

**FSS239**

Load Switching Applications

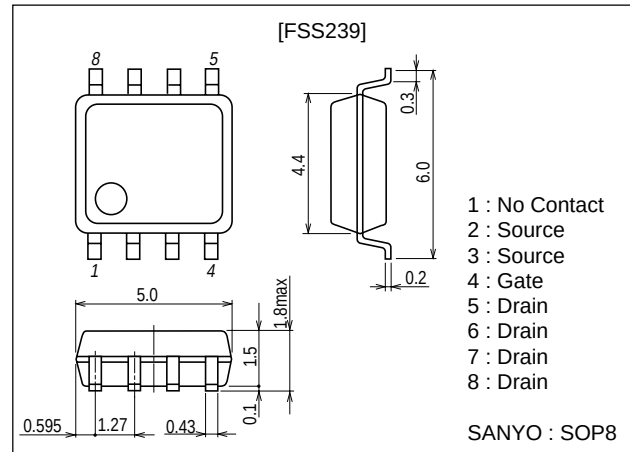
Features

- 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	V_{DS}		20	V
Gate-to-Source Voltage	V_{GS}		± 10	V
Drain Current (DC)	I_D		7	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	52	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm ² X0.8mm)	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	$V_{(BR)DSS}$	$I_D=1mA$, $V_{GS}=0$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V$, $V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$, $I_D=1mA$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$, $I_D=7A$	10.9	15.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=7A$, $V_{GS}=4V$		24	32	m Ω
	$R_{DS(on)2}$	$I_D=2A$, $V_{GS}=2.5V$		29	42	m Ω

Marking : S239

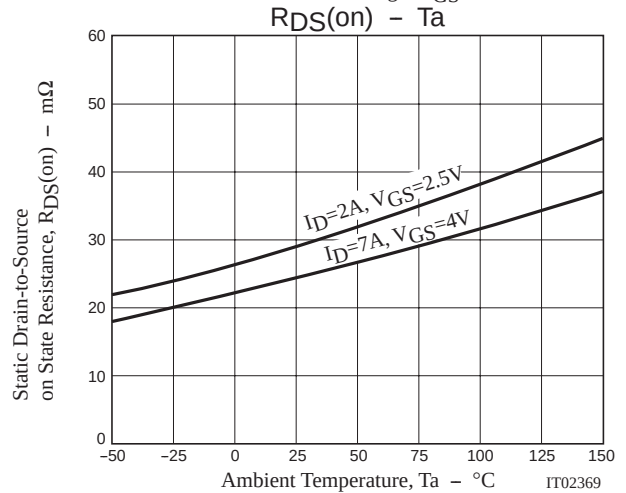
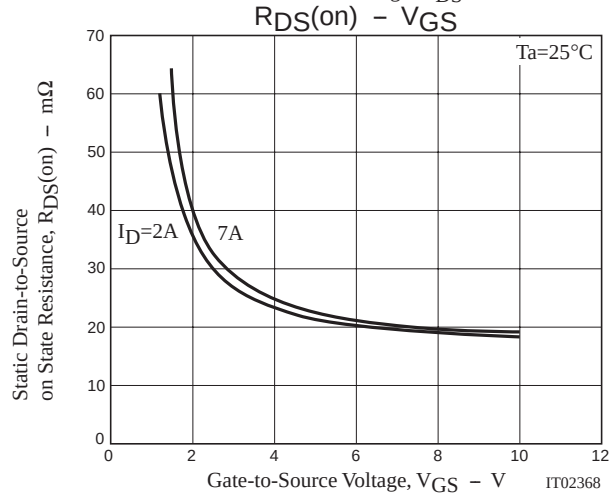
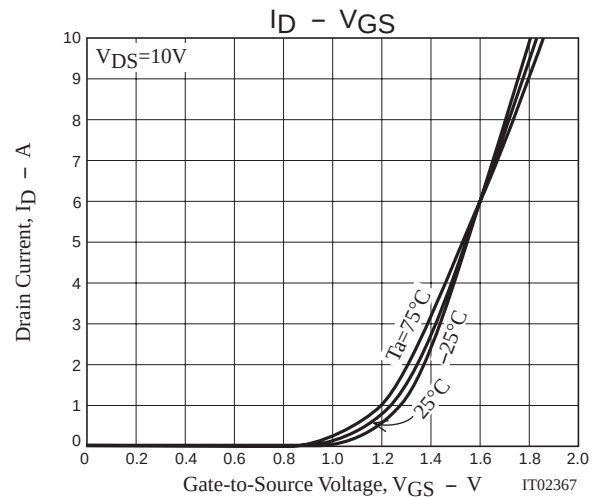
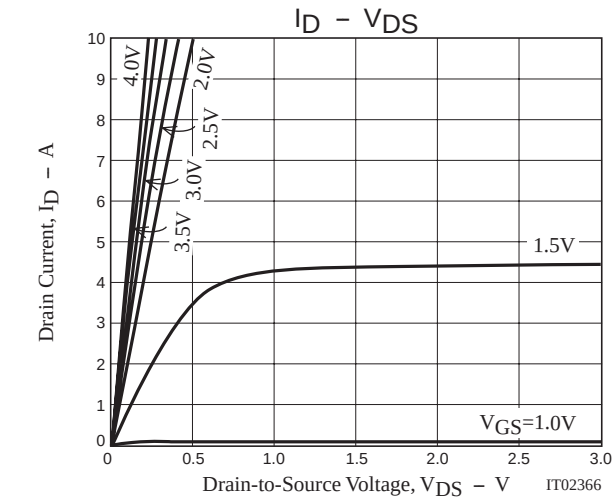
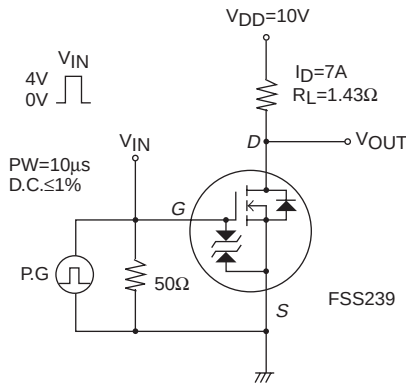
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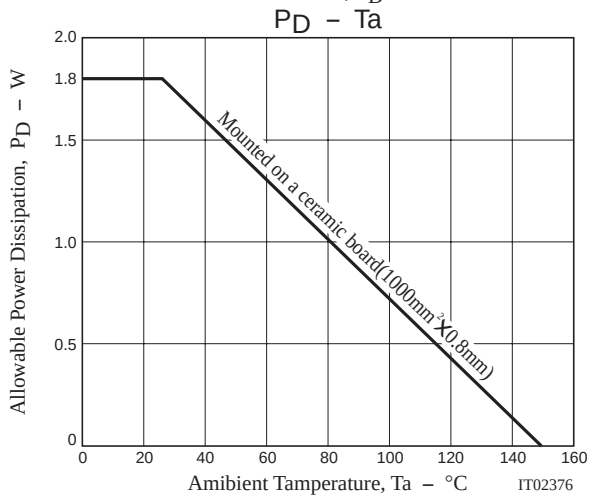
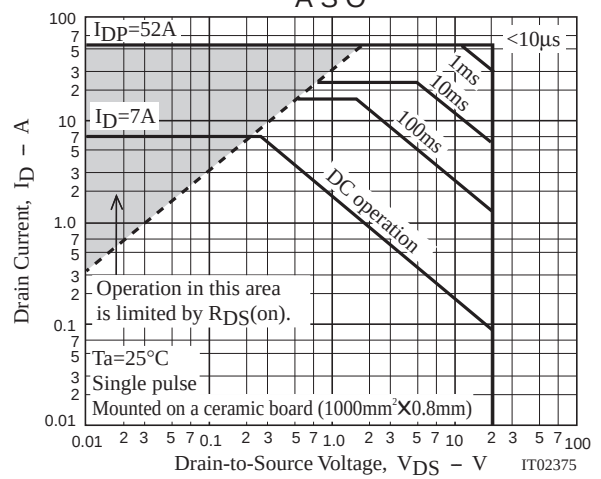
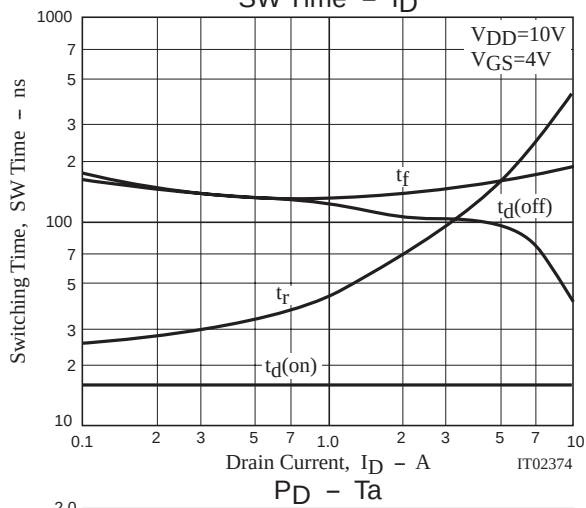
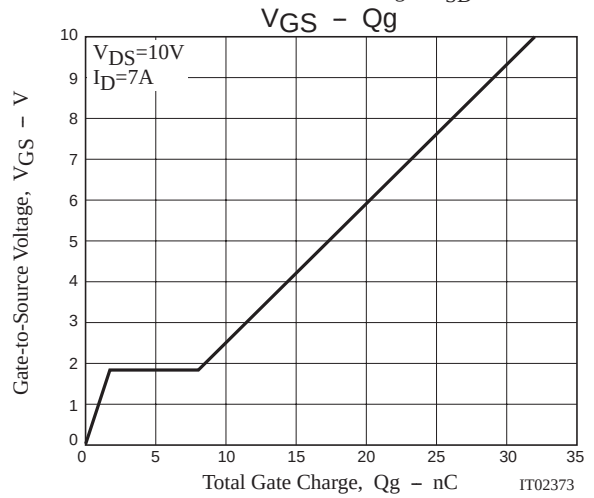
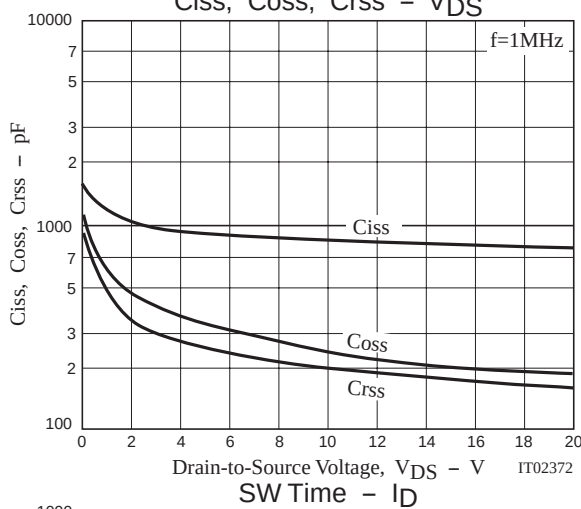
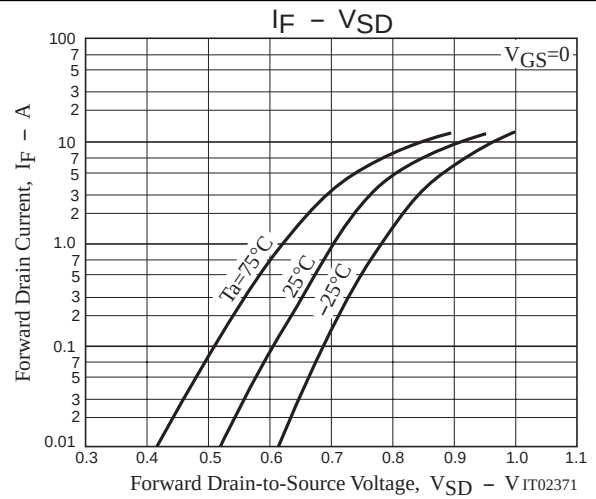
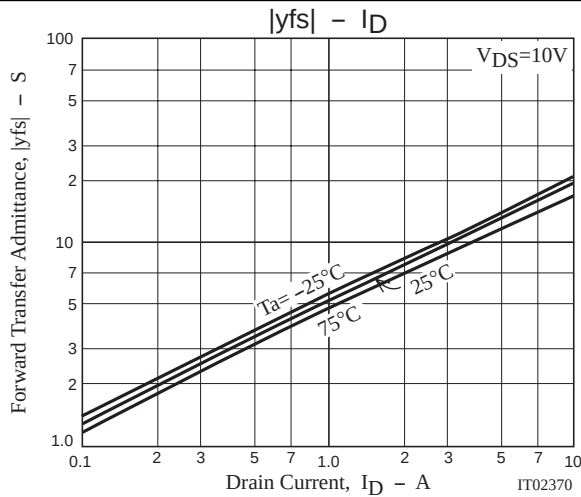
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V$, $f=1MHz$		900		pF
Output Capacitance	Coss	$V_{DS}=10V$, $f=1MHz$		260		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V$, $f=1MHz$		200		pF
Turn-ON Delay 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	Qg	$V_{DS}=10V$, $V_{GS}=10V$, $I_D=7A$		32		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V$, $V_{GS}=10V$, $I_D=7A$		1.7		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V$, $V_{GS}=10V$, $I_D=7A$		6.4		nC
Diode Forward Voltage	V_{SD}	$I_S=7A$, $V_{GS}=0$		0.86	1.2	V

Switching Time Test Circuit





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