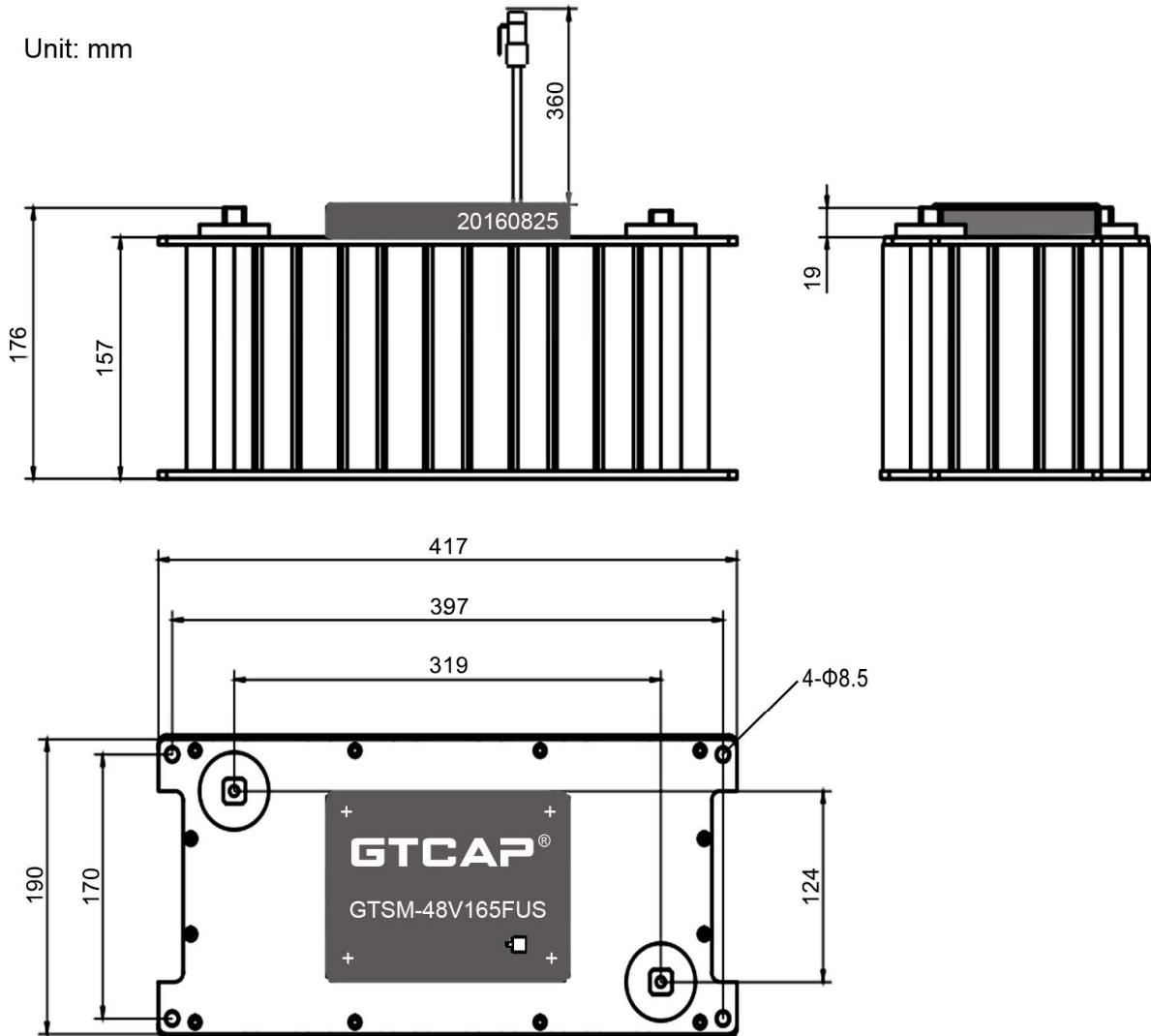
Factory High-Pot Test	2,500 V/DC
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## GTSM-48V165FUS



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.