

## Datasheet

48V 83F Ultra capacitor Module



# GTSM-48V83FUS



### 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

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

### SPECIFICATIONS

#### ELECTRICAL

##### Capacitance

Nominal capacitance	83 F
Capacitance tolerance	+20% / -10%

##### Voltage

Rated voltage	48 V
Absolute Maximum Voltage	51 V
Maximum Series Voltage	750 V

##### Resistance

ESR, DC	9 mΩ
---------	------

##### Current

Maximum continuous current ( $\Delta T=40^{\circ}\text{C}$ )	80 A
Maximum peak current, 1 sec.	1140 A
Maximum leakage current	3 mA

#### TEMPERATURE

##### Operating temperature range

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

##### Storage temperature range

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

#### PHYSICAL

Weight	10.6 kg
--------	---------

Power Terminals	M8/M10
-----------------	--------

Recommended Torque - Terminal	20/30 Nm
-------------------------------	----------

Vibration Specification	GB-T 11287-2000
-------------------------	-----------------

Shock Specification	GBT 14537-1993
---------------------	----------------

Environmental Protection	IP54
--------------------------	------

#### MONITORING / CELL VOLTAGE MANAGEMENT

Internal Temperature Sensor	NTC Thermistor
-----------------------------	----------------

Cell Voltage Monitoring	Overvoltage Alarm
-------------------------	-------------------

#### POWER AND ENERGY

Usable power density (Pd)	2898 W/kg
---------------------------	-----------

Impedance match power density (Pmax)	6037 W/kg
--------------------------------------	-----------

Gravimetric energy density (Emax)	2.5 Wh/kg
-----------------------------------	-----------

Energy available	26.5 Wh
------------------	---------

#### LIFE

##### High Temperature

(at Rated Voltage & Maximum operating Temperature)	1,500 hours
--	-------------

Capacitance change (% decrease from minimum initial value)	≤20%
---	------

ESR change (% increase from minimum initial value)	≤100%
---	-------

##### Room Temperature

(at Rated Voltage at 25°C)	10 years
----------------------------	----------

Capacitance change (% decrease from minimum initial value)	≤20%
---	------

ESR change (% increase from minimum initial value)	≤100%
---	-------

##### Cycle Life

(Number of cycles)	1,000,000 times
--------------------	-----------------

Capacitance change (% decrease from minimum initial value)	≤20%
---	------

ESR change (% increase from minimum initial value)	≤100%
---	-------

##### Shelf Life

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

#### SAFETY

##### Short circuit current (Isc)

(Current possible with short circuit from rated voltage. Do not use as an operating current.)	4900 A
---	--------

##### Factory High-Pot Test

2,500 V/DC
------------