

Ordering number : ENN7752



SANYO Semiconductors

DATA SHEET

FTD8002 — N-Channel Silicon MOSFET  
General-Purpose Switching Device  
Applications

Features

- Ultralow ON-resistance.
- 2.5V drive.
- Mount height 1.1mm.
- Best suited for switching of lithium-ion battery with drain common.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±12	V
Drain Current (DC)	I <sub>D</sub>		8	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	40	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1000mm²×0.8mm)1unit	1.4	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (1000mm²×0.8mm)	1.45	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	0.5		1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =8A	11	19		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =8A, V <sub>GS</sub> =4.5V	7	13	17	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =6A, V <sub>GS</sub> =4V	7.5	14	19	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =4A, V <sub>GS</sub> =3.1V	8.5	15	22	mΩ
	R <sub>DS(on)4</sub>	I <sub>D</sub> =4A, V <sub>GS</sub> =2.5V	9.5	17	24	mΩ

Marking : D8002

Continued on next page.

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# FTD8002

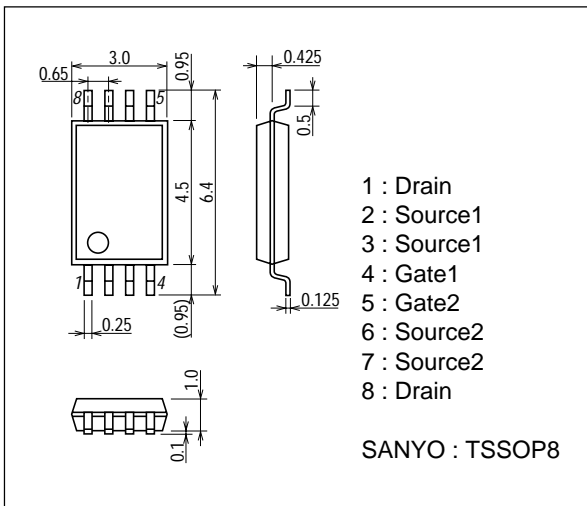
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		2610		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		310		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		300		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		30		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		195		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		220		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		185		ns
Total Gate Charge	Qg	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =8A		26		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =8A		3.5		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =10V, V <sub>GS</sub> =4V, I <sub>D</sub> =8A		8.0		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =8A, V <sub>GS</sub> =0	0.82	1.2		V

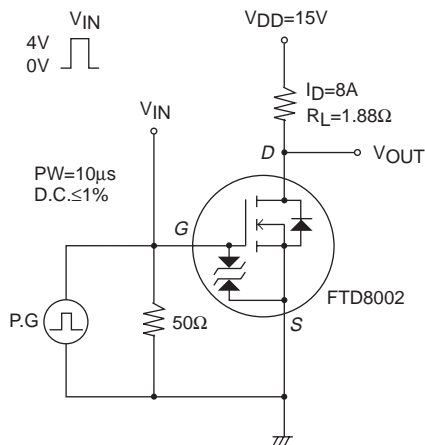
## Package Dimensions

unit : mm

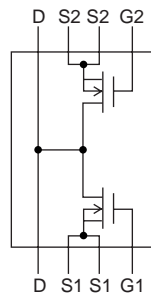
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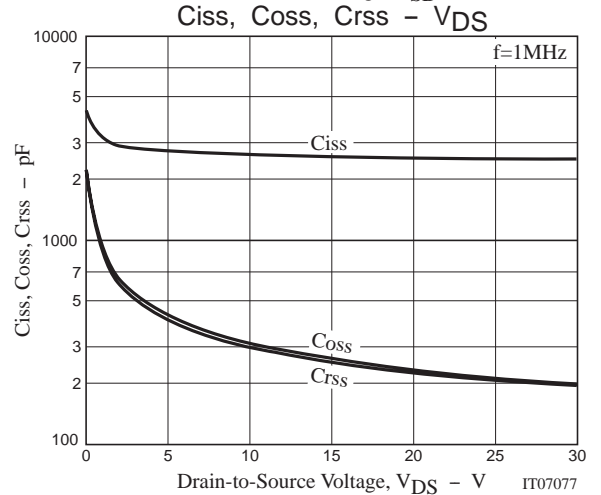
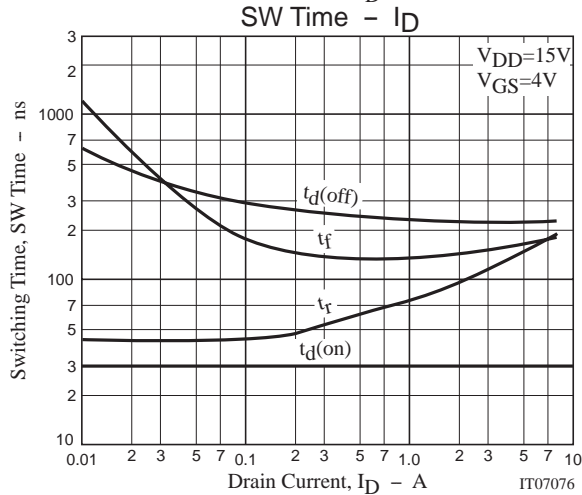
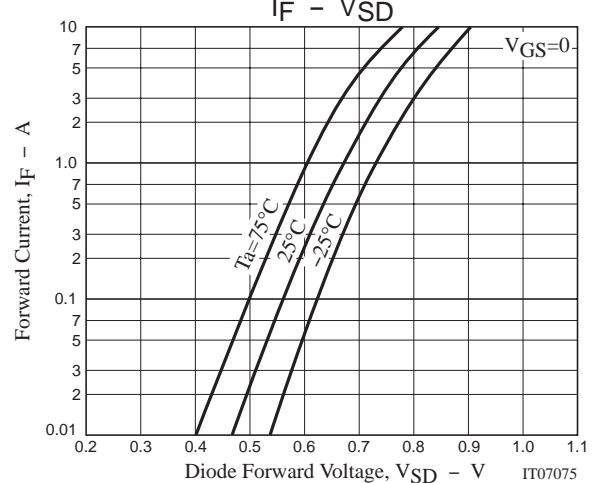
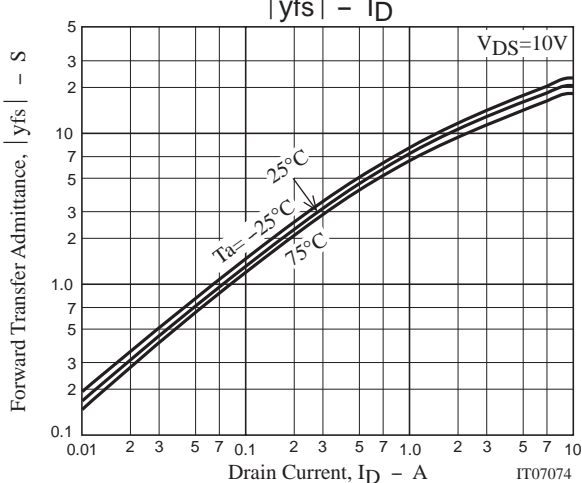
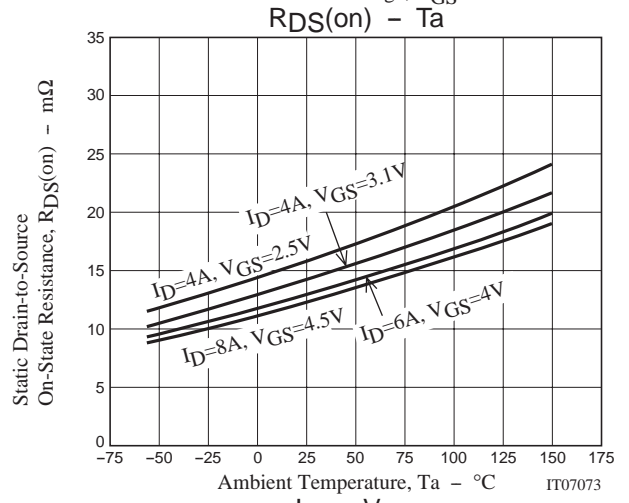
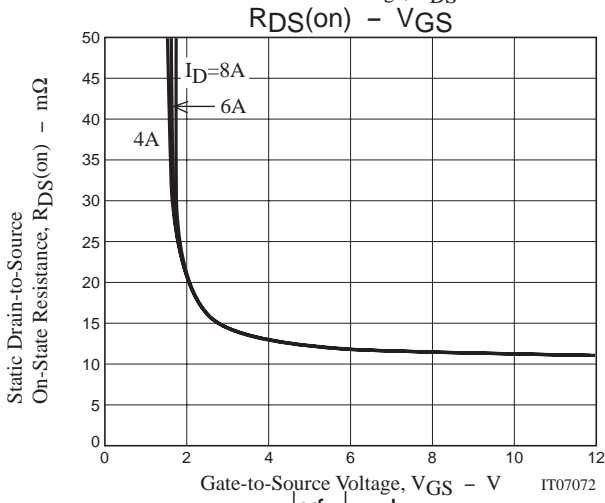
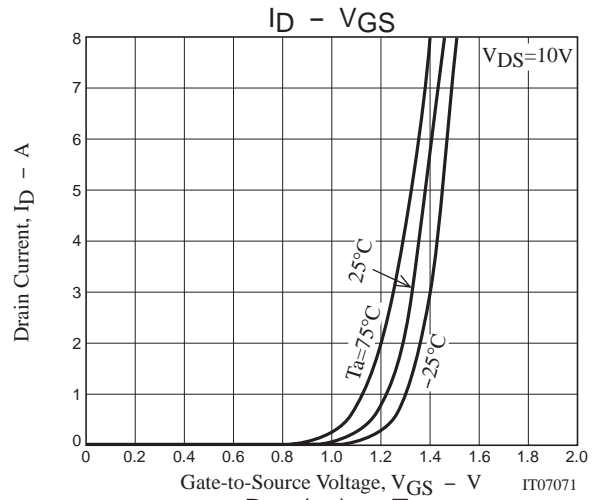
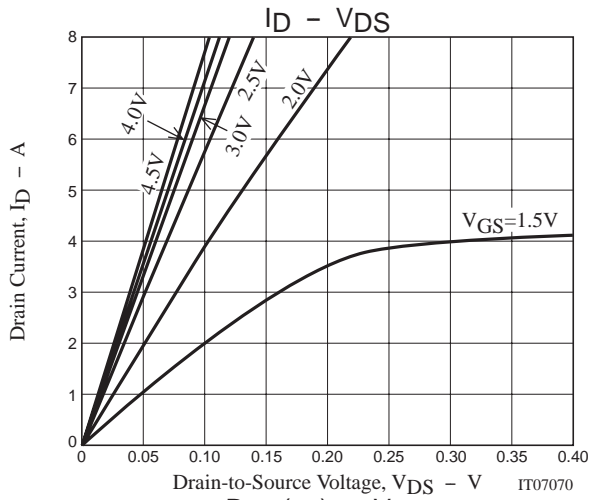
## Switching Time Test Circuit



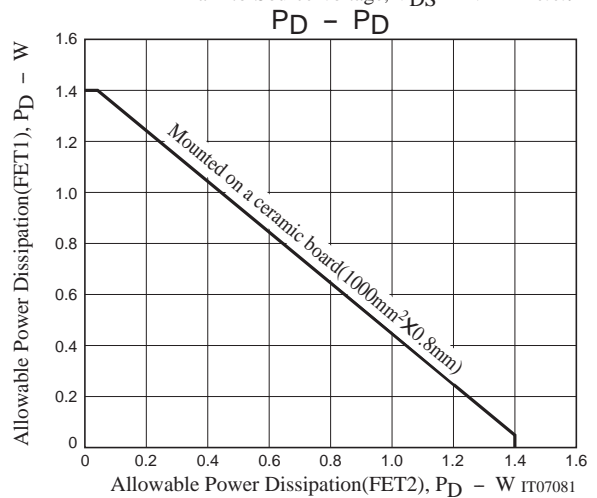
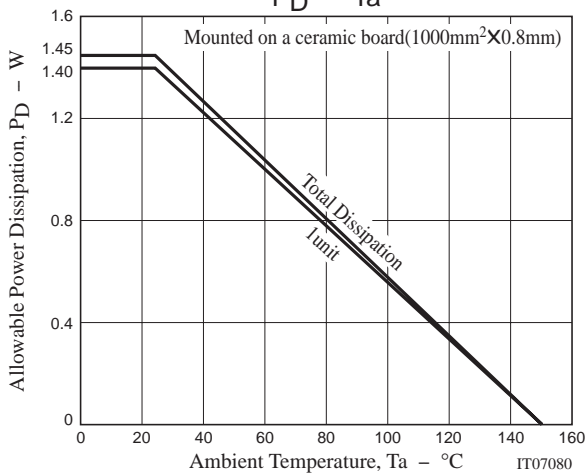
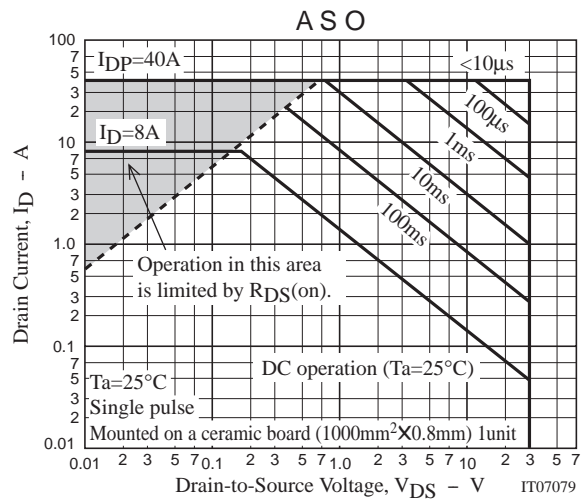
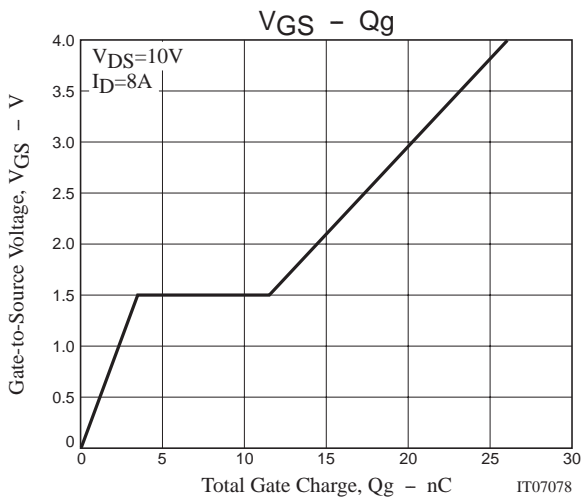
## Electrical Connection



# FTD8002



## FTD8002



Note on usage : Since the FTD8002 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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