

N-Channel Silicon MOSFET



FSS239

Load Switching Applications

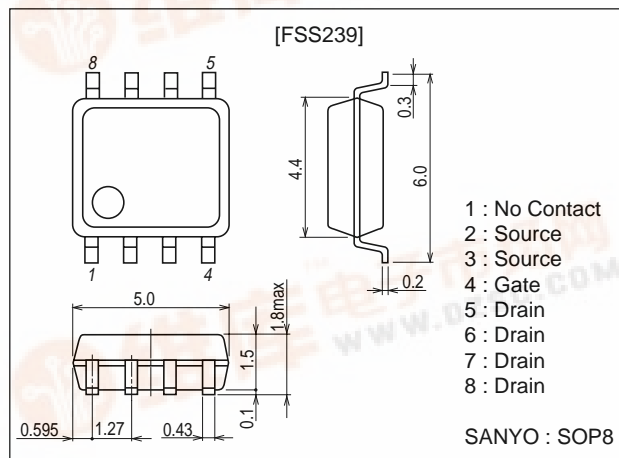
Features

- Low ON resistance.
- 2.5V drive.

Package Dimensions

unit : mm

2185



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		20	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	ID		7	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	52	A
Allowable Power Dissipation	PD	Mounted on a ceramic board (1000mm²×0.8mm)	1.8	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-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	ID=1mA, VGS=0	20			V
Zero-Gate Voltage Drain Current	IDSS	VDS=20V, VGS=0			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	0.4		1.3	V
Forward Transfer Admittance	yfs	VDS=10V, ID=7A	10.9	15.5		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=7A, VGS=4V		24	32	mΩ
	RDS(on)2	ID=2A, VGS=2.5V		29	42	mΩ

Marking : S239

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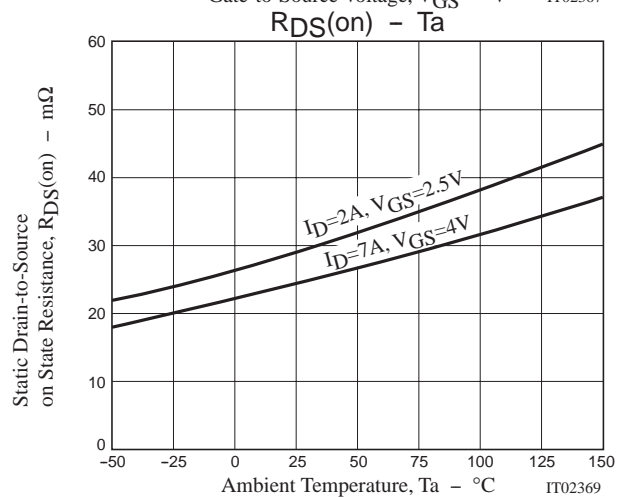
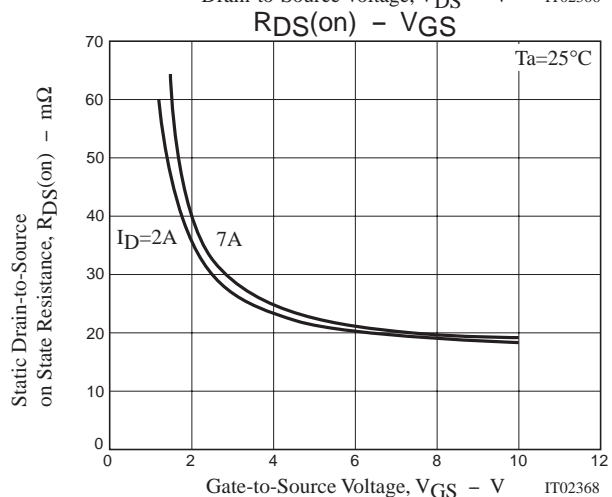
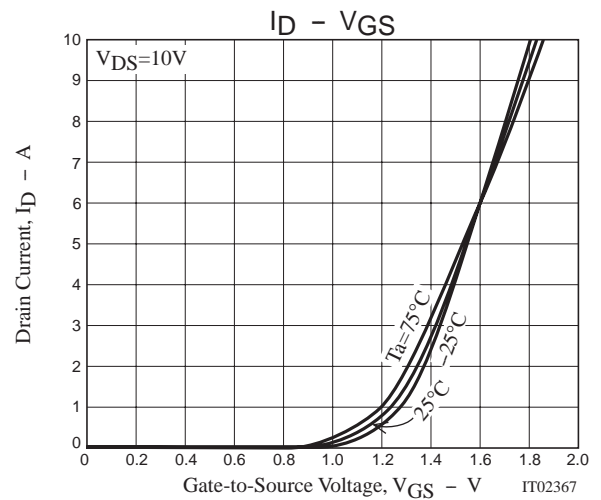
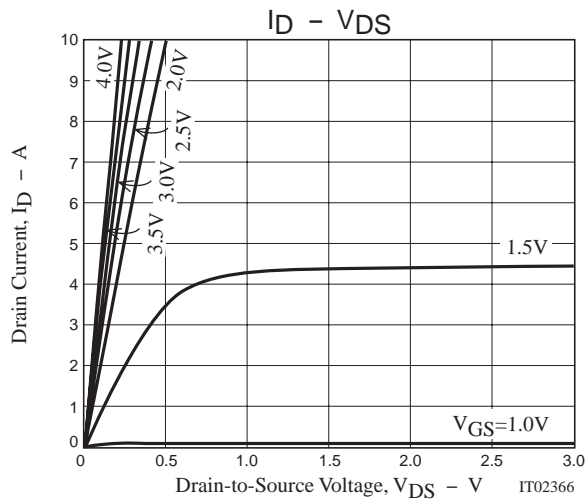
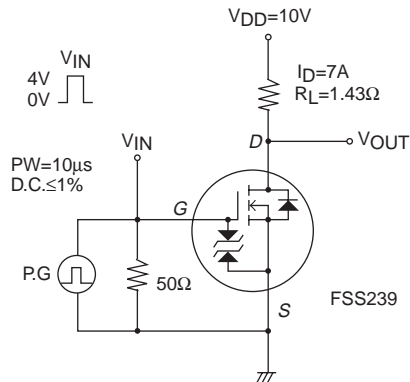
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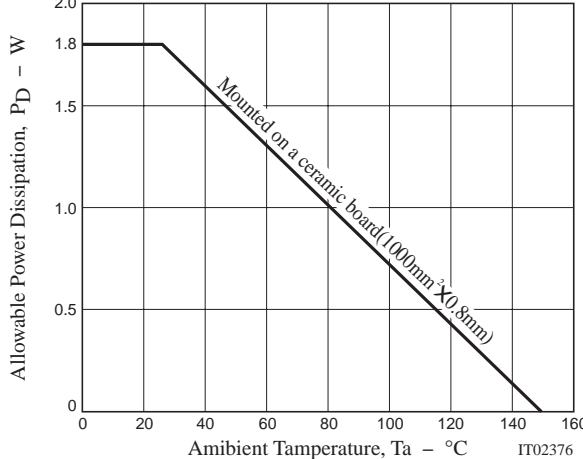
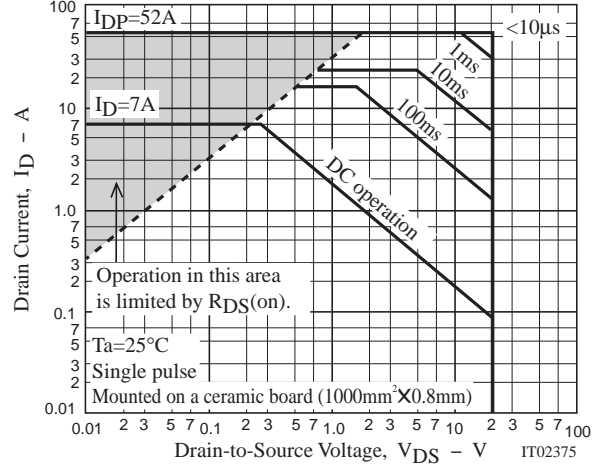
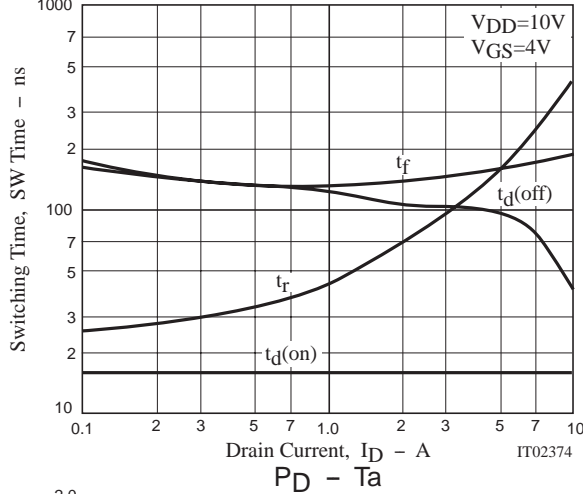
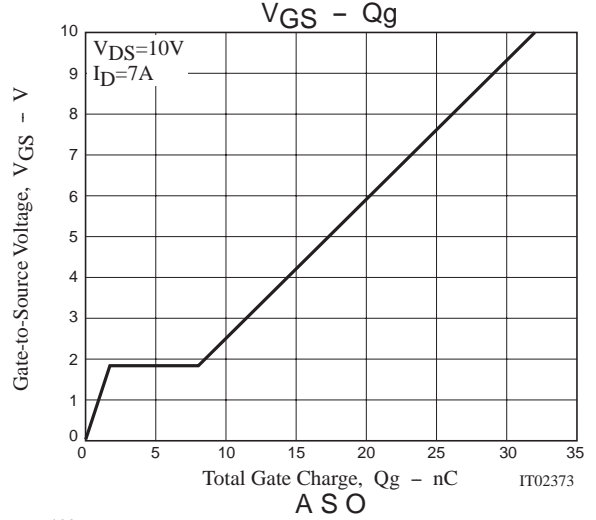
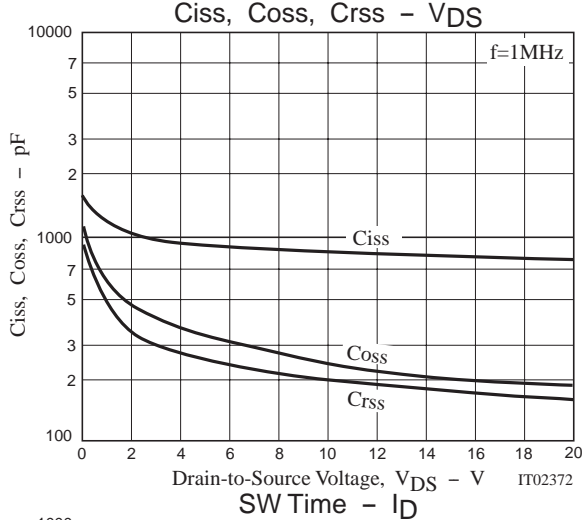
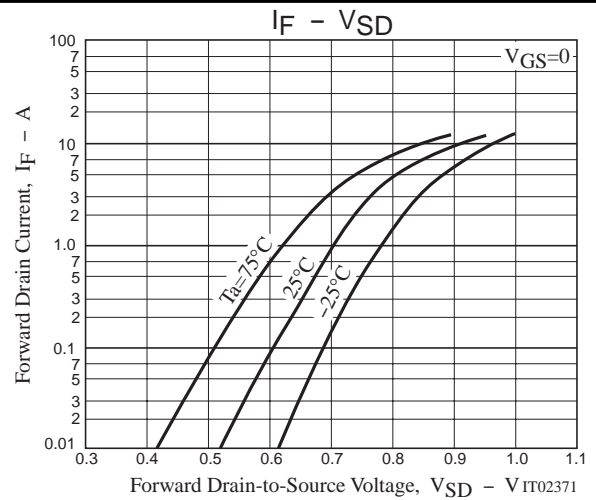
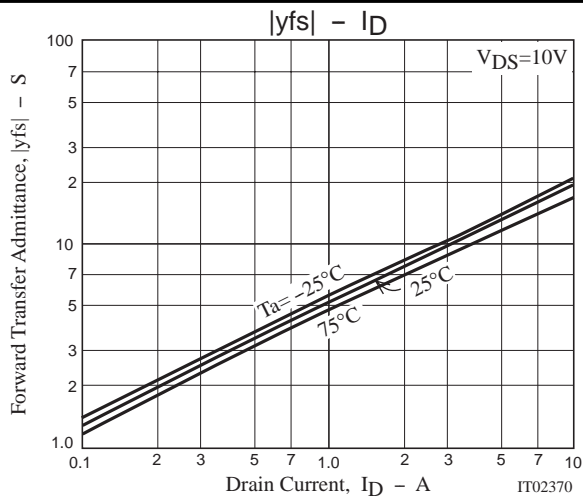
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		900		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		260		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		200		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit		15		ns
Rise Time	t _r	See specified Test Circuit		220		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit		75		ns
Fall Time	t _f	See specified Test Circuit		180		ns
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =10V, I _D =7A		32		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =10V, I _D =7A		1.7		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =10V, V _{GS} =10V, I _D =7A		6.4		nC
Diode Forward Voltage	V _{SD}	I _S =7A, V _{GS} =0		0.86	1.2	V

Switching Time Test Circuit



FSS239



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