Ordering number : ENA1549

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

FW282 — General-Purpose Switching Device Applications

Features

- 4V drive.
- Composite type, facilitating high-density mounting.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		35	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		6	A
Drain Current (PW≤10s)	I_D	Duty cycle≤1%	6.5	A
Drain Current (PW≤10μs)	I_{DP}	Duty cycle≤1%	24	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (2000mm^2×0.8mm) 1unit, PW≤10s	1.8	W
Total Dissipation	P_T	When mounted on ceramic substrate (2000mm^2×0.8mm), PW≤10s	2.2	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	35			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=35V, 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	1.5		2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=6A	1.8	3		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=6A, V_{GS}=10V		28	37	mΩ
	$R_{DS}(on)2$	I_D=3A, V_{GS}=4.5V		43	61	mΩ
	$R_{DS}(on)3$	I_D=3A, V_{GS}=4V		52	73	mΩ

Marking : W282

Continued on next page.

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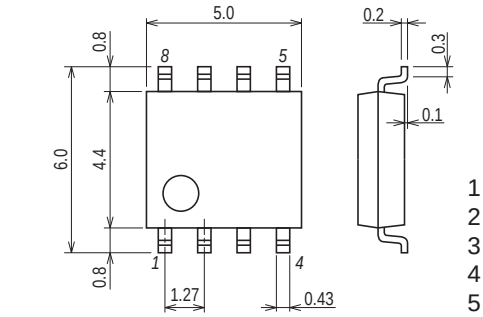
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		470		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		70		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		35		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		8		ns
Rise Time	t_{r}	See specified Test Circuit.		34		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		31		ns
Fall Time	t_{f}	See specified Test Circuit.		30		ns
Total Gate Charge	Qg	V_{DS}=20V, V_{GS}=10V, I_{D}=6A		10		nC
Gate-to-Source Charge	Qgs	V_{DS}=20V, V_{GS}=10V, I_{D}=6A		2		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=20V, V_{GS}=10V, I_{D}=6A		2		nC
Diode Forward Voltage	V_{SD}	I_{S}=6A, V_{GS}=0V		0.84	1.2	V

Package Dimensions

unit : mm (typ)

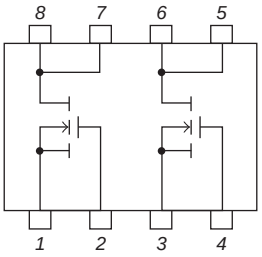
7005A-003



1 : Source1
2 : Gate1
3 : Source2
4 : Gate2
5 : Drain2
6 : Drain2
7 : Drain1
8 : Drain1

SANYO : SOP8

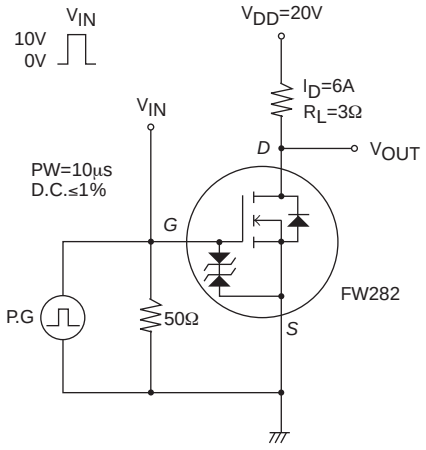
Electrical Connection

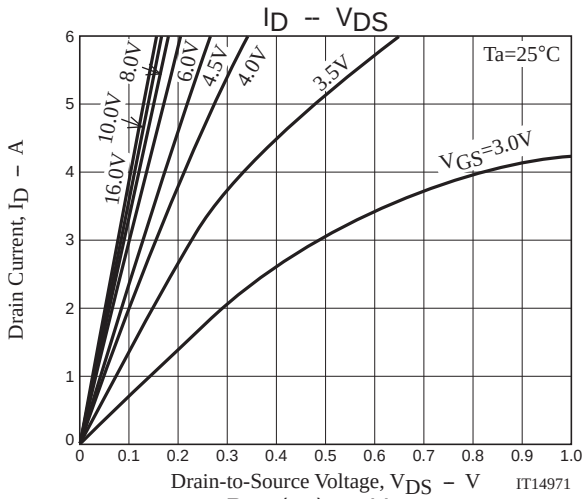


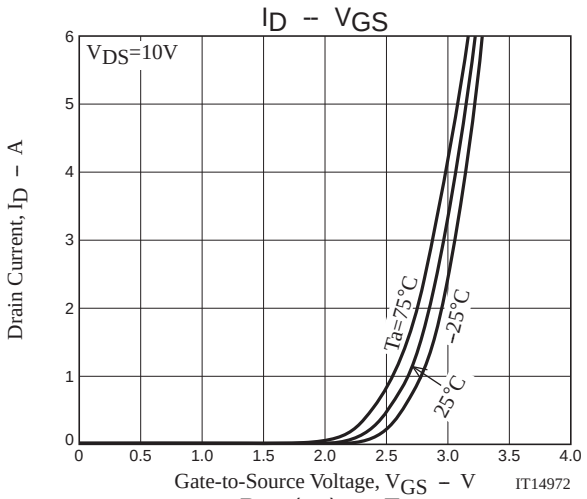
1 : Source1
2 : Gate1
3 : Source2
4 : Gate2
5 : Drain2
6 : Drain2
7 : Drain1
8 : Drain1

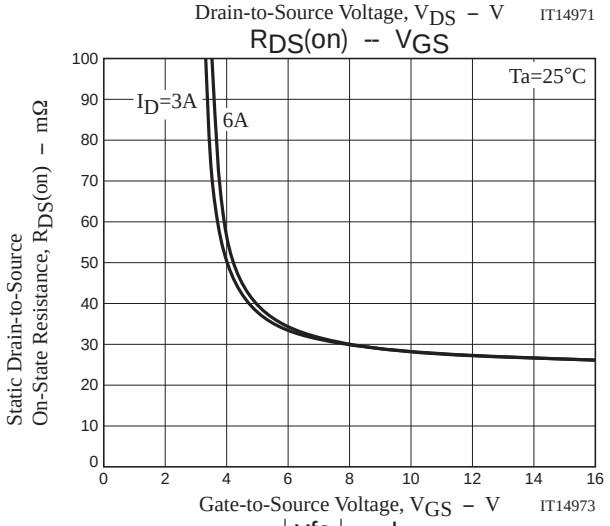
Top view

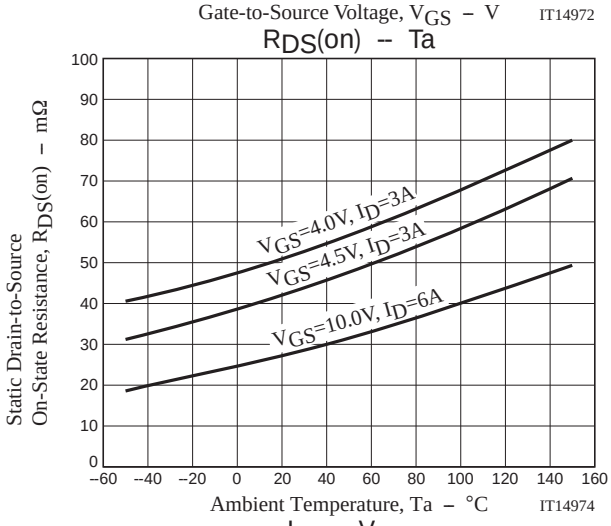
Switching Time Test Circuit

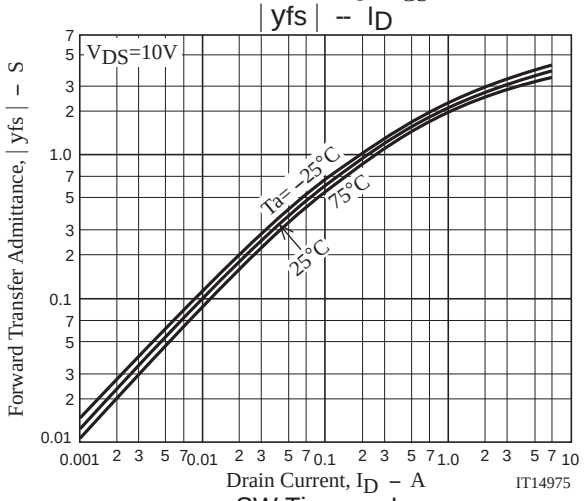


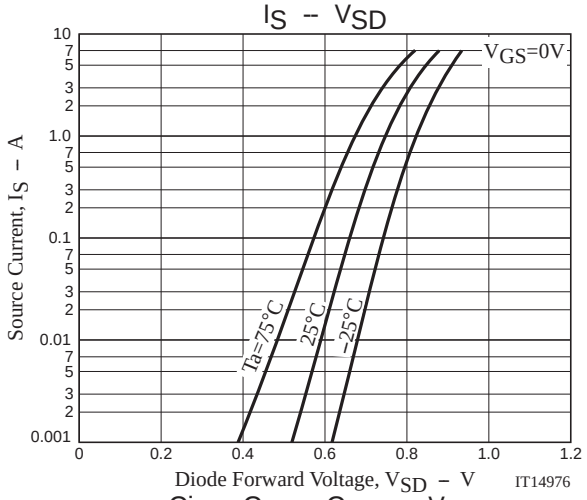

ID -- VDS
Ta=25°C
VGS=3.0V
3.5V
4.0V
4.5V
6.0V
8.0V
10.0V
16.0V
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT14971

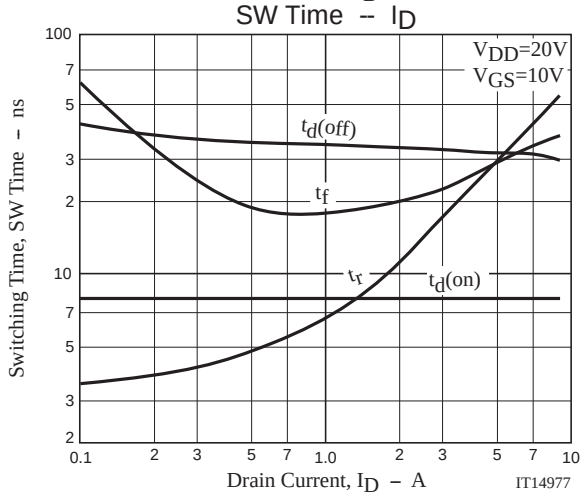

ID -- VGS
VDS=10V
Ta=75°C
25°C
–25°C
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT14972

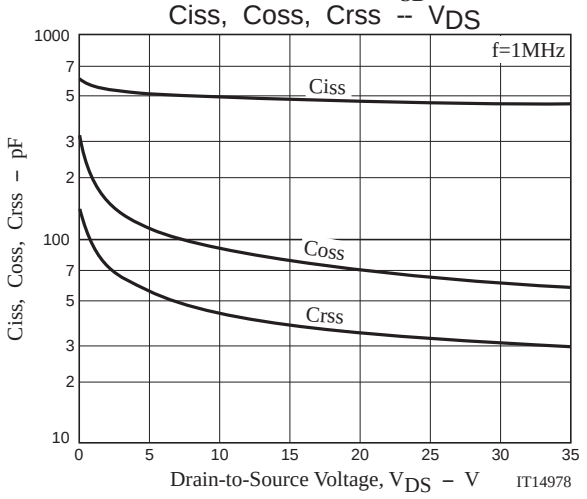

RDS(on) -- VGS
Ta=25°C
ID=3A
6A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT14973

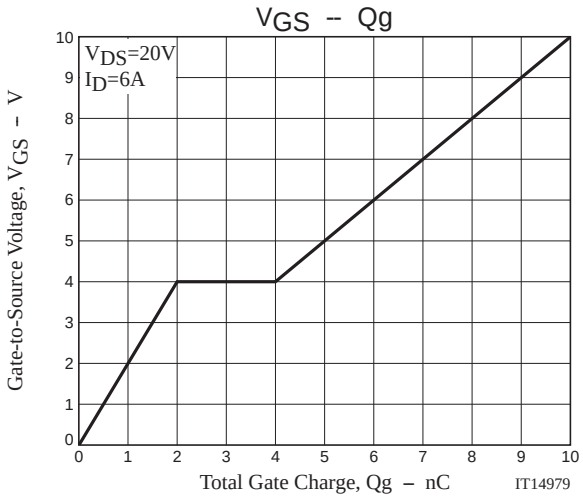

RDS(on) -- Ta
VGS=4.0V, ID=3A
VGS=4.5V, ID=3A
VGS=10.0V, ID=6A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT14974

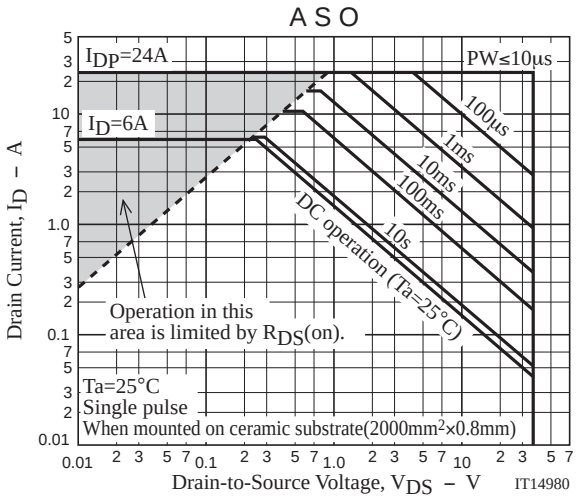

| yfs | -- ID
VDS=10V
Ta= –25°C
25°C
75°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT14975

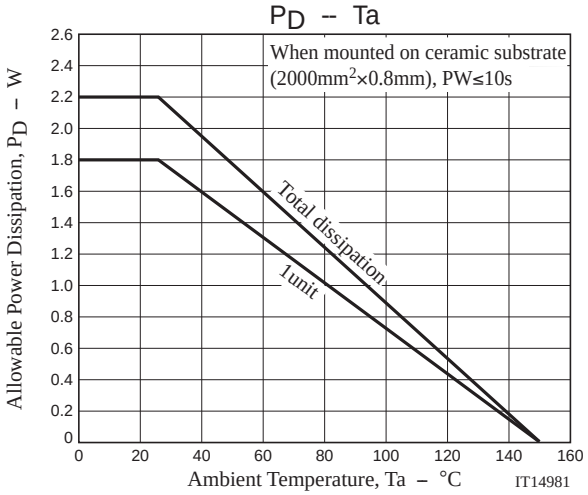

IS -- VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT14976


SW Time -- ID
VDD=20V
VGS=10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT14977


Ciss, Coss, Crss -- VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT14978







Note on usage : Since the FW282 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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