Ordering number:ENN6267

N-Channel Silicon MOSFET

FTD2014

Load Switching Applications

Features

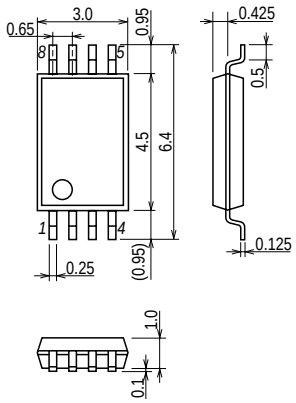
- Low ON resistance.
- 2.5V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.

Package Dimensions

unit:mm

2155A

[FTD2014]



1 : Drain1
2 : Source1
3 : Source1
4 : Gate1
5 : Gate2
6 : Source2
7 : Source2
8 : Drain2
SANYO : TSSOP8

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		4	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	20	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm²×0.8mm) 1unit	0.8	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm²×0.8mm)	1.3	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			1	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		1.3	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=4A	7	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}1$	I_D=4A, V_{GS}=4V		32	42	mΩ
	$R_{DS(on)}2$	I_D=2A, V_{GS}=2.5V		42	59	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		700		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		200		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		150		pF

Marking : D2014

Continued on next page.

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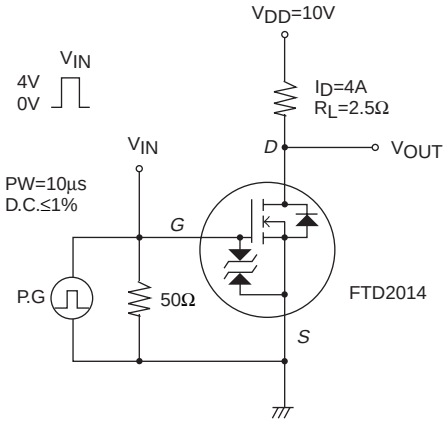
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TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

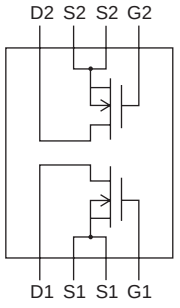
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See Specified Test Circuit		14		ns
Rise Time	t_r	See Specified Test Circuit		130		ns
Turn-OFF Delay Time	$t_{d(off)}$	See Specified Test Circuit		83		ns
Fall Time	t_f	See Specified Test Circuit		110		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=10V, I_D=4A		24		nC
Gate-to-Source Charge	Qgs			1.4		nC
Gate-to-Drain "Miller" Charge	Qgd			3.2		nC
Diode Forward Voltage	V_{SD}	I_S=4A, V_{GS}=0		0.85	1.2	V

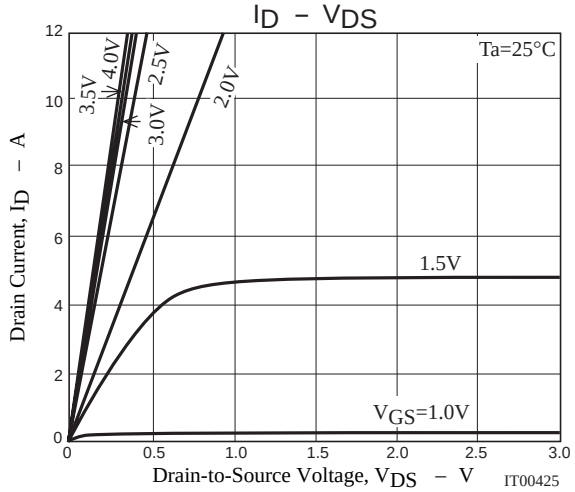
Switching Time Test Circuit

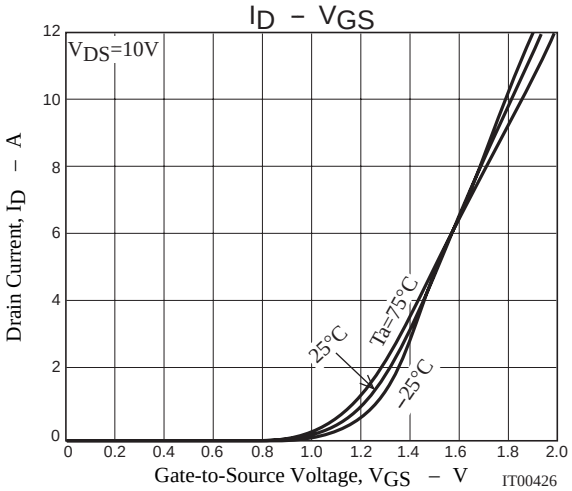


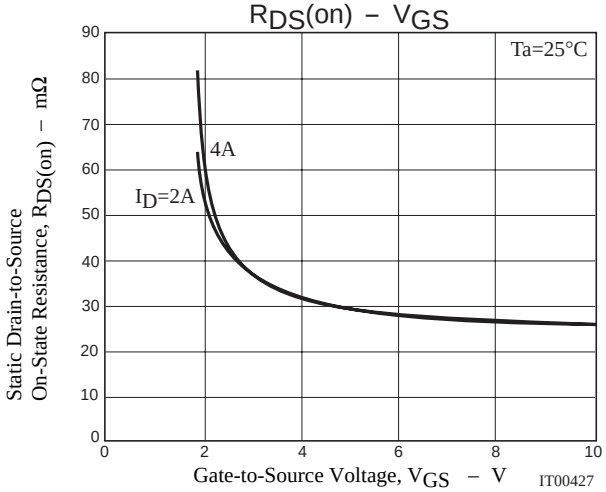
Electrical Connection

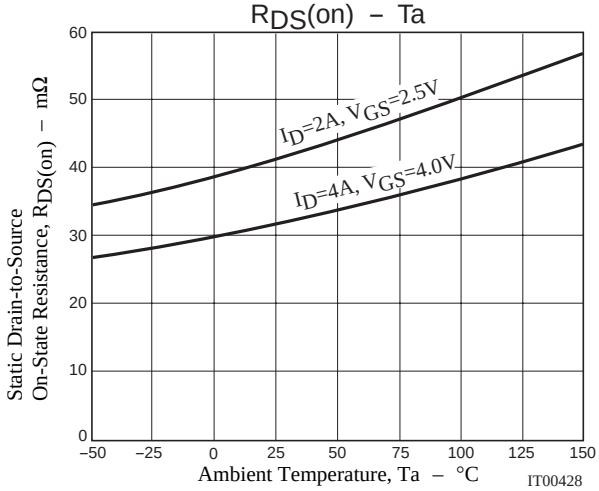


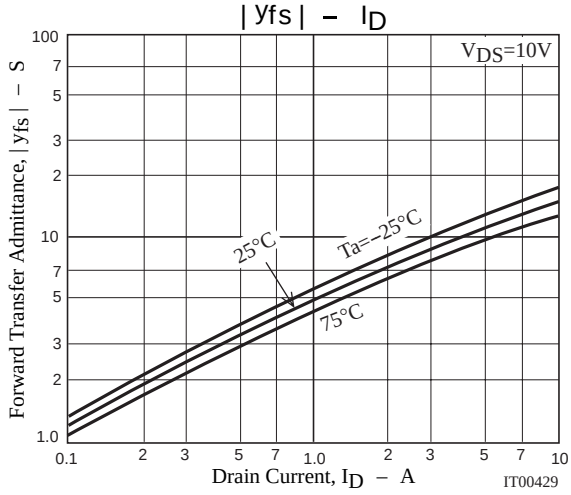
(Top view)

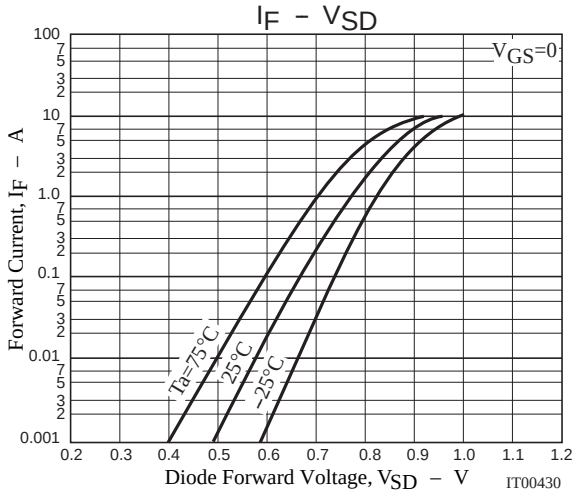


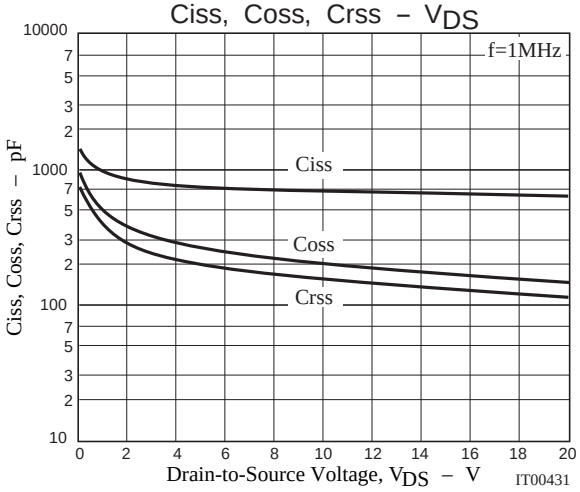


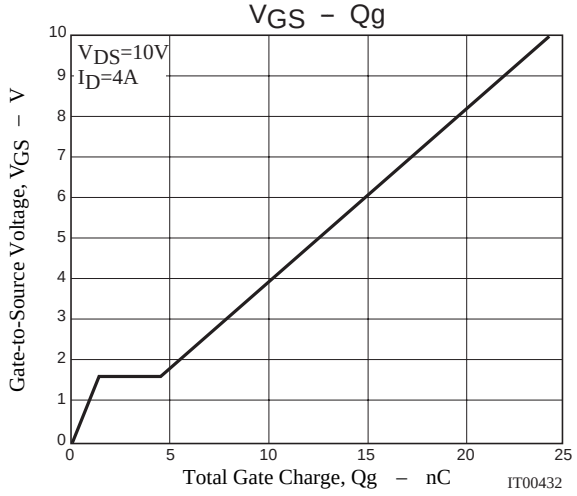


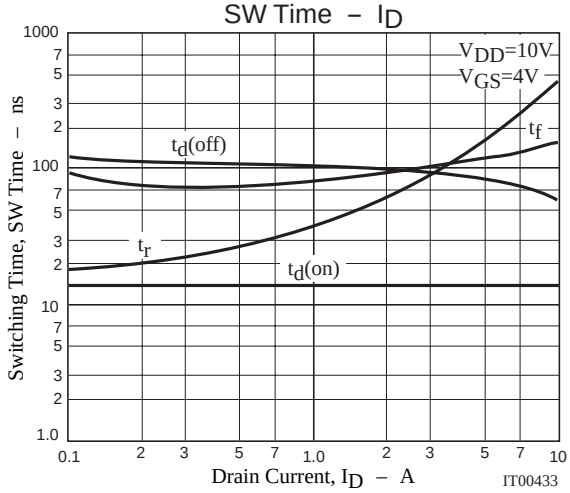


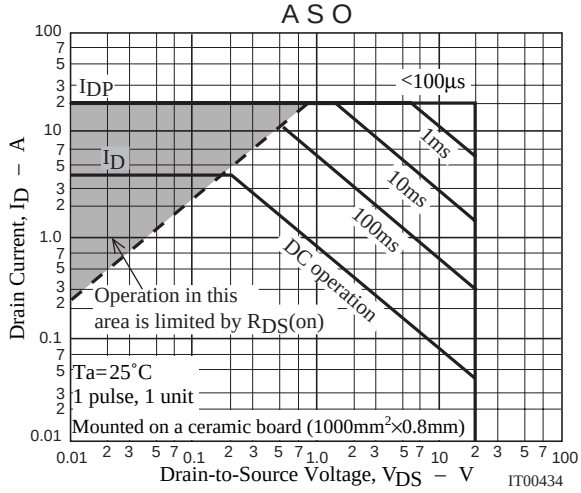

| yfs | – ID
VDS=10V
Forward Transfer Admittance, | yfs | – S
25°C
Ta=–25°C
75°C
Drain Current, ID – A
IT00429

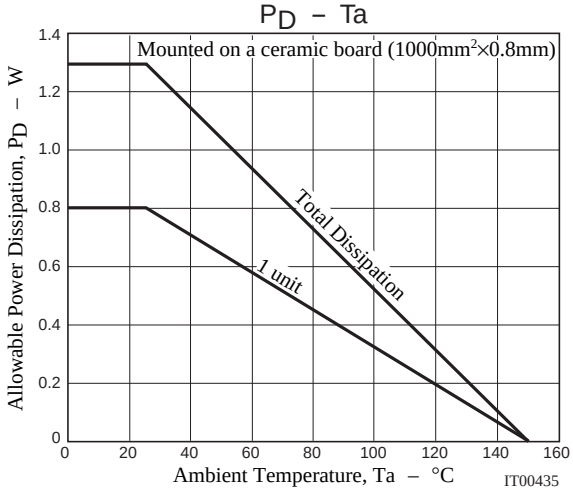

IF – VSD
VGS=0
Forward Current, IF – A
Ta=75°C
25°C
–25°C
Diode Forward Voltage, VSD – V
IT00430


Ciss, Coss, Crss – VDS
f=1MHz
Ciss, Coss, Crss – pF
Ciss
Coss
Crss
Drain-to-Source Voltage, VDS – V
IT00431


VGS – Qg
VDS=10V
ID=4A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT00432


SW Time – ID
VDD=10V
VGS=4V
Switching Time, SW Time – ns
td(off)
tf
tr
td(on)
Drain Current, ID – A
IT00433


A S O
IDP
ID
<100µs
1ms
10ms
100ms
DC operation
Operation in this
area is limited by RDS(on)
Ta=25°C
1 pulse, 1 unit
Mounted on a ceramic board (1000mm²×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT00434


PD – Ta
Mounted on a ceramic board (1000mm²×0.8mm)
Total Dissipation
1 unit
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT00435

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