



SANYO Semiconductors

DATA SHEET

# N-Channel Silicon MOSFET

## FSS804 — General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- 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>		14	A
Drain Current (PW≤10s)	I <sub>D</sub>	Duty cycle≤1%	18	A
Drain Current (PW≤10μs)	I <sub>DP</sub>	Duty cycle≤1%	52	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1200mm <sup>2</sup> ×0.8mm), PW≤10s	3.3	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> =14A	11.5	19		S
Static Drain-to-Source On-State Resistance	R <sub>D(on)1</sub>	I <sub>D</sub> =14A, V <sub>GS</sub> =10V		7	10	mΩ
	R <sub>D(on)2</sub>	I <sub>D</sub> =7A, V <sub>GS</sub> =4.5V		11	16	mΩ
	R <sub>D(on)3</sub>	I <sub>D</sub> =7A, V <sub>GS</sub> =4V		14	20	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, f=1MHz		3000		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =10V, f=1MHz		500		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =10V, f=1MHz		350		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		28		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		250		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		160		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		120		ns

Marking : S804

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**FSS804**

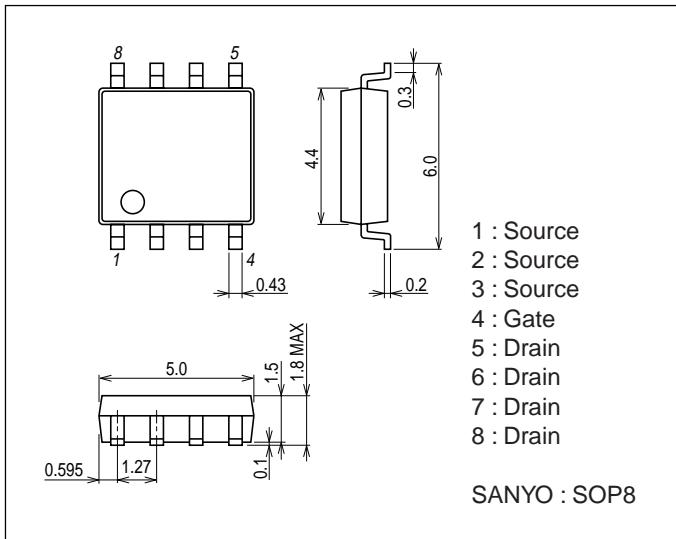
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=14A$		50		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=14A$		8		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V$ , $V_{GS}=10V$ , $I_D=14A$		10		nC
Diode Forward Voltage	$V_{SD}$	$I_S=14A$ , $V_{GS}=0V$		0.81	1.2	V

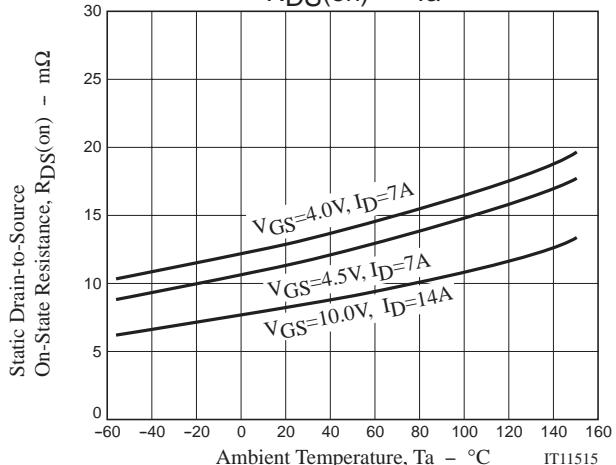
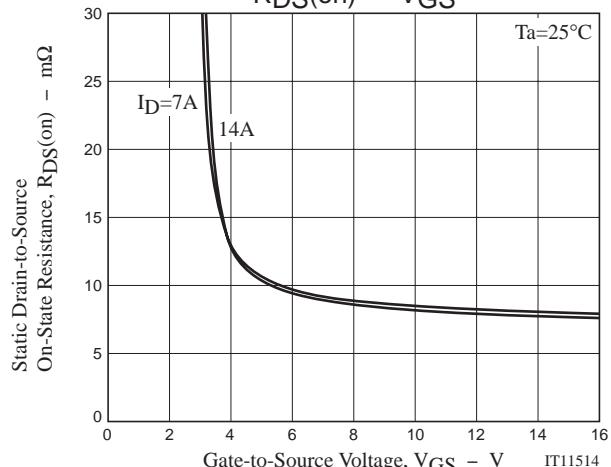
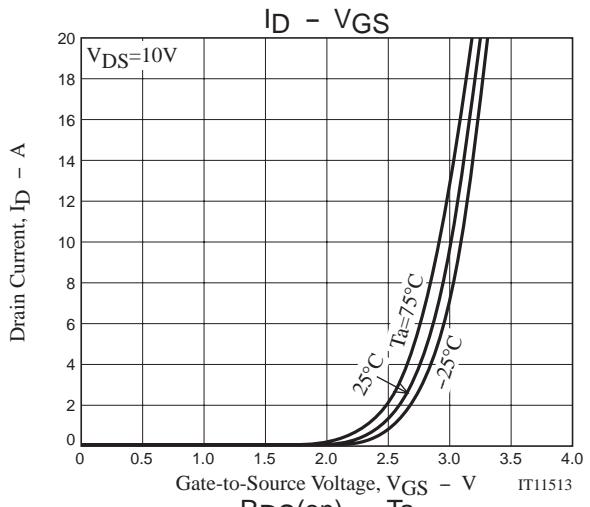
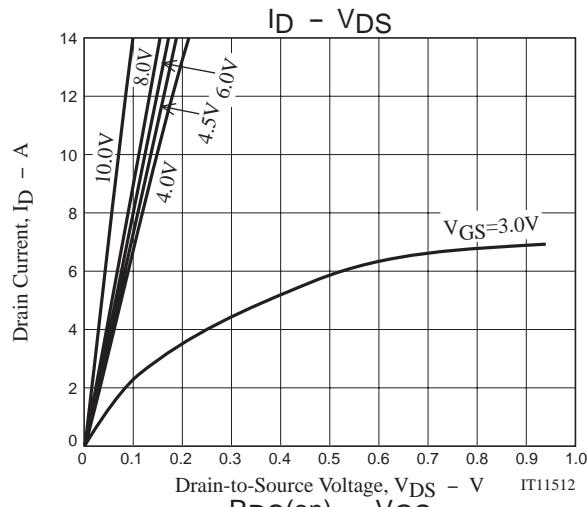
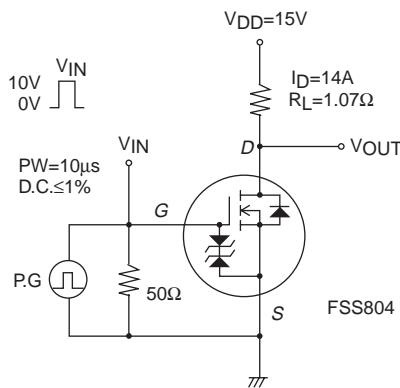
## Package Dimensions

unit : mm (typ)

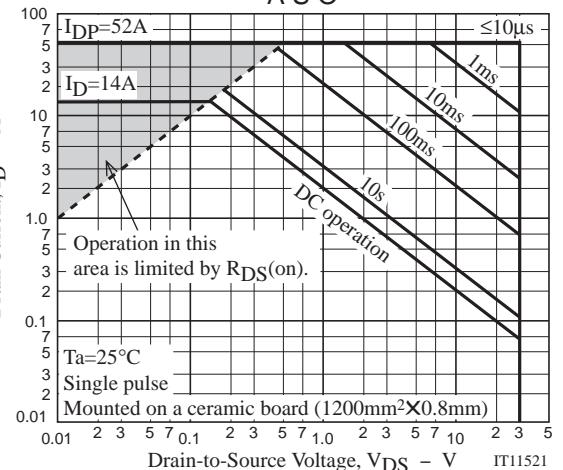
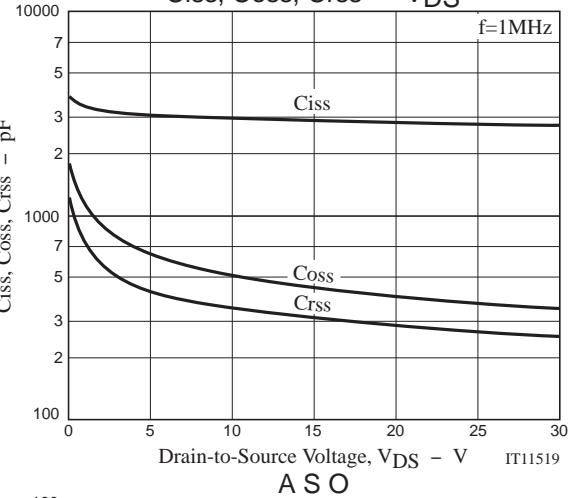
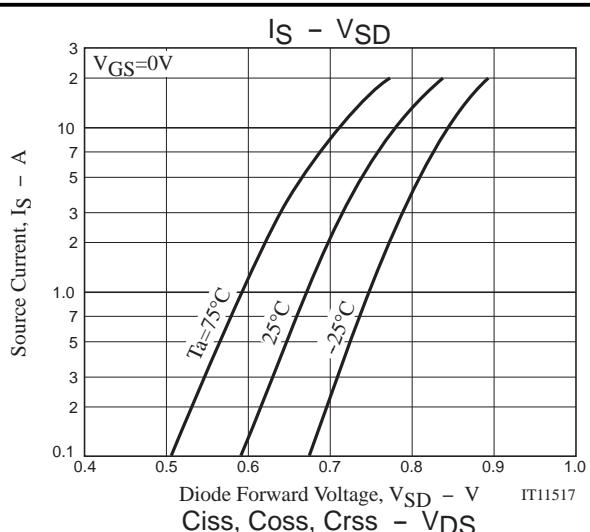
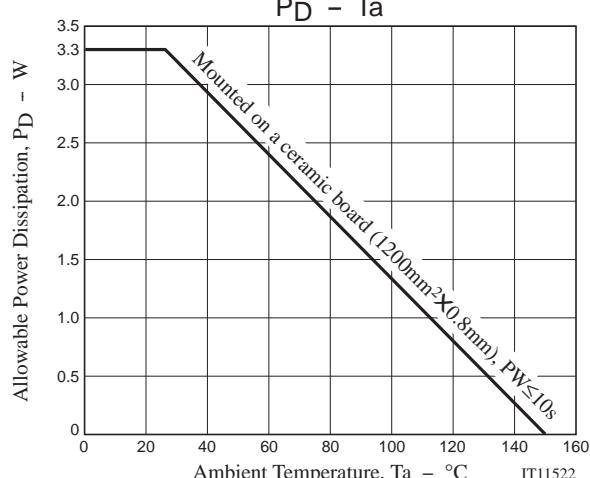
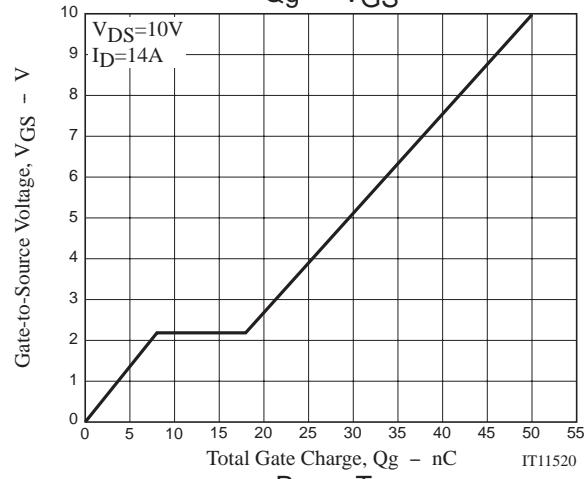
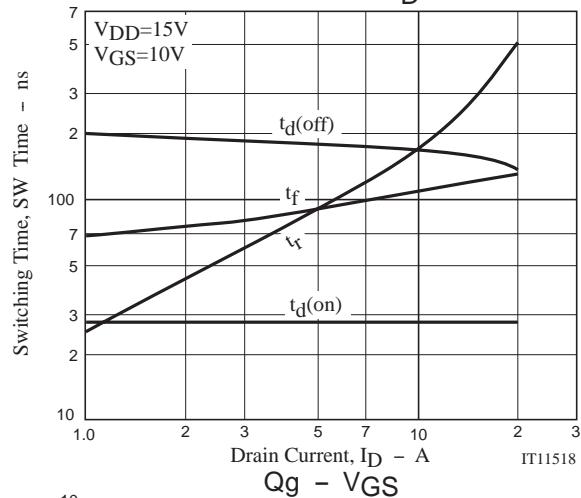
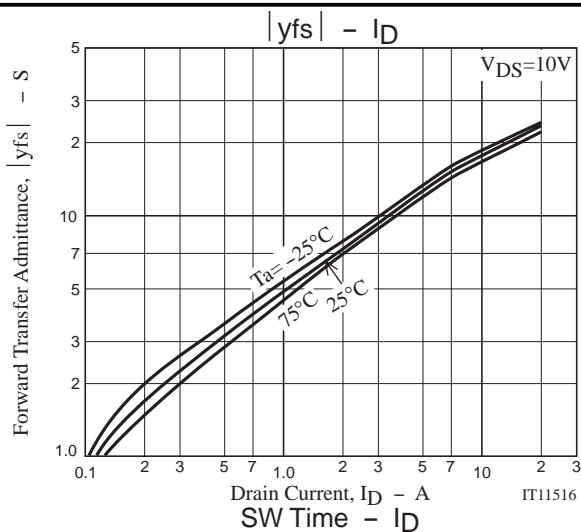
7005-002



## Switching Time Test Circuit



## FSS804



Note on usage : Since the FSS804 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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