Ordering number : ENA0341

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

FSS145 — General-Purpose Switching Device Applications

Features

- Load switching applications.
- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−45	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−8	A
Drain Current (PW≤10s)	I_D	Duty cycle≤1%	−8.5	A
Drain Current (PW≤10μs)	I_{DP}	Duty cycle≤1%	−32	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1200mm²X0.8mm), PW≤10s	2.9	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}=0V	−45			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−45V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=−10V, I_D=−8A	10	17		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−8A, V_{GS}=−10V		18	24	mΩ
	R_{DS}(on)2	I_D=−4A, V_{GS}=−4V		28	40	mΩ
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		3490		pF
Output Capacitance	Coss	V_{DS}=−20V, f=1MHz		370		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−20V, f=1MHz		290		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		35		ns
Rise Time	t_r	See specified Test Circuit.		65		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		270		ns
Fall Time	t_f	See specified Test Circuit.		125		ns

Marking : S145

Continued on next page.

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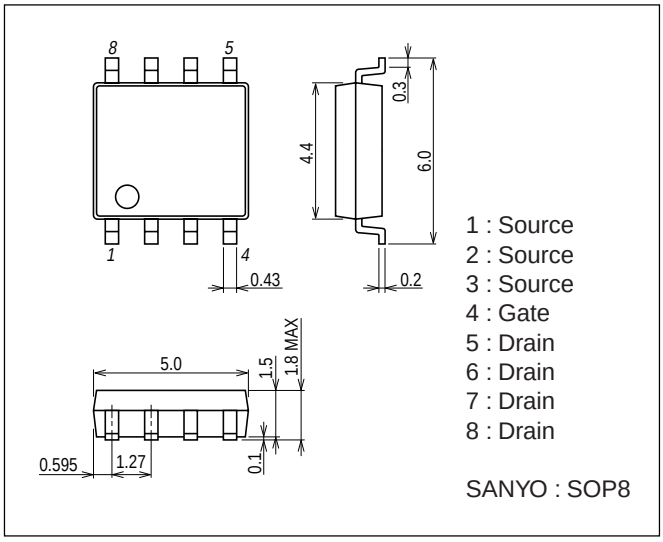
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V_{DS}=-24V, V_{GS}=-10V, I_D=-8A		63		nC
Gate-to-Source Charge	Qgs	V_{DS}=-24V, V_{GS}=-10V, I_D=-8A		9		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=-24V, V_{GS}=-10V, I_D=-8A		12		nC
Diode Forward Voltage	V_{SD}	I_S=-8A, V_{GS}=0V		-0.81	-1.5	V

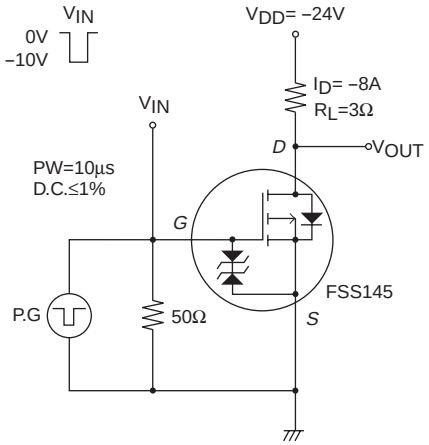
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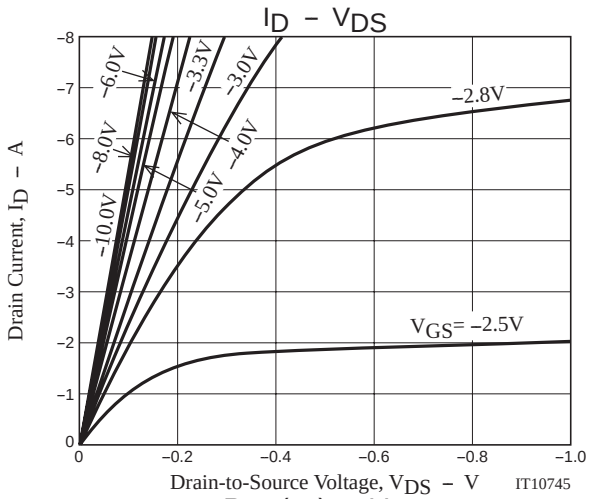
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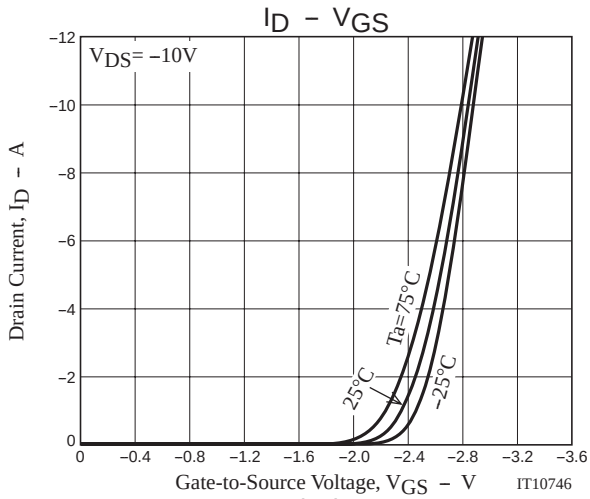
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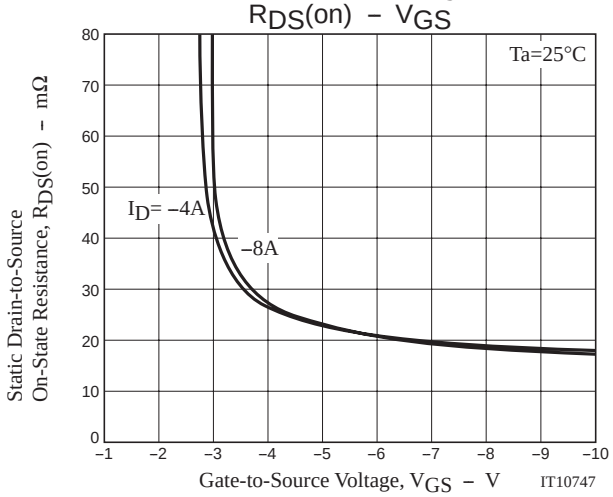


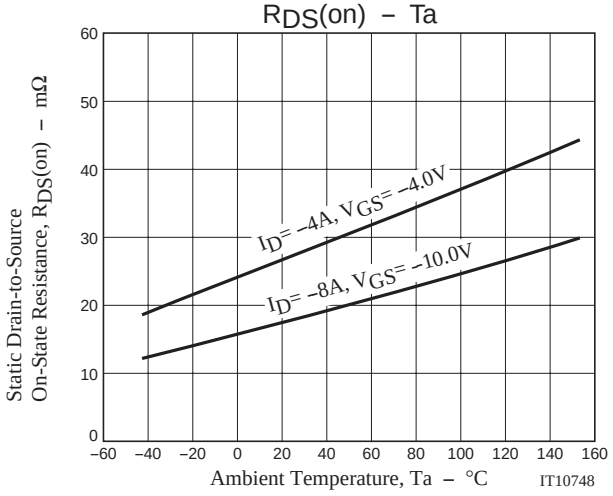
Switching Time Test Circuit

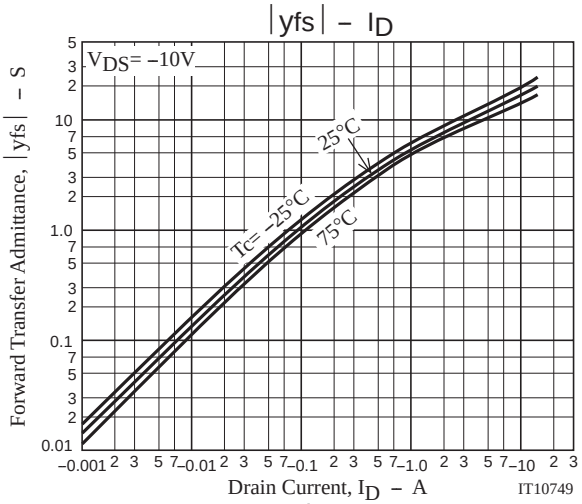


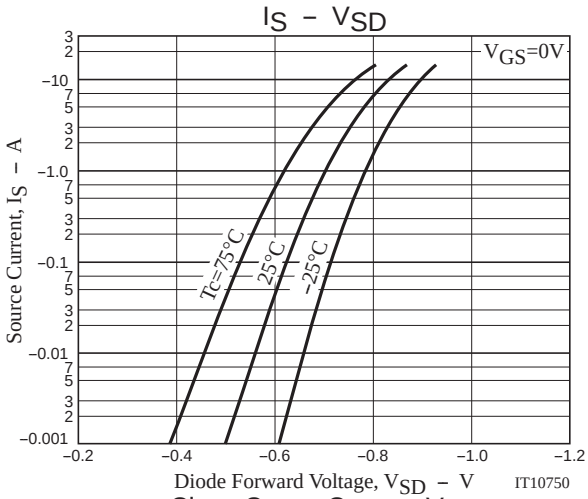


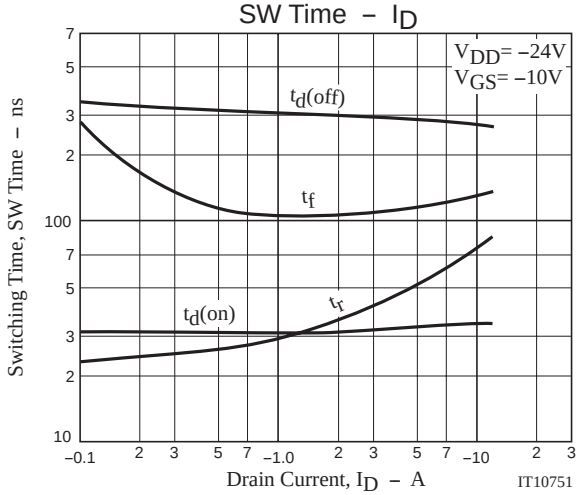


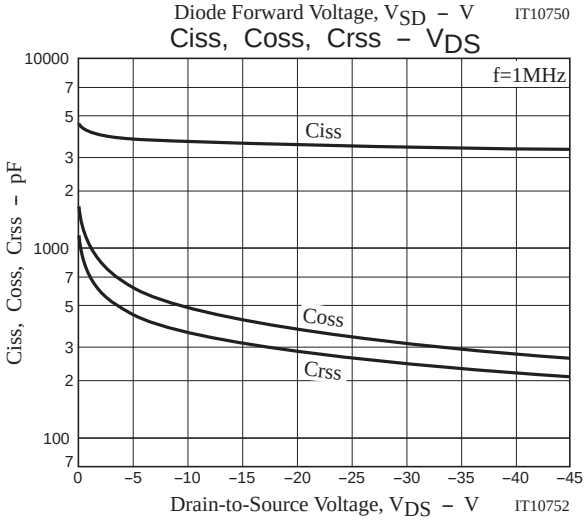


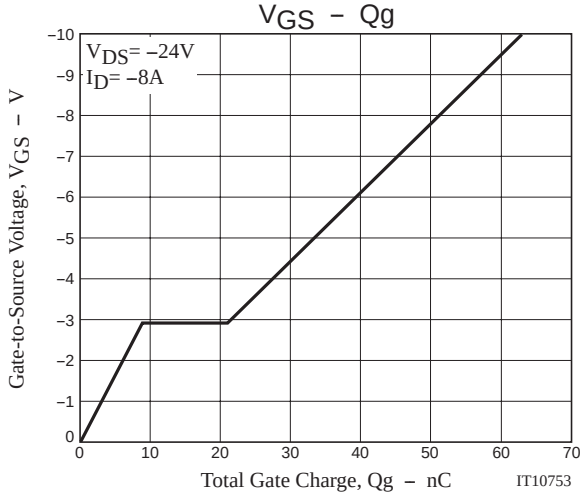


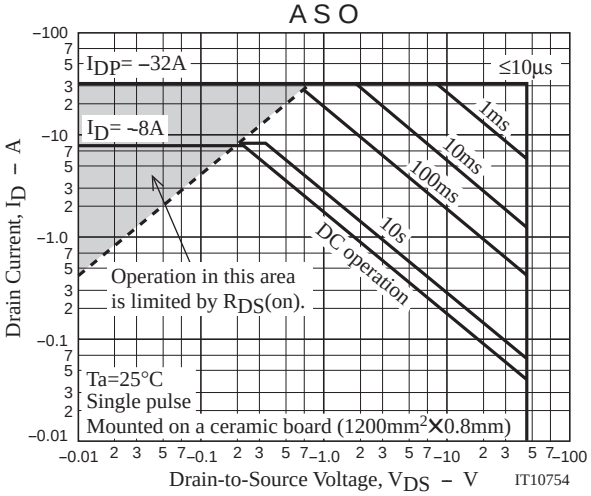

|yfs| – ID
VDS= –10V
25°C
Tc= –25°C
75°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT10749

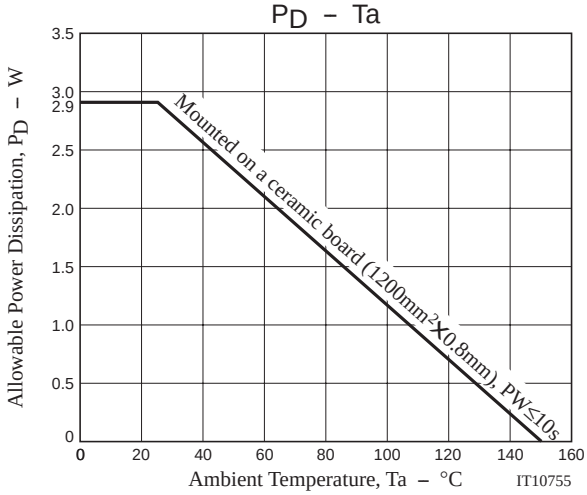

IS – VSD
VGS=0V
Tc=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT10750


SW Time – ID
VDD= –24V
VGS= –10V
td(off)
tf
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT10751


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT10752


VGS – Qg
VDS= –24V
ID= –8A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT10753


ASO
IDP= –32A
≤10μs
ID= –8A
1ms
10ms
100ms
10s
DC operation
Operation in this area
is limited by RDS(on).
Ta=25°C
Single pulse
Mounted on a ceramic board (1200mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT10754


PD – Ta
Mounted on a ceramic board (1200mm2×0.8mm), PW≤10s
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT10755

Note on usage : Since the FSS145 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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