Ordering number:ENN5984A

P-Channel Silicon MOSFET

FSS101

Load S/W Applications

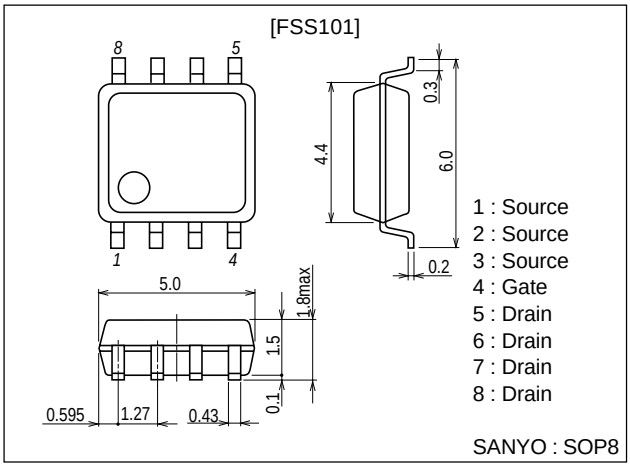
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensions

unit:mm

2116



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		–20	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		–5	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–32	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1200mm²×0.8mm)	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	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0	–20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–20V, V_{GS}=0			–10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=–10V, I_D=–1mA	–0.4		–1.4	V
Forward Transfer Admittance	| yfs |	V_{DS}=–10V, I_D=–5A	10	16		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}1$	I_D=–5A, V_{GS}=–4V		44	58	mΩ
	$R_{DS(on)}2$	I_D=–2A, V_{GS}=–2.5V		65	98	mΩ
Input Capacitance	Ciss	V_{DS}=–10V, f=1MHz		980		pF
Output Capacitance	Coss	V_{DS}=–10V, f=1MHz		500		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–10V, f=1MHz		210		pF

Marking : S101

Continued on next page.

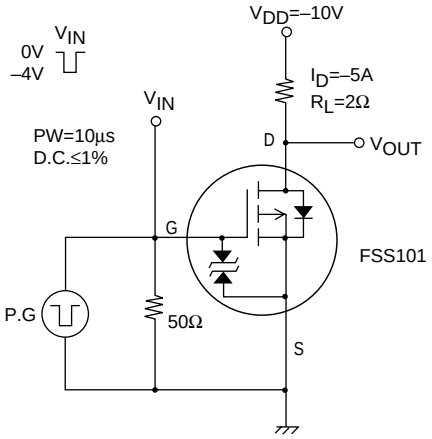
SANYO Electric Co.,Ltd. Semiconductor Company

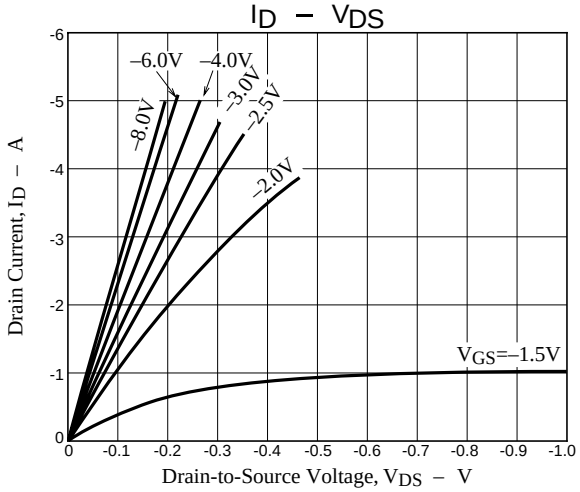
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

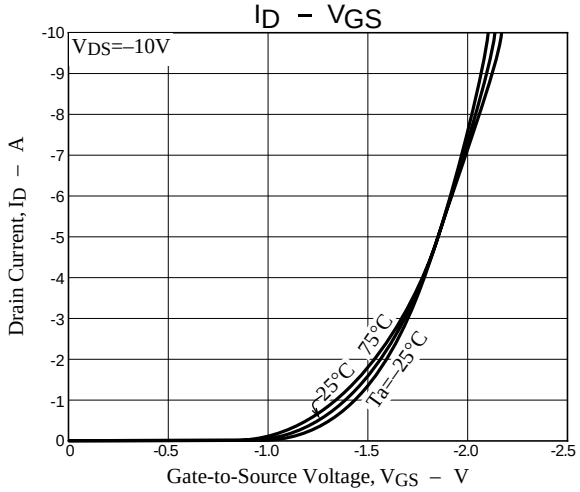
Continued from preceding page.

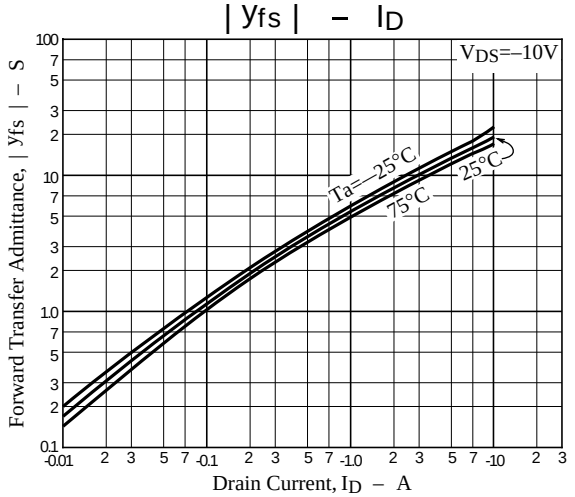
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		20		ns
Rise Time	t_r	See specified Test Circuit		115		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		110		ns
Fall Time	t_f	See specified Test Circuit		105		ns
Total Gate Charge	Qg	V_{DS}=–10V, V_{GS}=–10V, I_D=–5A		30		nC
Gate-to-Source Charge	Qgs	V_{DS}=–10V, V_{GS}=–10V, I_D=–5A		5		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=–10V, V_{GS}=–10V, I_D=–5A		7		nC
Diode Forward Voltage	V_{SD}	I_S=–5A, V_{GS}=0		–1.0	–1.5	V

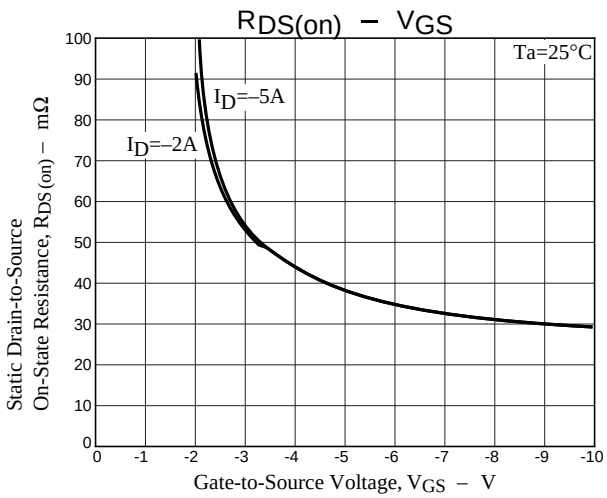
Switching Time Test Circuit

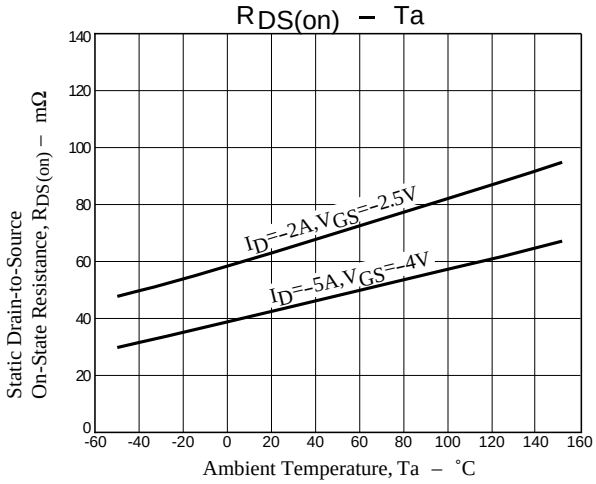


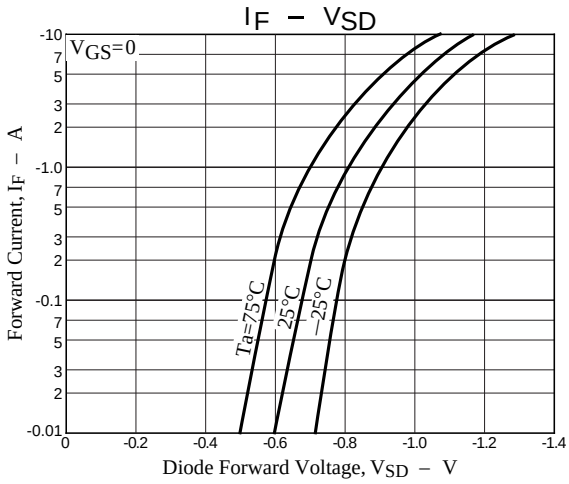


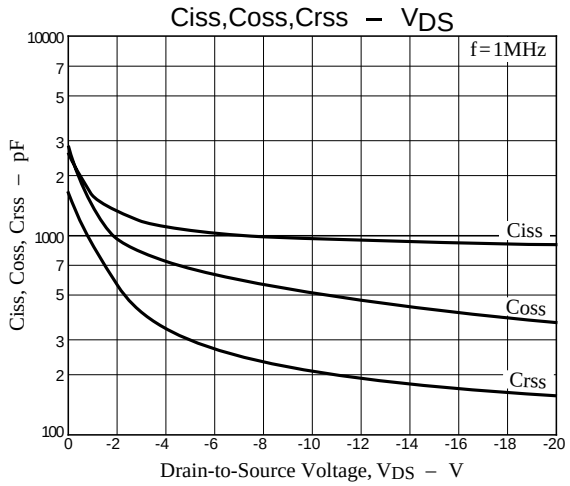


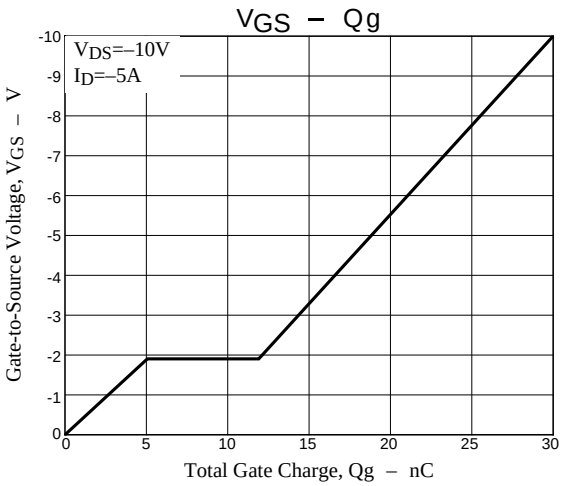


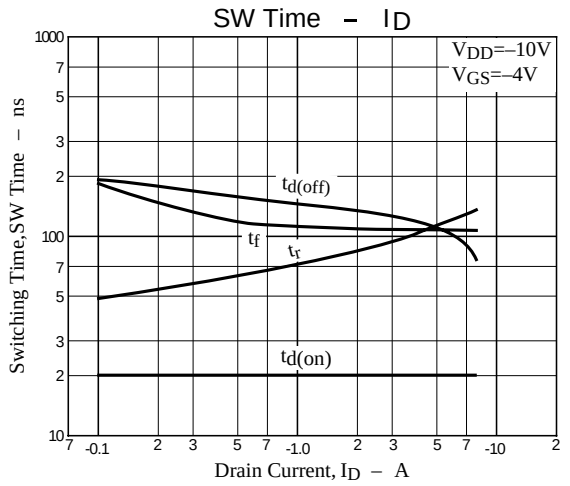


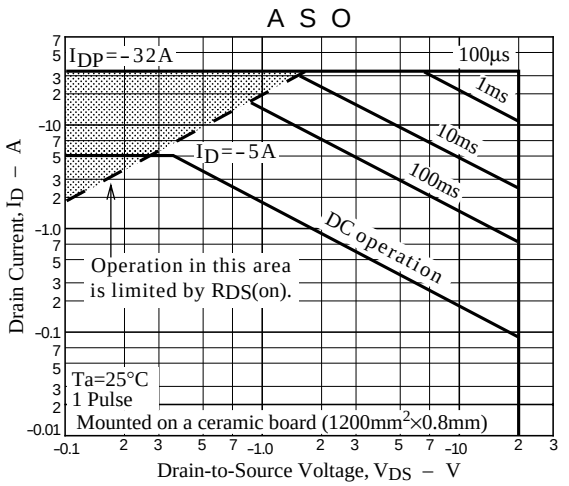

RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
ID=–2A,VGS=–2.5V
ID=–5A,VGS=–4V
Ambient Temperature, Ta – ˚C

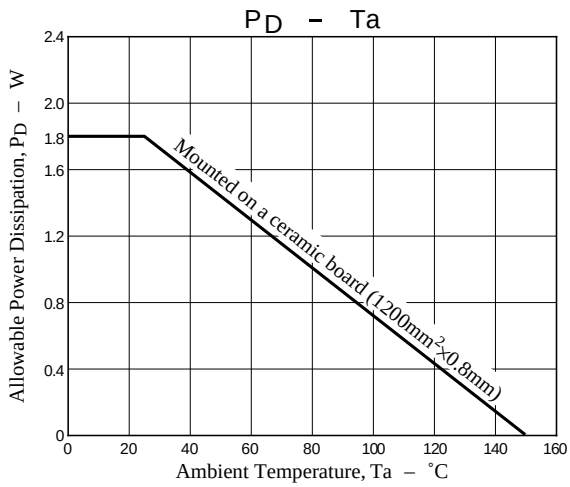

IF – VSD
VGS=0
Forward Current, IF – A
Ta=75°C
25°C
–25°C
Diode Forward Voltage, VSD – V


Ciss,Coss,Crss – VDS
f=1MHz
Ciss, Coss, Crss – pF
Ciss
Coss
Crss
Drain-to-Source Voltage, VDS – V


VGS – Qg
VDS=–10V
ID=–5A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC


SW Time – ID
VDD=–10V
VGS=–4V
Switching Time,SW Time – ns
td(off)
tf
tr
td(on)
Drain Current, ID – A


A S O
IDP=–32A
ID=–5A
100µs
1ms
10ms
100ms
DC operation
Operation in this area
is limited by RDS(on).
Ta=25°C
1 Pulse
Mounted on a ceramic board (1200mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V


PD – Ta
Allowable Power Dissipation, PD – W
Mounted on a ceramic board (1200mm2×0.8mm)
Ambient Temperature, Ta – ˚C