



FTD8004

N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 2.5V drive.
- Mounting 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 _{DSS}		20	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		8	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	40	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1000mm ² ×0.8mm)1unit	1.4	W
Total Dissipation	P _T	Mounted on a ceramic board (1000mm ² ×0.8mm)	1.45	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0	20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	0.5		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =8A	12	20		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =8A, V _{GS} =4.5V	6	12	16	mΩ
	R _{DS(on)2}	I _D =6A, V _{GS} =4V	7	13	18	mΩ
	R _{DS(on)3}	I _D =4A, V _{GS} =3.1V	8	14	20	mΩ
	R _{DS(on)4}	I _D =4A, V _{GS} =2.5V	9	16	23	mΩ

Marking : D8004

Continued on next page.

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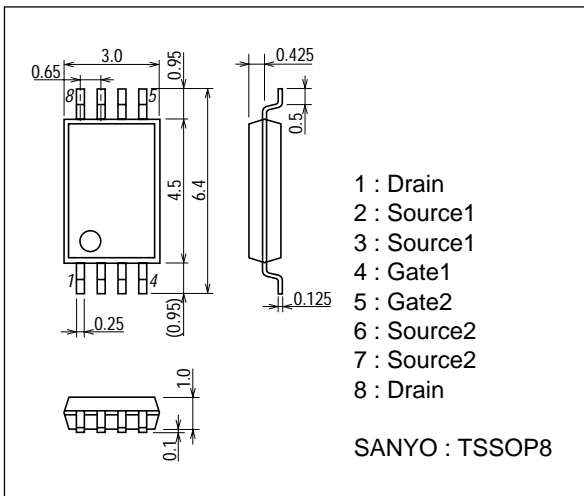
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		2400		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		445		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		435		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		30		ns
Rise Time	t _r	See specified Test Circuit.		360		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		165		ns
Fall Time	t _f	See specified Test Circuit.		240		ns
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4V, I _D =8A		28		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =4V, I _D =8A		3.5		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =10V, V _{GS} =4V, I _D =8A		10		nC
Diode Forward Voltage	V _{SD}	I _S =8A, V _{GS} =0		0.82	1.2	V

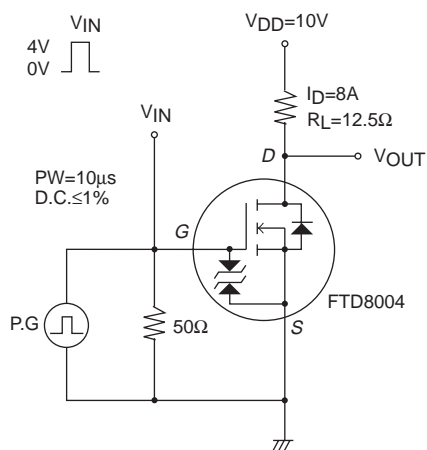
Package Dimensions

unit : mm

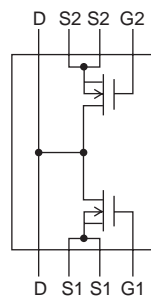
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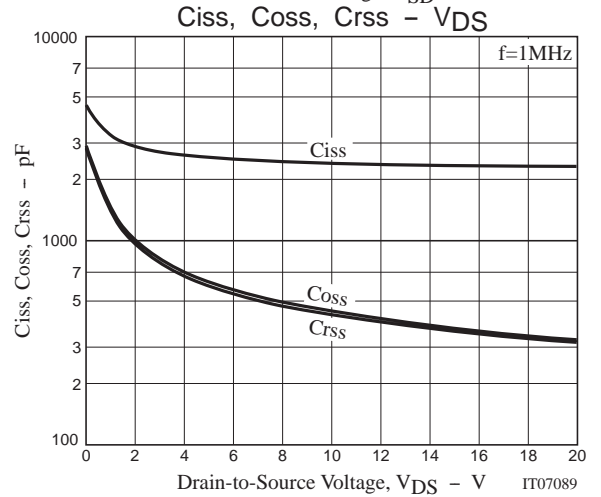
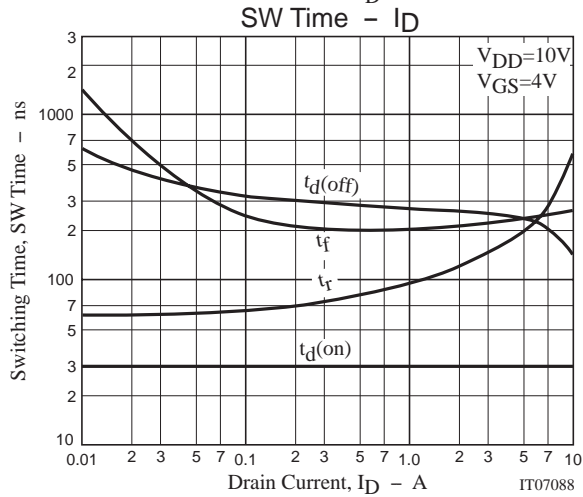
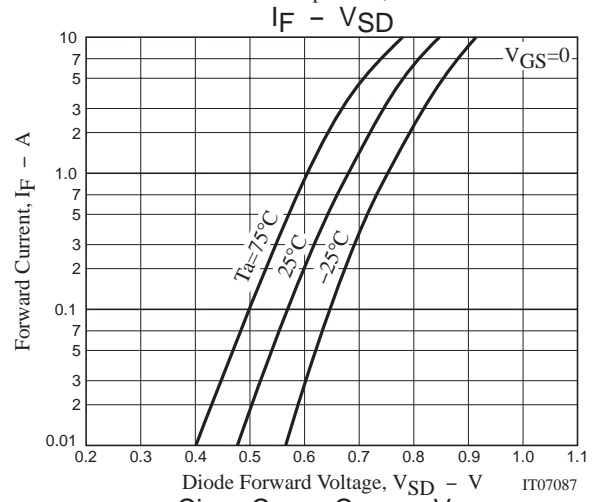
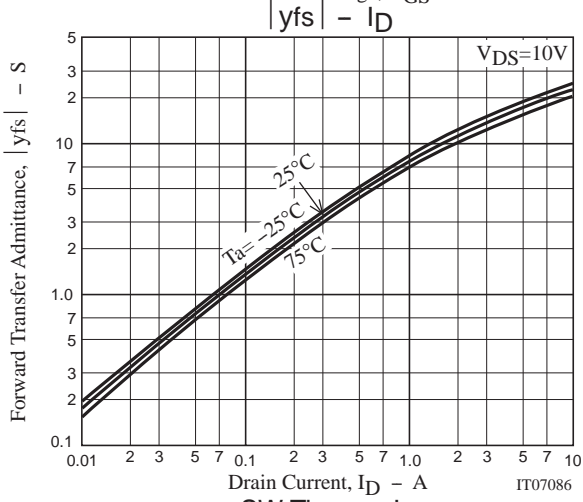
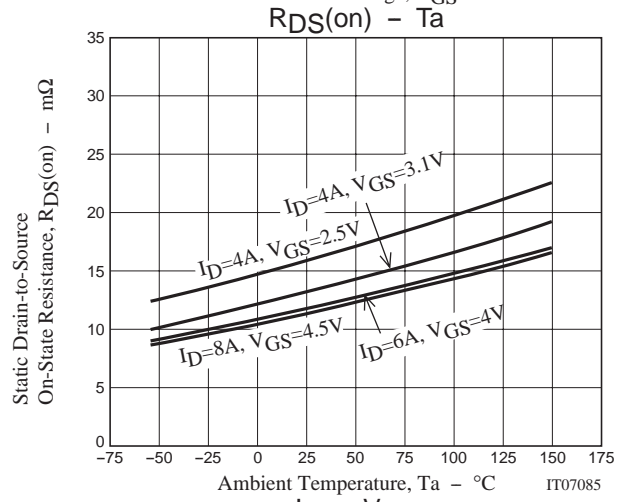
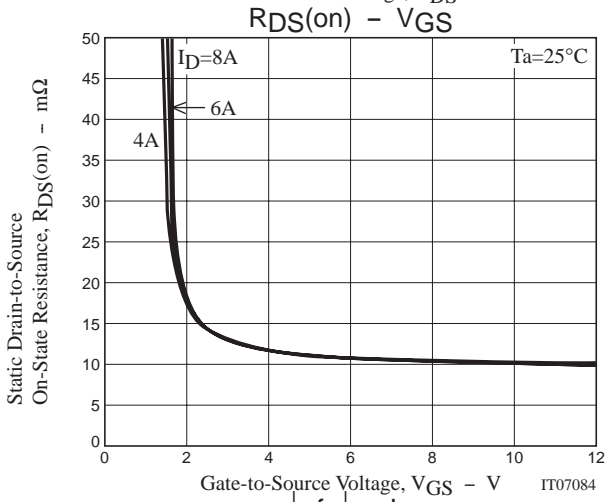
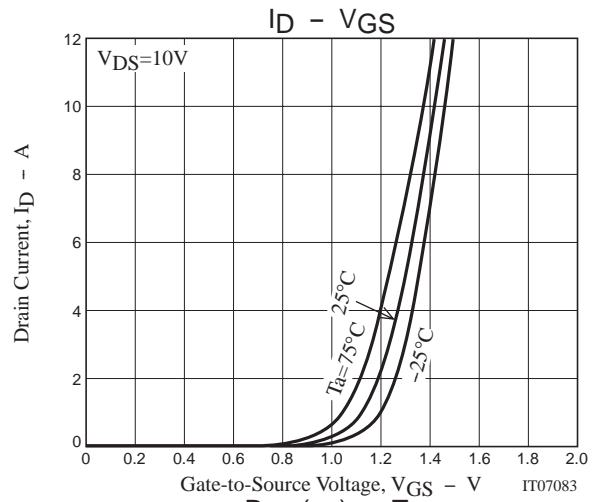
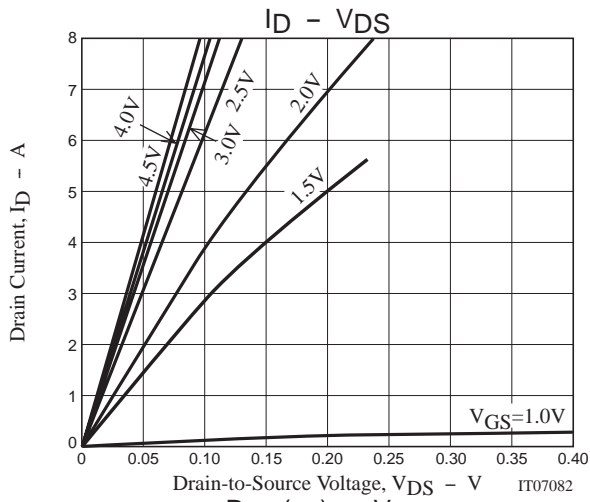
Switching Time Test Circuit

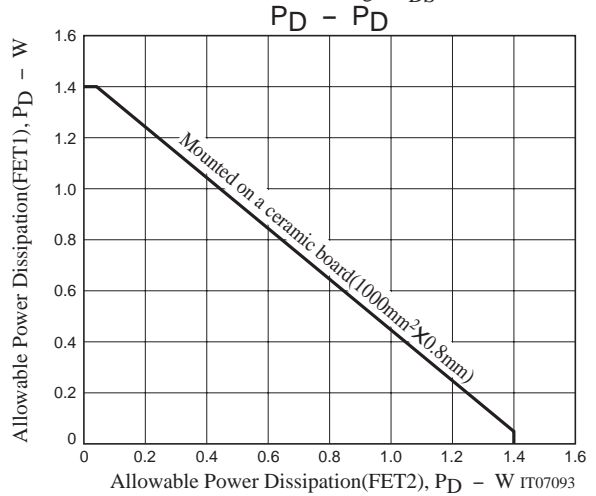
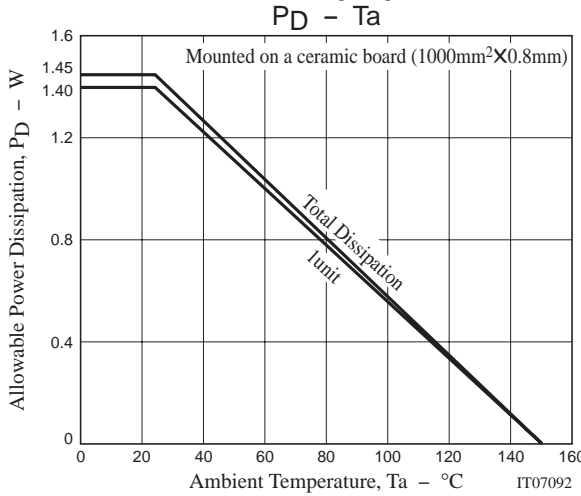
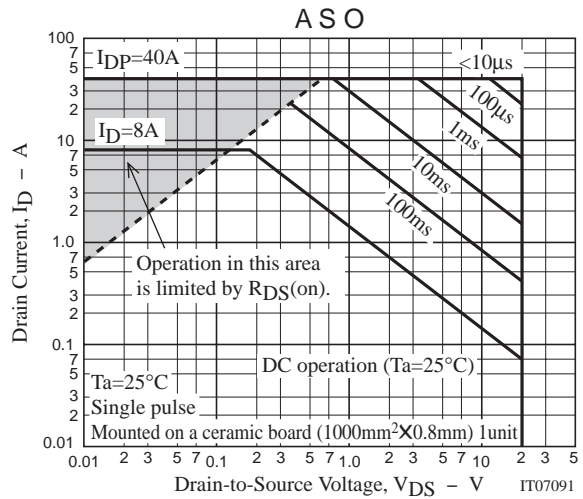
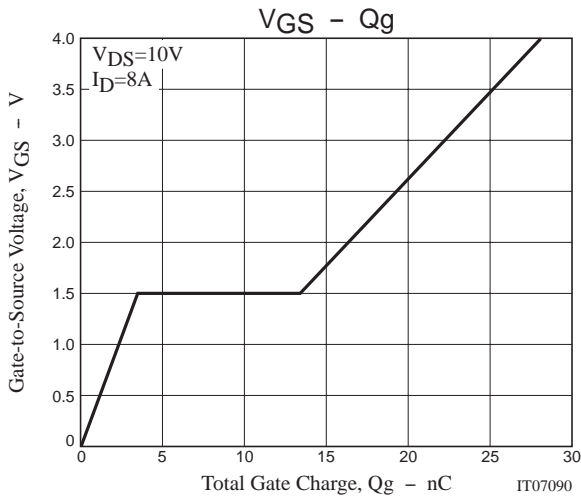


Electrical Connection



FTD8004





Note on usage : Since the FTD8004 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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