



FTD2007

Ultrahigh-Speed Switching Applications

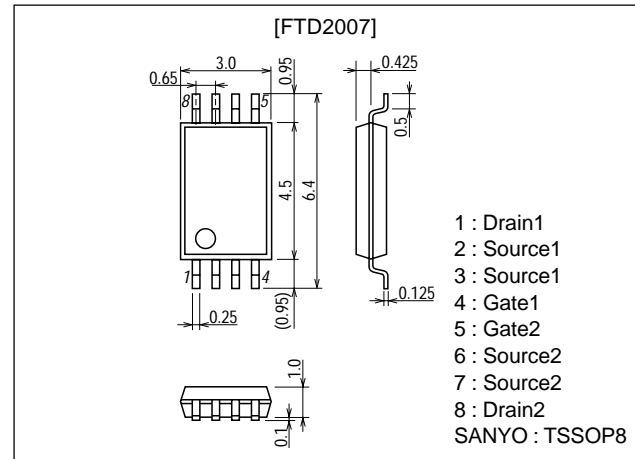
Features

- Low ON resistance.
- 4V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.

Package Dimensions

unit:mm

2155A



Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		100	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		0.8	A
Drain Current (pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	3.2	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm ² ×0.8mm) 1unit	0.6	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm ² ×0.8mm)	0.8	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100\text{V}$, $V_{GS}=0$			10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.8		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=400\text{mA}$	1.0	1.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=400\text{mA}$, $V_{GS}=10\text{V}$		0.6	0.8	Ω
	$R_{DS(on)2}$	$I_D=400\text{mA}$, $V_{GS}=4\text{V}$		0.65	0.95	Ω
	$R_{DS(on)3}$	$I_D=400\text{mA}$, $V_{GS}=3\text{V}$		0.7	1.0	Ω

Marking : D2007

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SANYO Electric Co.,Ltd. Semiconductor Company

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

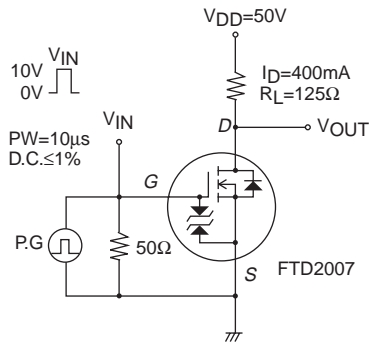
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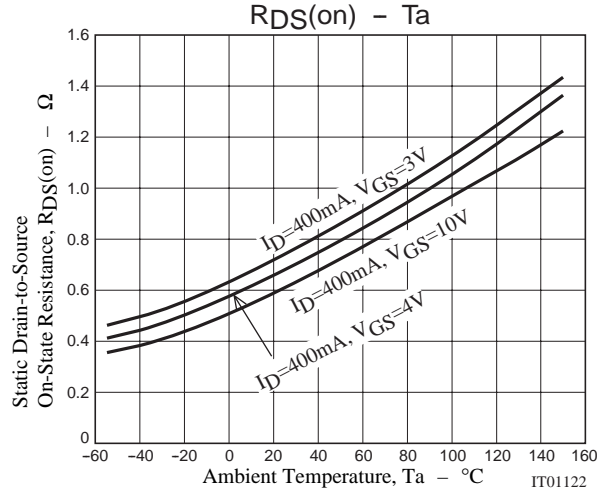
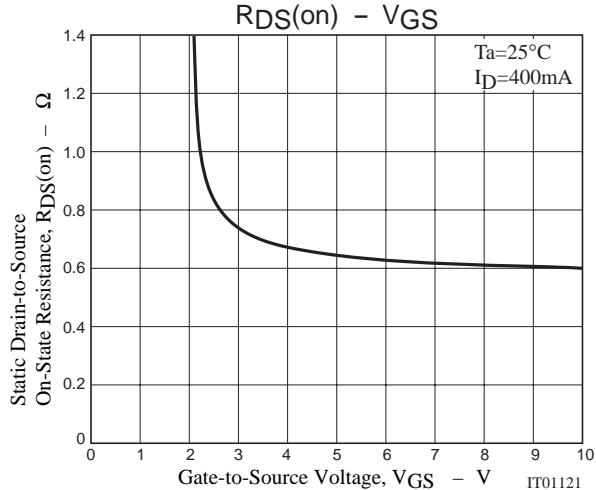
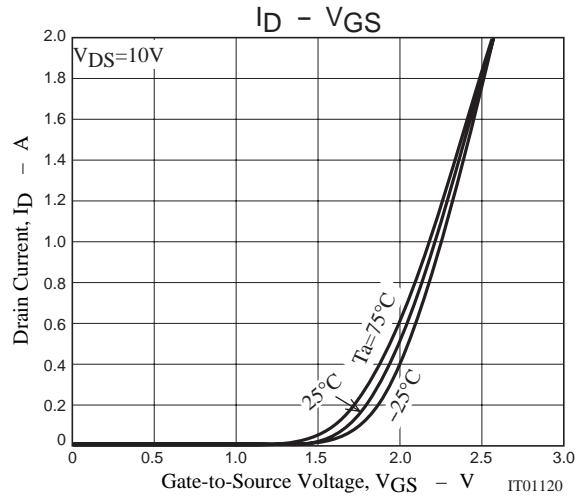
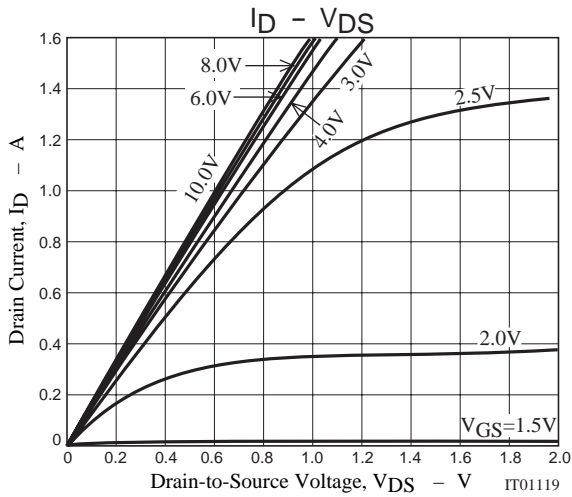
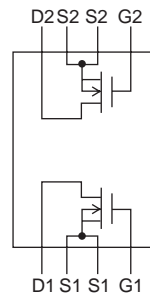
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=50V, f=1MHz$		150		pF
Output Capacitance	C_{oss}	$V_{DS}=50V, f=1MHz$		30		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=50V, f=1MHz$		5		pF
Turn-ON Delay Time	$t_{d(on)}$	See Specified Test Circuit		8		ns
Rise Time	t_r	See Specified Test Circuit		4		ns
Turn-OFF Delay Time	$t_{d(off)}$	See Specified Test Circuit		40		ns
Fall Time	t_f	See Specified Test Circuit		25		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=800mA$		5.2		nC
Gate-to-Source Charge	Q_{gs}			0.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.14		nC
Diode Forward Voltage	V_{SD}	$I_S=800mA, V_{GS}=0$		0.75	1.2	V

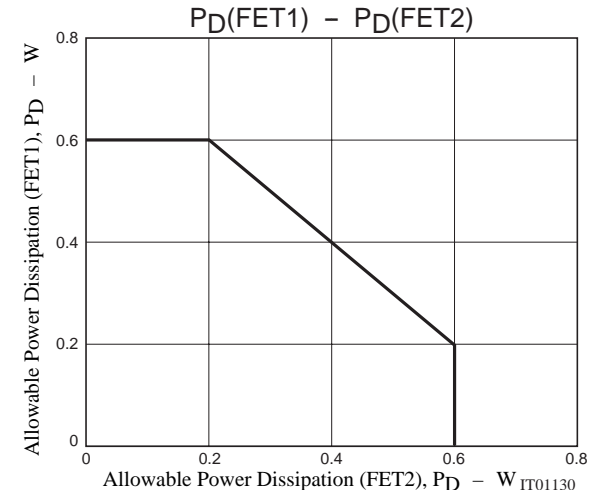
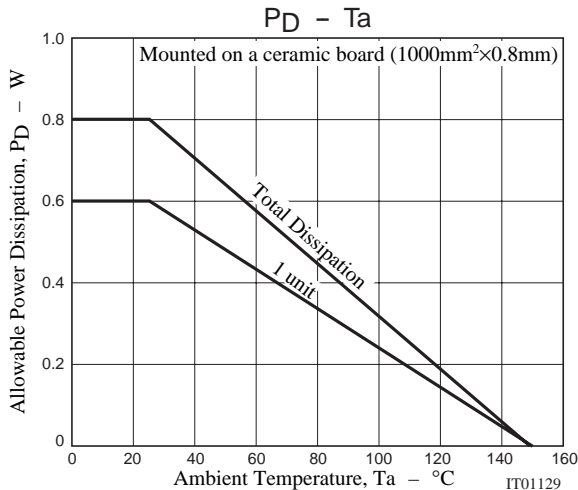
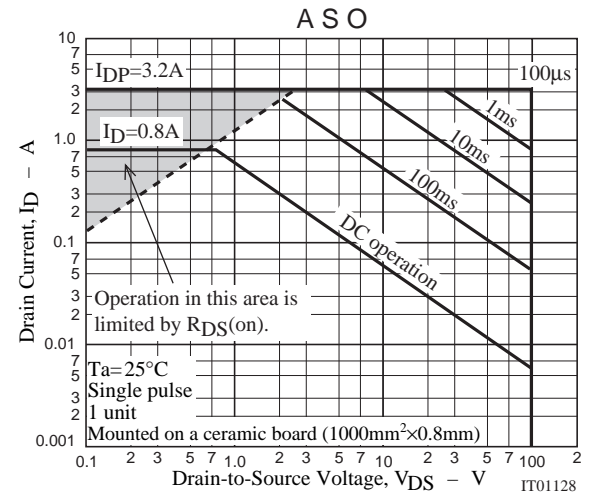
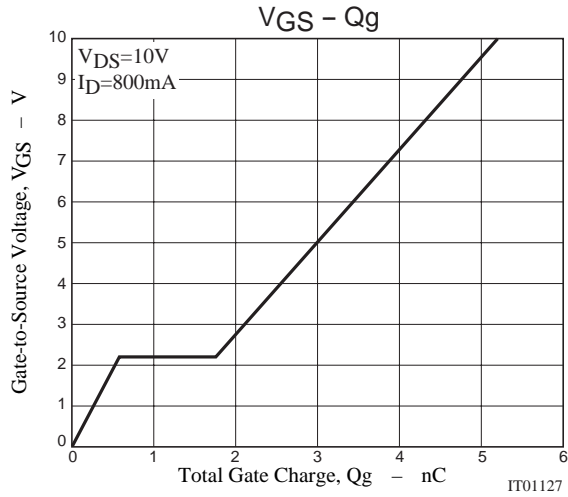
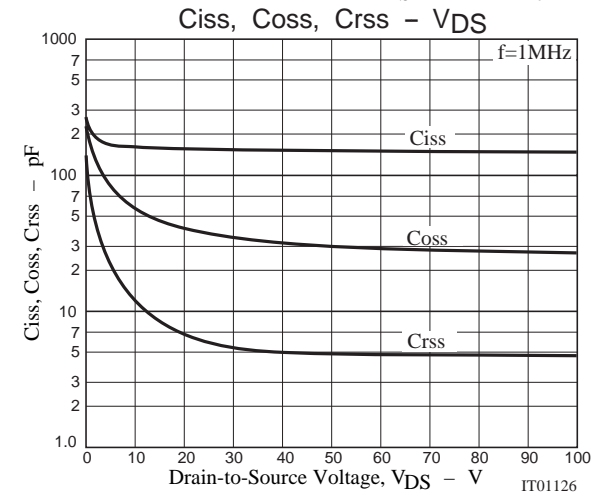
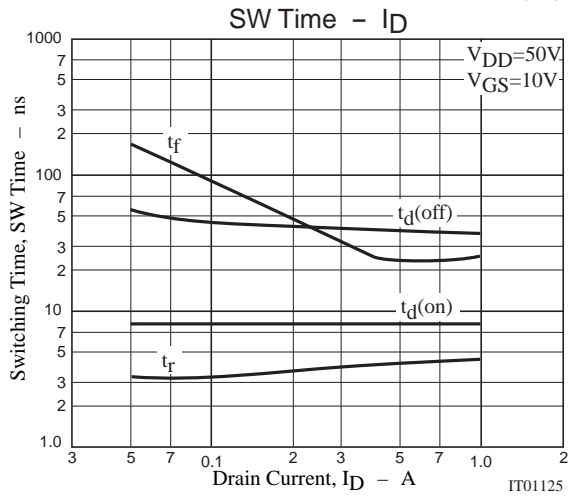
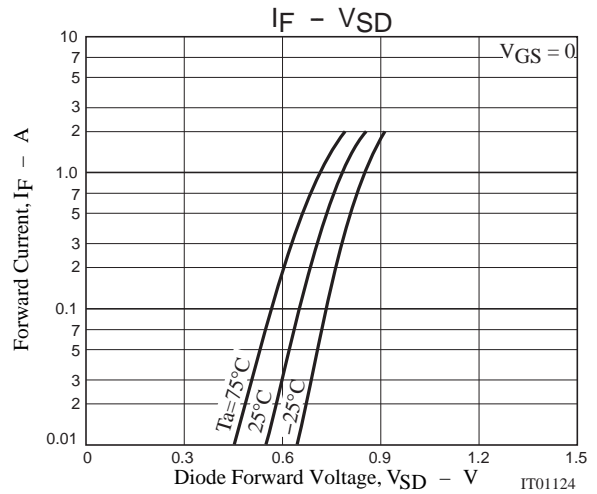
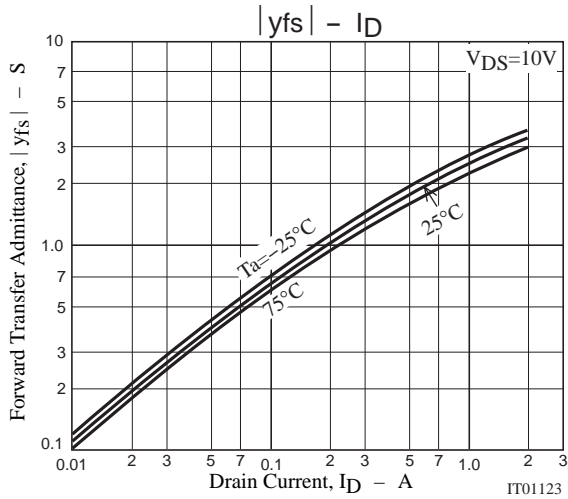
Switching Time Test Circuit



Electrical Connection



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