Ordering number : ENA1805

SANYO Semiconductors

DATA SHEET

P-Channel Silicon MOSFET

FW707 — General-Purpose Switching Device Applications

Features

- Composite type with a P-channel MOSFET driving from a 4V supply voltage contained in a single package
- High-density mounting

Specifications

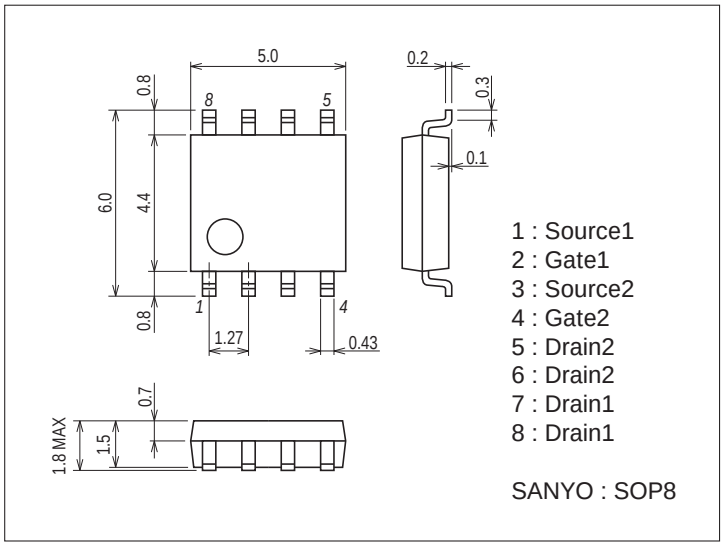
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−30	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%	−9	A
Drain Current (PW≤100ms)	I_D	Duty cycle≤1%	−19	A
Drain Current (PW≤10μs)	I_{DP}	Duty cycle≤1%	−52	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (2000mm²×0.8mm) 1unit, PW≤10s	2.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (2000mm²×0.8mm), PW≤10s	2.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

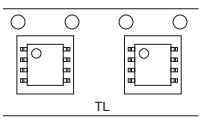
7005A-003



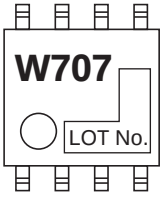
Product & Package Information

- Package : SOP8
- JEITA, JEDEC : SC-87, SOT96
- Minimum Packing Quantity : 1,000 pcs./reel

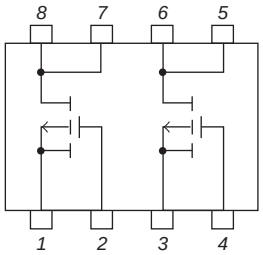
Packing Type : TL



Marking



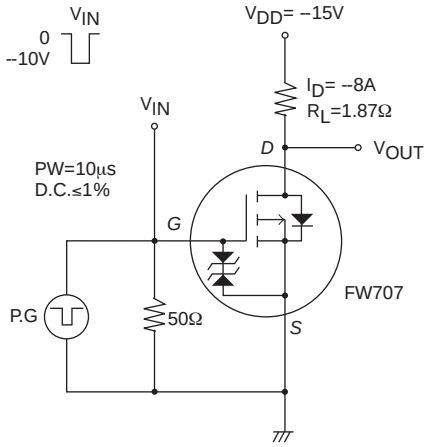
Electrical Connection

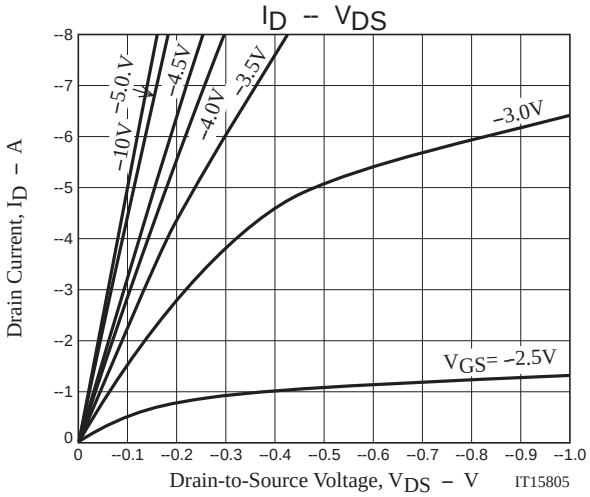


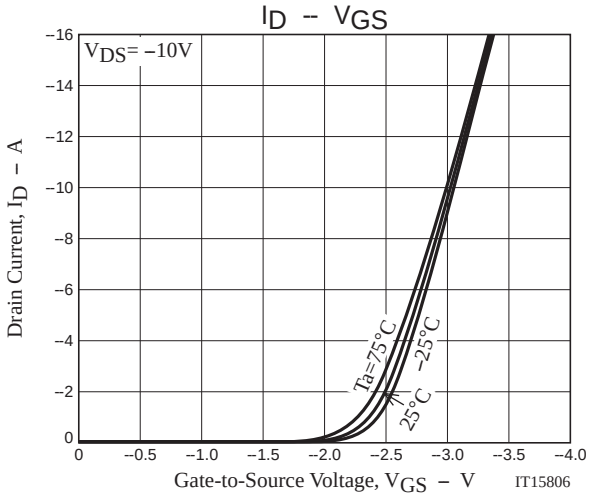
Electrical Characteristics at Ta=25°C

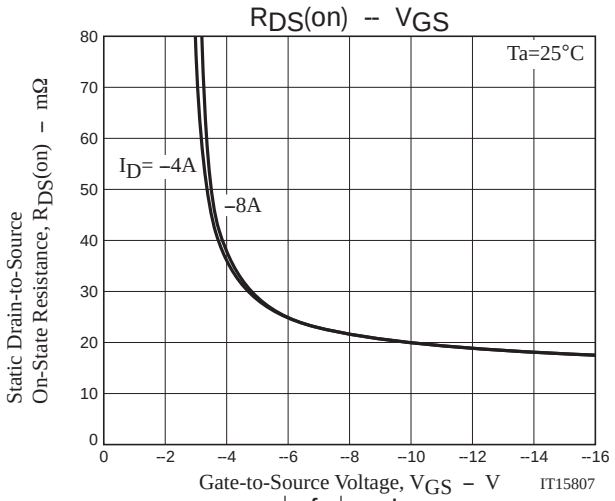
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−8A		10		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−8A, V_{GS}=−10V		20	26	mΩ
	R_{DS}(on)2	I_D=−4A, V_{GS}=−4.5V		32	45	mΩ
	R_{DS}(on)3	I_D=−4A, V_{GS}=−4V		36	51	mΩ
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		900		pF
Output Capacitance	Coss	V_{DS}=−10V, f=1MHz		240		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−10V, f=1MHz		160		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		8.7		ns
Rise Time	t_r	See specified Test Circuit.		73		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		84		ns
Fall Time	t_f	See specified Test Circuit.		74		ns
Total Gate Charge	Qg	V_{DS}=−15V, V_{GS}=−10V, I_D=−8A		18		nC
Gate-to-Source Charge	Qgs	V_{DS}=−15V, V_{GS}=−10V, I_D=−8A		2.1		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=−15V, V_{GS}=−10V, I_D=−8A		4.7		nC
Diode Forward Voltage	V_{SD}	I_S=−8A, V_{GS}=0V		−0.82	−1.2	V

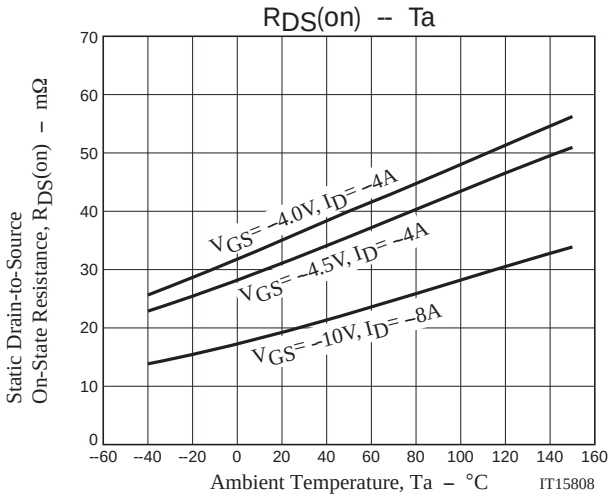
Switching Time Test Circuit

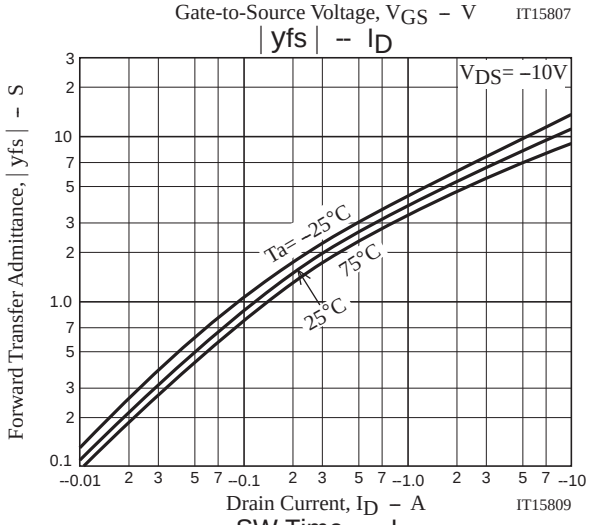


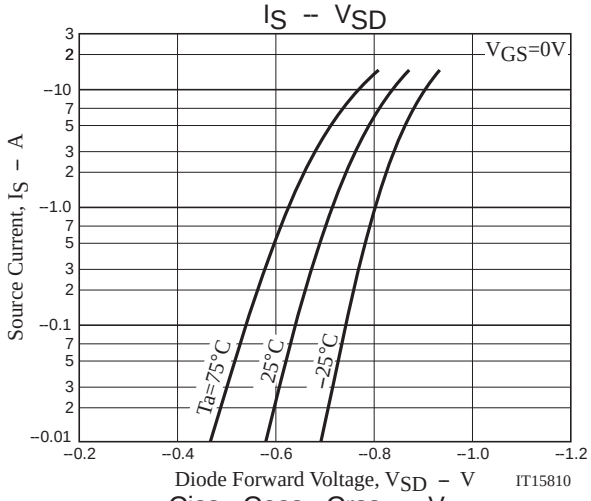


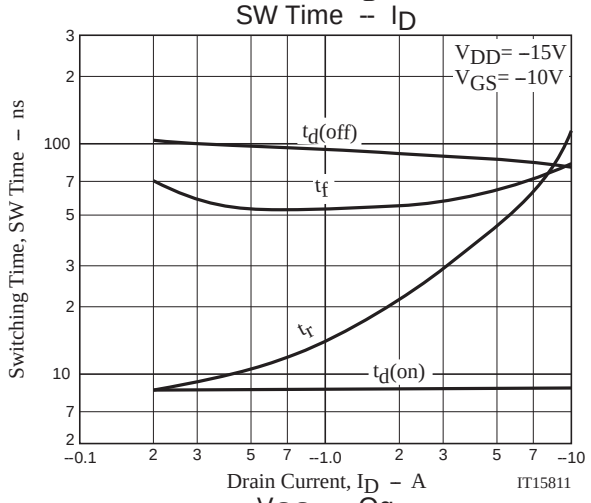


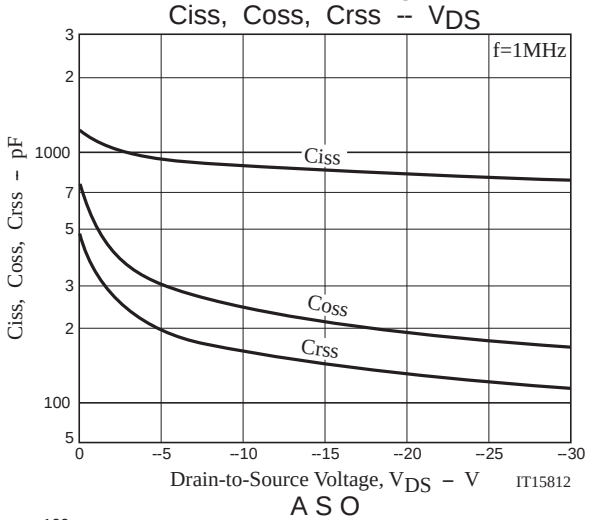

RDS(on) -- VGS
Ta=25°C
ID= –4A
–8A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT15807

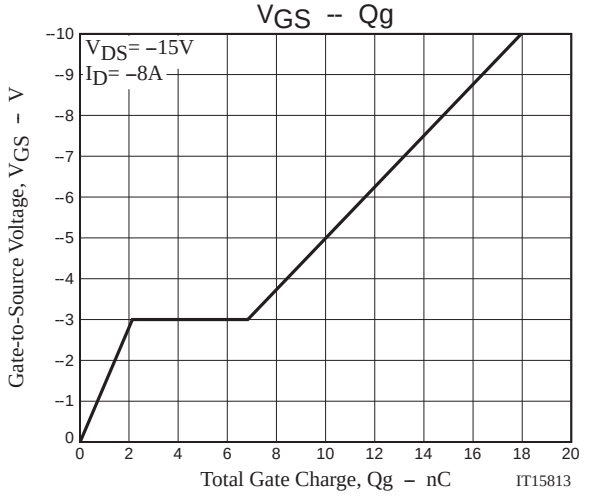

RDS(on) -- Ta
VGS= –4.0V, ID= –4A
VGS= –4.5V, ID= –4A
VGS= –10V, ID= –8A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT15808

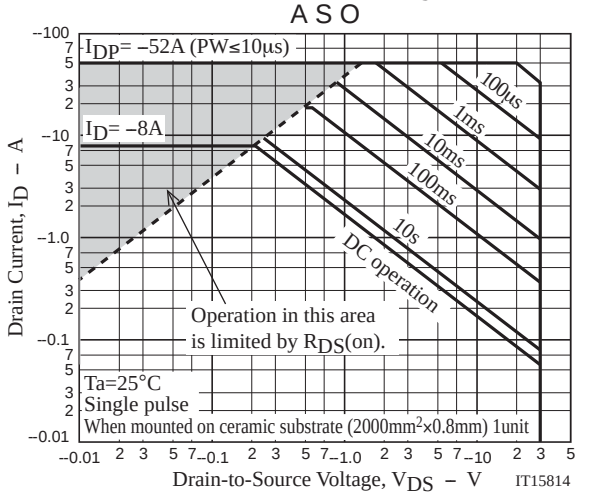

| yfs | -- ID
VDS= –10V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT15809

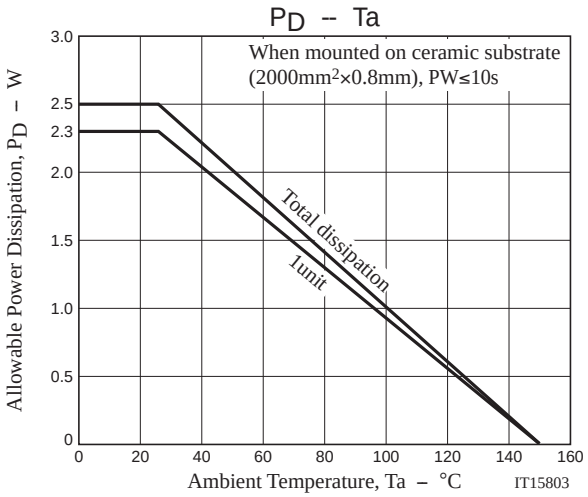

IS -- VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT15810

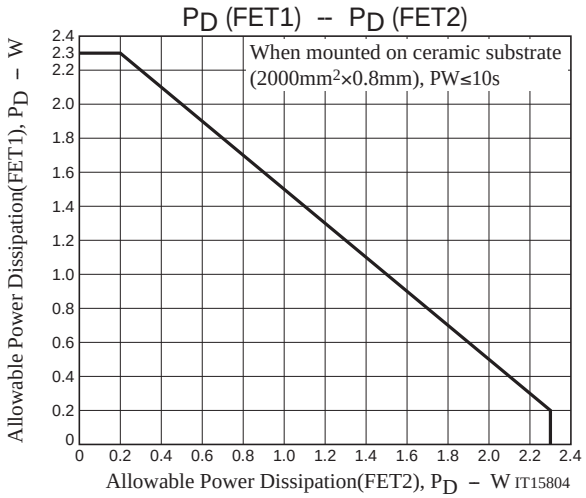

SW Time -- ID
VDD= –15V
VGS= –10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT15811


Ciss, Coss, Crss -- VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT15812


VGS -- Qg
VDS= –15V
ID= –8A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT15813


A S O
IDP= –52A (PW≤10μs)
ID= –8A
100μs
1ms
10ms
100ms
10s
DC operation
Operation in this area is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (2000mm²×0.8mm) 1unit
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT15814





Note on usage : Since the FW707 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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