



# FSS172 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

### 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>		±20	V
Drain Current (DC)	I <sub>D</sub>		-4.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-18	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1200mm <sup>2</sup> ×0.8mm)	1.4	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> =0V	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-4.5A	3.9	6.6		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-4.5A, V <sub>GS</sub> =-10V		48	63	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-4A, V <sub>GS</sub> =-4.5V		82	115	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-4A, V <sub>GS</sub> =-4V		95	135	mΩ

Marking : S172

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50907 TI IM TC-00000685 / 70505PE MS IM TB-00001350 No.8286-1/4

# FSS172

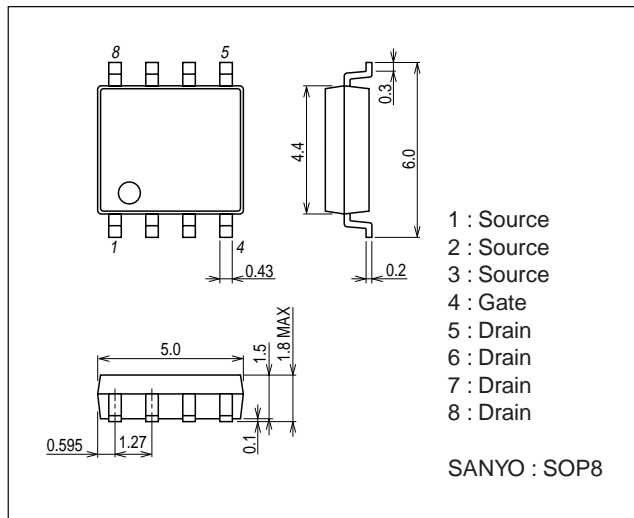
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		590		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		120		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		115		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8		ns
Rise Time	$t_r$	See specified Test Circuit.		80		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		55		ns
Fall Time	$t_f$	See specified Test Circuit.		62		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4.5A$		12.8		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4.5A$		1.5		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4.5A$		4.3		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-4.5A, V_{GS}=0V$		-0.87	-1.5	V

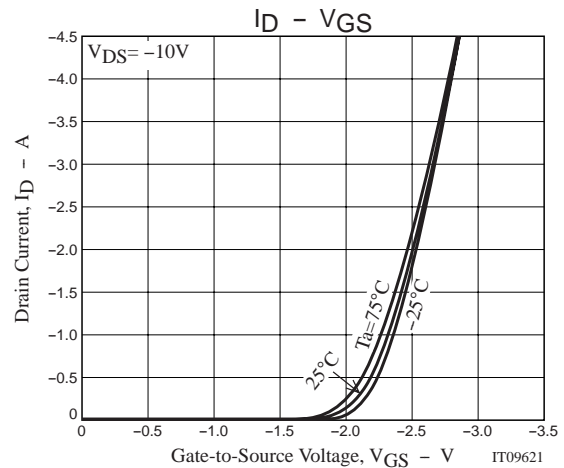
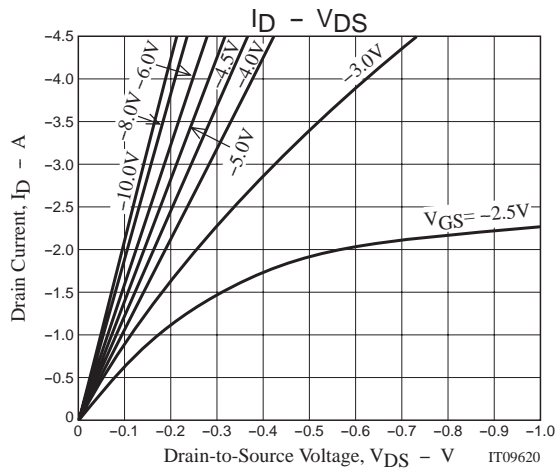
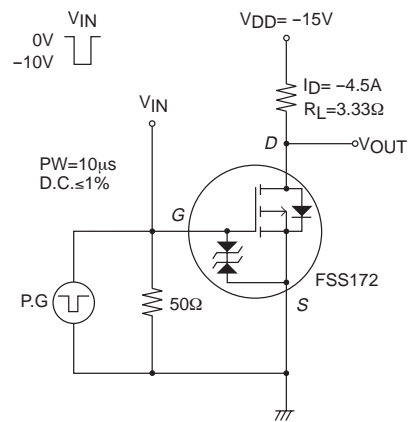
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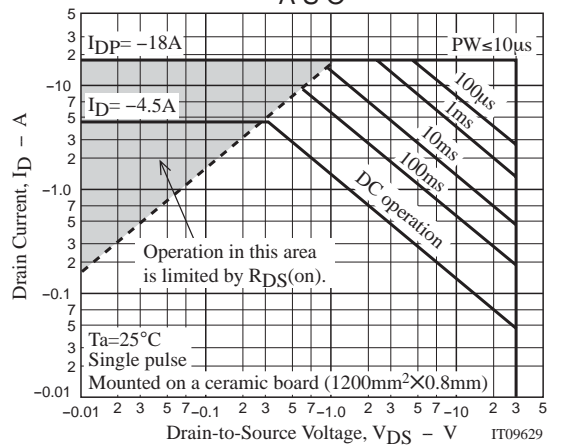
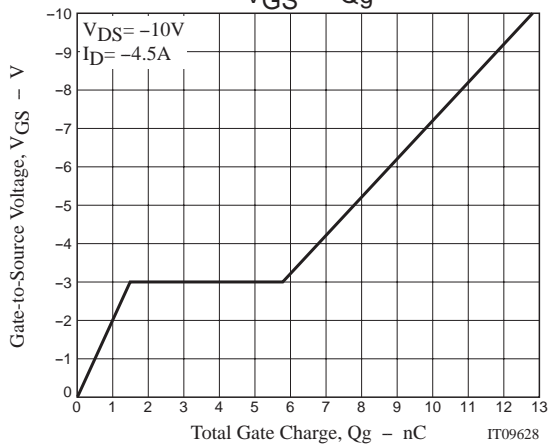
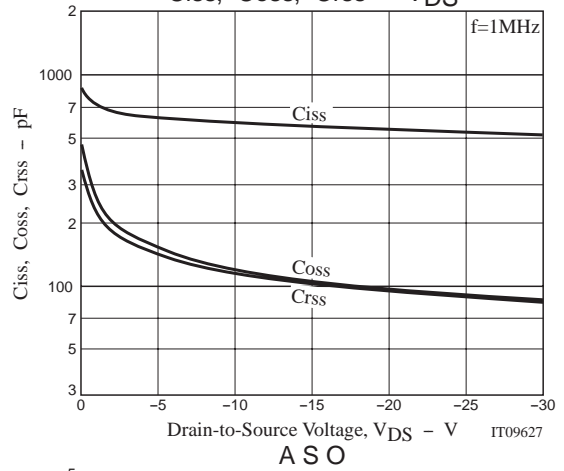
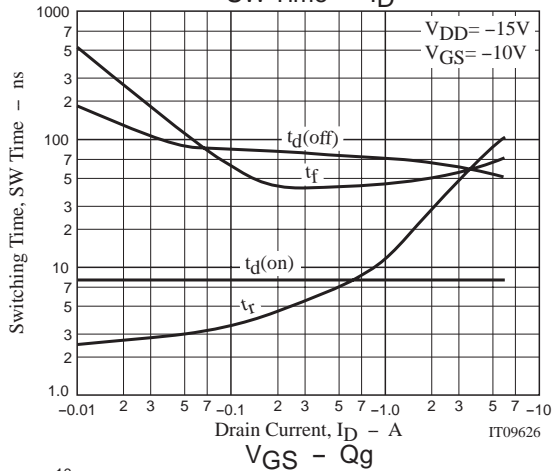
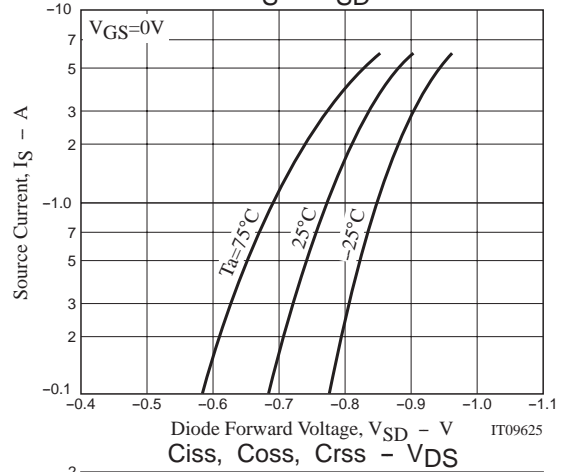
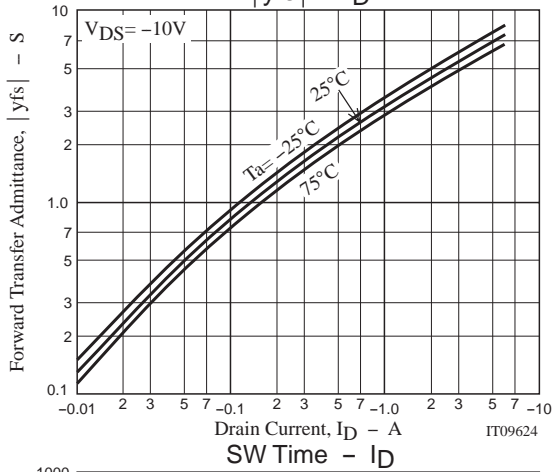
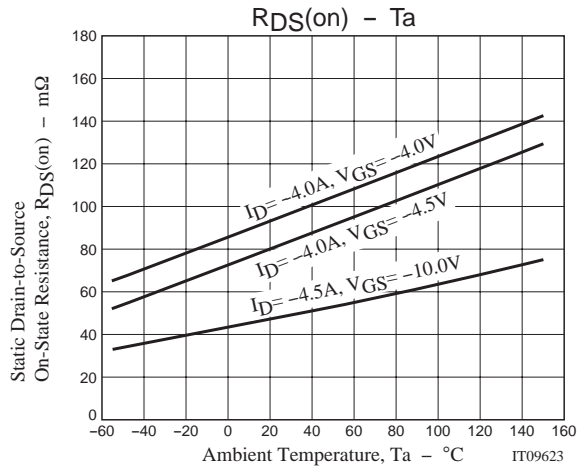
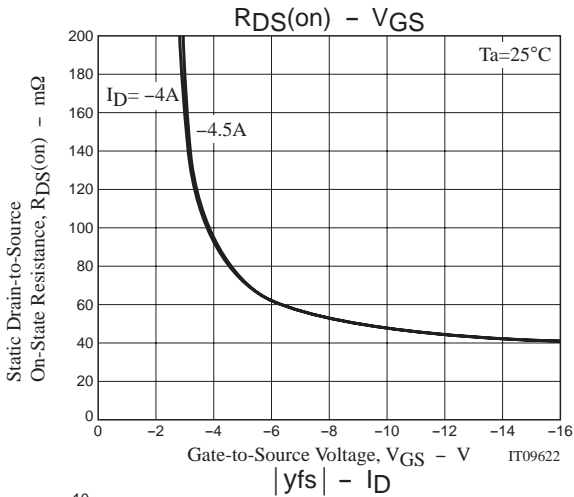
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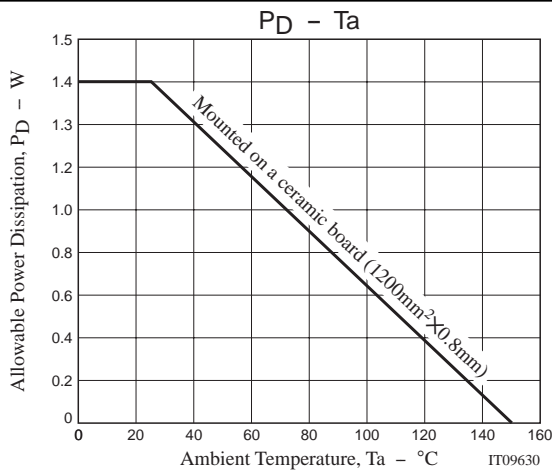
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## Switching Time Test Circuit







Note on usage : Since the FSS172 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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