Ordering number : ENN7469

N-Channl Silicon MOSFET

FTD2017A

Load Switching Applications

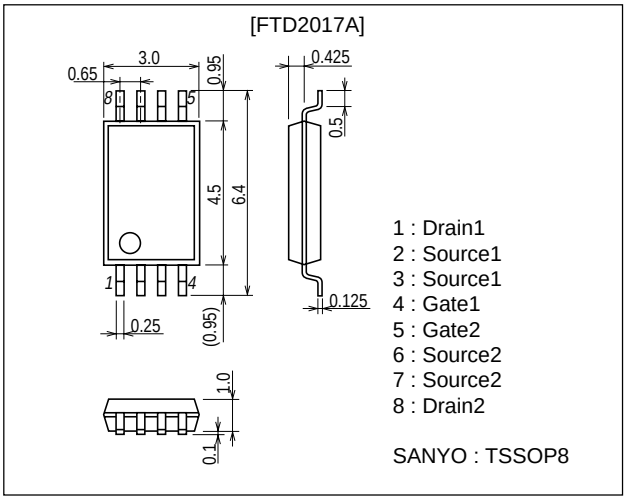
Features

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

Package Dimensions

unit : mm

2155A



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}		±12	V
Drain Current (DC)	I_D		6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	40	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm²X0.8mm) 1unit	1.3	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm²X0.8mm)	1.4	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	0.5		1.3	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=10V, I_D=6A	9	13		S

Marking : D2017A

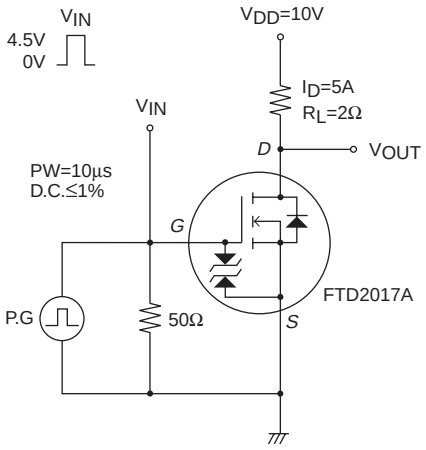
Continued on next page.

SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

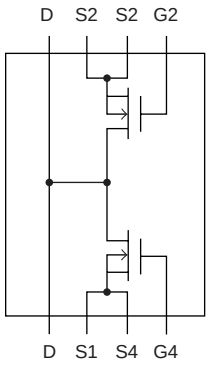
Continued from preceding page.

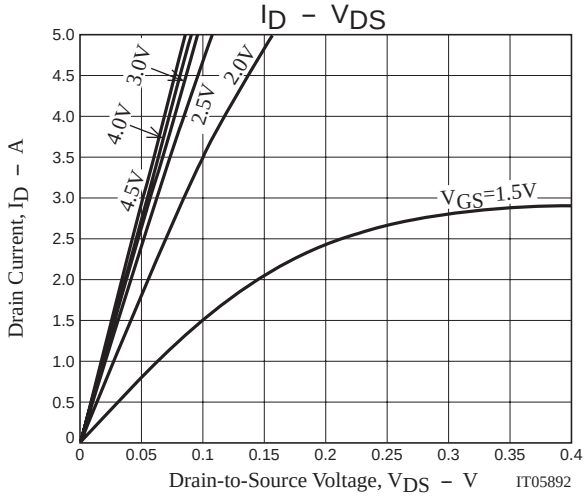
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=6A, V_{GS}=4.5V		17	23	mΩ
	$R_{DS}(on)2$	I_D=6A, V_{GS}=4V		18	24	mΩ
	$R_{DS}(on)3$	I_D=3A, V_{GS}=3.1V		19	30	mΩ
	$R_{DS}(on)4$	I_D=3A, V_{GS}=2.5V		20	33	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		1530		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		230		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		215		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		19		ns
Rise Time	t_r	See specified Test Circuit.		225		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		125		ns
Fall Time	t_f	See specified Test Circuit.		125		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4.5V, I_D=6A		21		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=4.5V, I_D=6A		3.4		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=4.5V, I_D=6A		4.8		nC
Diode Forward Voltage	V_{SD}	I_S=6A, V_{GS}=0		0.83	1.2	V

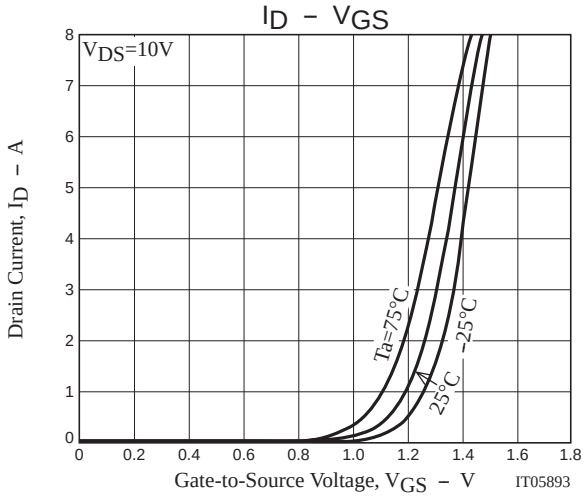
Switching Time Test Circuit

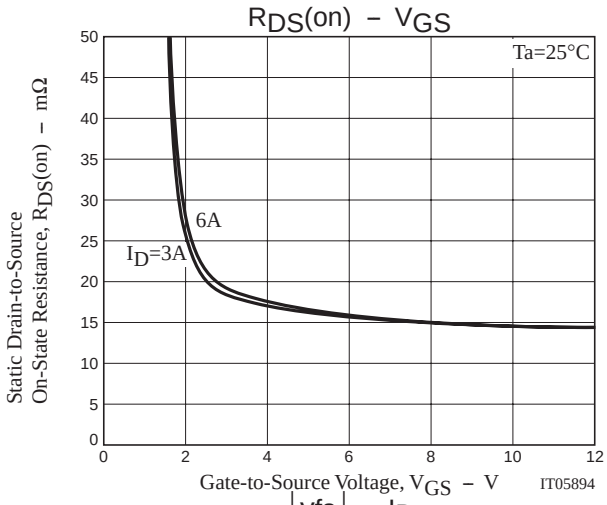


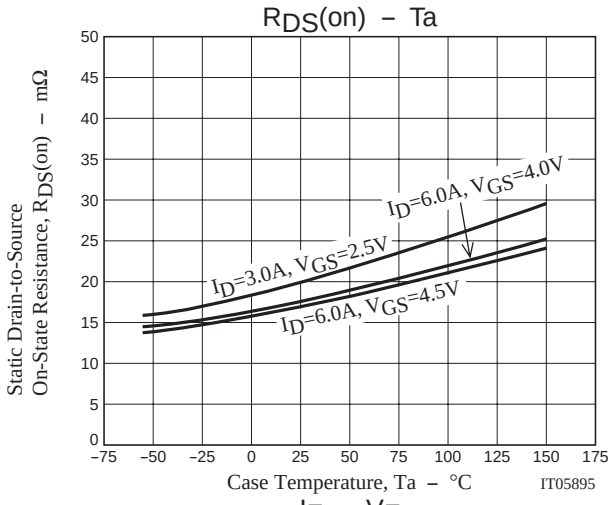
Electrical Connection (Top view)

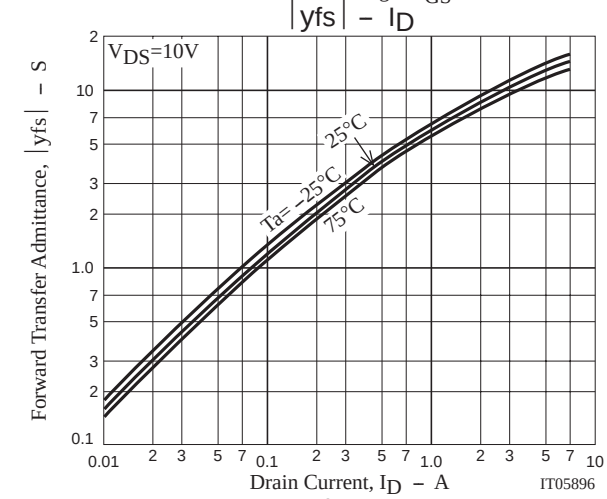


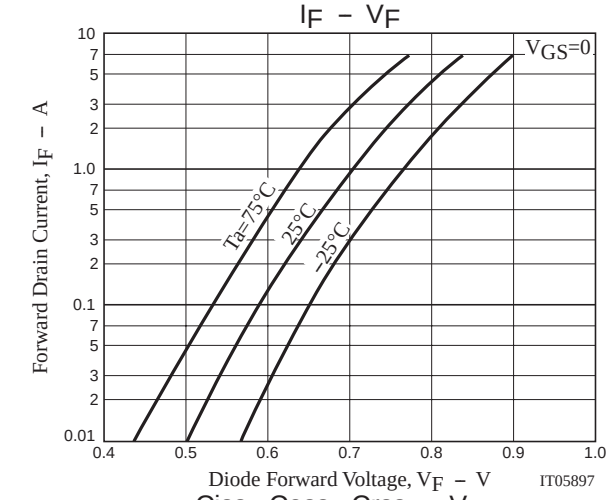


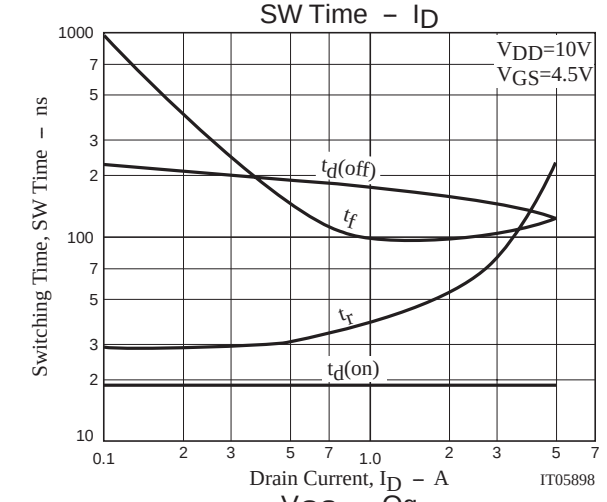


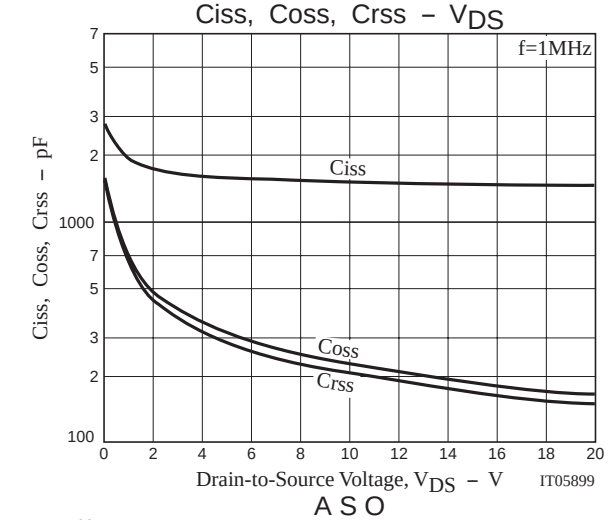

RDS(on) – VGS
Ta=25°C
6A
ID=3A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT05894

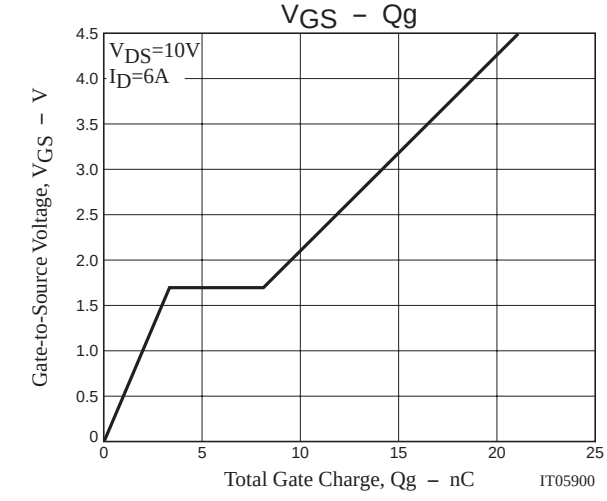

RDS(on) – Ta
ID=6.0A, VGS=4.0V
ID=3.0A, VGS=2.5V
ID=6.0A, VGS=4.5V
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Case Temperature, Ta – °C
IT05895

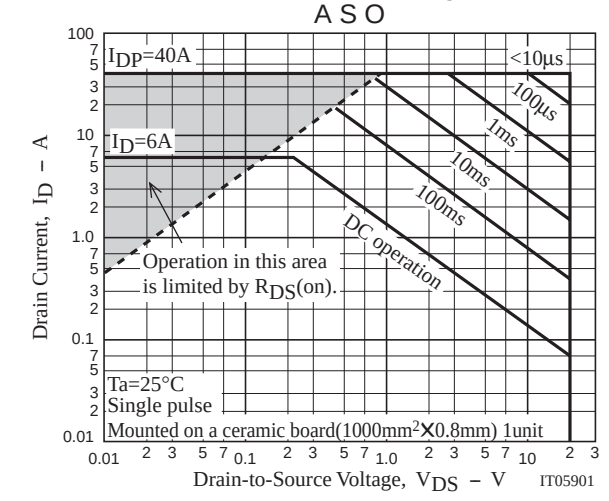

|yfs| – ID
VDS=10V
25°C
Ta=–25°C
75°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT05896


IF – VF
VGS=0
Ta=75°C
25°C
–25°C
Forward Drain Current, IF – A
Diode Forward Voltage, VF – V
IT05897


SW Time – ID
VDD=10V
VGS=4.5V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT05898


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT05899


VGS – Qg
VDS=10V
ID=6A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT05900


ASO
IDP=40A
ID=6A
<10µs
100µs
1ms
10ms
100ms
DC operation
Operation in this area is limited by RDS(on).
Ta=25°C
Single pulse
Mounted on a ceramic board(1000mm²×0.8mm) 1unit
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT05901