



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

FSS294 — General-Purpose Switching Device Applications

Features

- ON-resistance $R_{DS(on)1}=7.8m\Omega(\text{typ.})$
- Input capacitance $C_{iss}=2650pF(\text{typ.})$
- 4V drive
- Protection diode in
- Halogen free compliance

Specifications

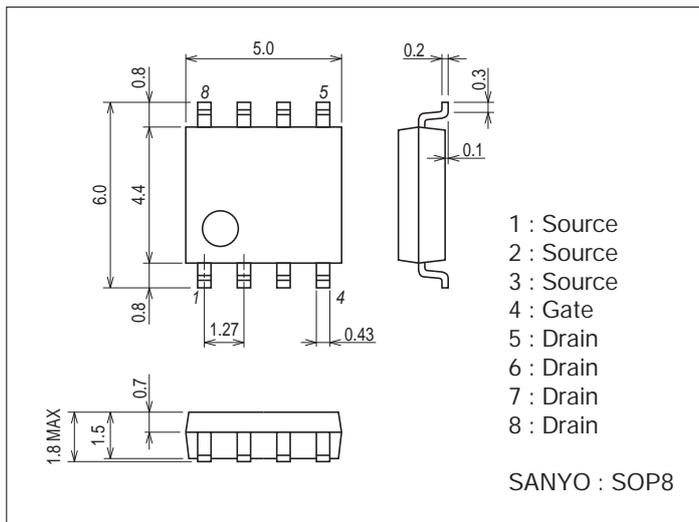
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		40	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		13	A
Drain Current ($PW \leq 10\mu s$)	I_{DP}	Duty cycle $\leq 1\%$	52	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate ($1200mm^2 \times 0.8mm$), $PW \leq 10s$	3.0	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions

unit : mm (typ)

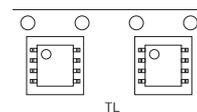
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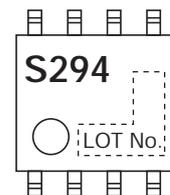
Product & Package Information

- Package : SOP8
- JEITA, JEDEC : SC-87, SOT-96
- Minimum Packing Quantity : 1,000 pcs./reel

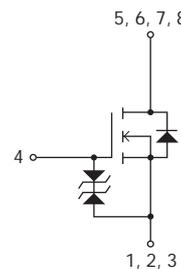
Packing Type : TL



Marking



Electrical Connection

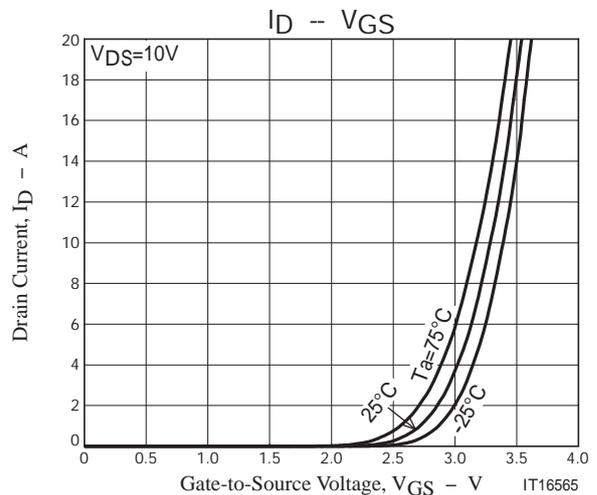
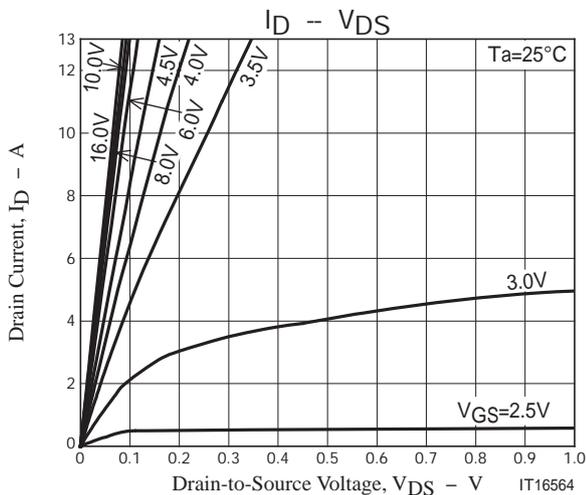
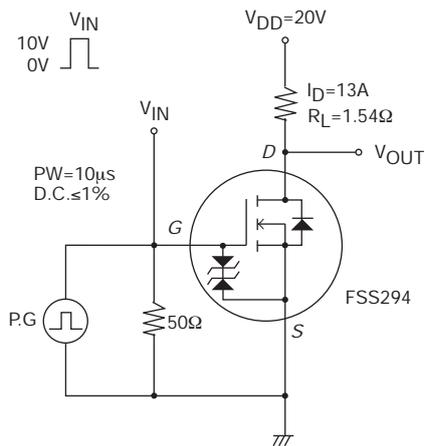


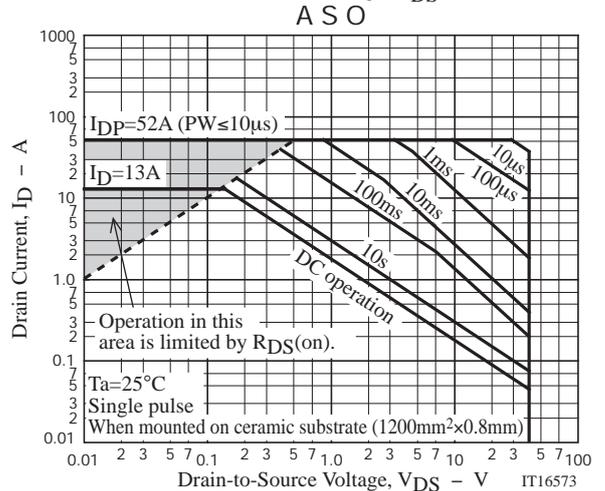
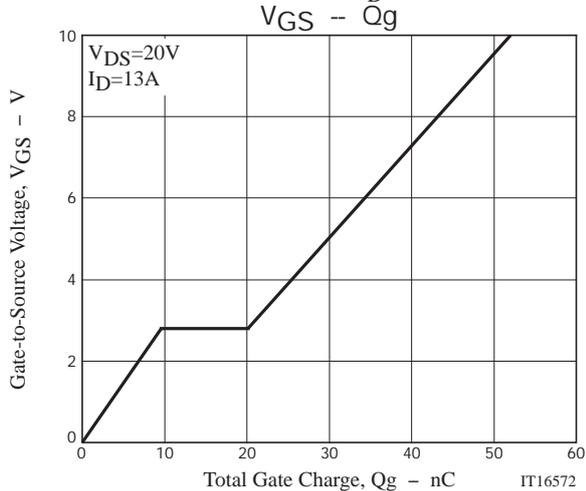
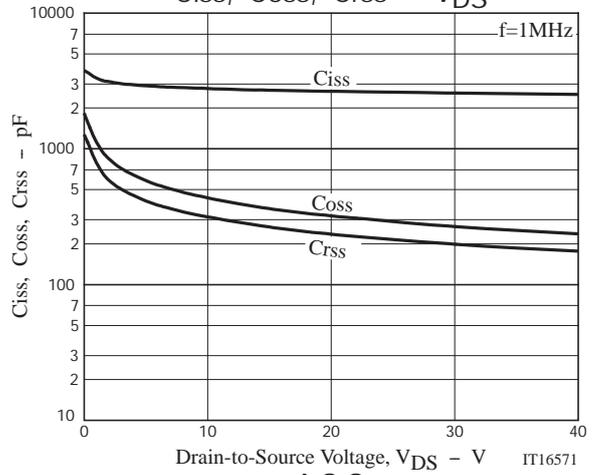
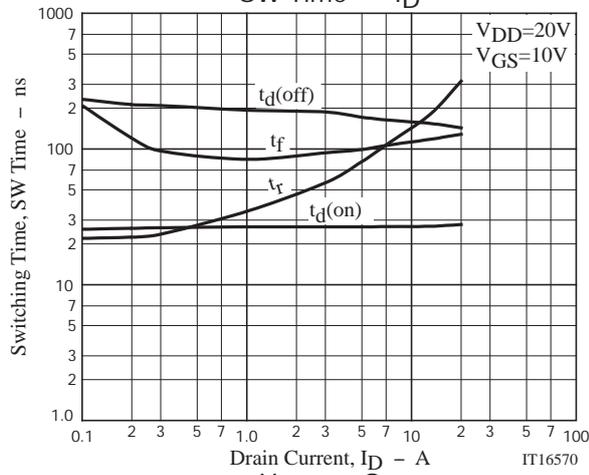
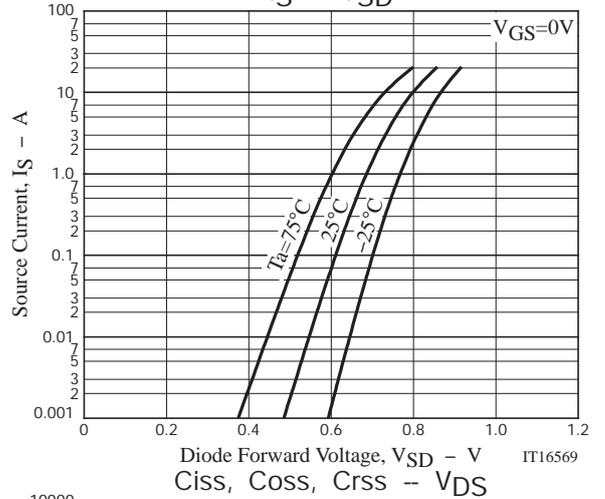
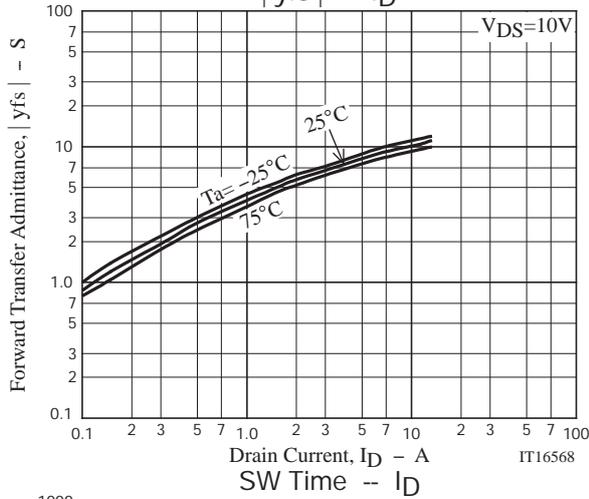
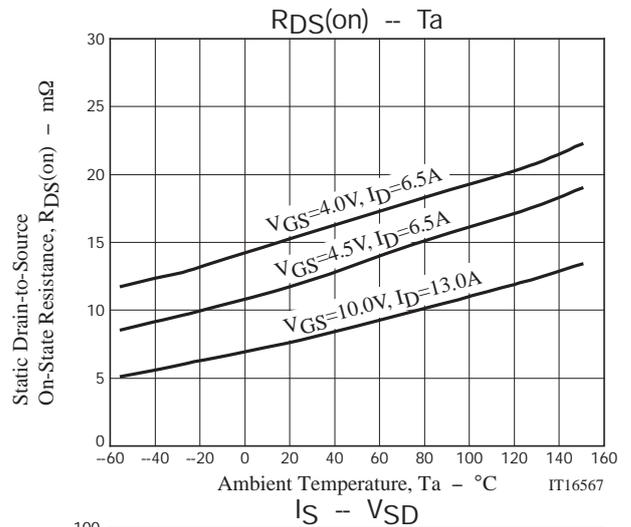
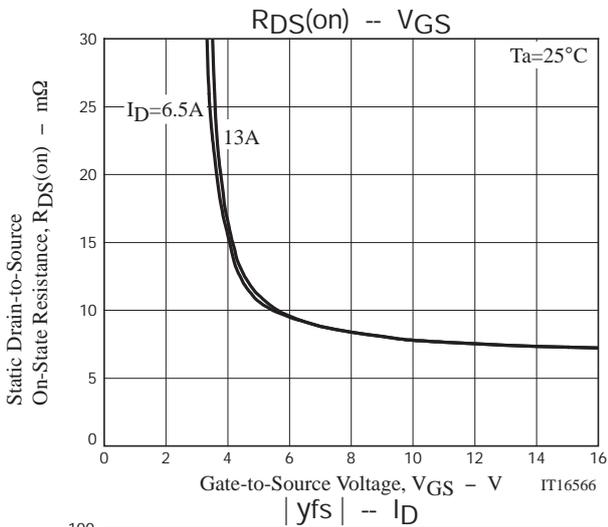
FSS294

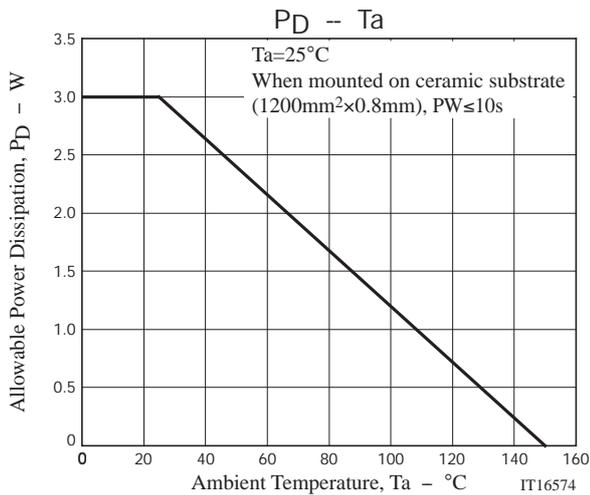
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	40			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40\text{V}, V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}, V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1.5		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=13\text{A}$		11		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=13\text{A}, V_{GS}=10\text{V}$		7.8	10.2	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=6.5\text{A}, V_{GS}=4.5\text{V}$		12	17	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=6.5\text{A}, V_{GS}=4\text{V}$		15.5	22	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}, f=1\text{MHz}$		2650		pF
Output Capacitance	C_{oss}			320		pF
Reverse Transfer Capacitance	C_{rss}			235		pF
Turn-ON Delay Time	$t_d(on)$			27		ns
Rise Time	t_r	See specified Test Circuit.		180		ns
Turn-OFF Delay Time	$t_d(off)$			154		ns
Fall Time	t_f			118		ns
Total Gate Charge	Q_g		$V_{DS}=20\text{V}, V_{GS}=10\text{V}, I_D=13\text{A}$		52	
Gate-to-Source Charge	Q_{gs}			9.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			10.5		nC
Diode Forward Voltage	V_{SD}	$I_S=13\text{A}, V_{GS}=0\text{V}$			0.81	1.2

Switching Time Test Circuit







Note on usage : Since the FSS294 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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