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ON Semiconductor DATA SHEET

SFT1305 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Motor drive application.
- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-45	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		-10	A
Drain Current (PW≤10μs)	I _{DP}	PW≤10μs, duty cycle≤1%	-40	A
Allowable Power Dissipation	P _D		1.0	W
		T _c =25°C	15	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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	-45			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-45V, 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	y _{fs}	V _{DS} =-10V, I _D =-5A	4.1	6.9		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-5A, V _{GS} =-10V		60	80	mΩ
	R _{DS(on)2}	I _D =-5A, V _{GS} =-4V		105	147	mΩ

Marking : T1305

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SFT1305

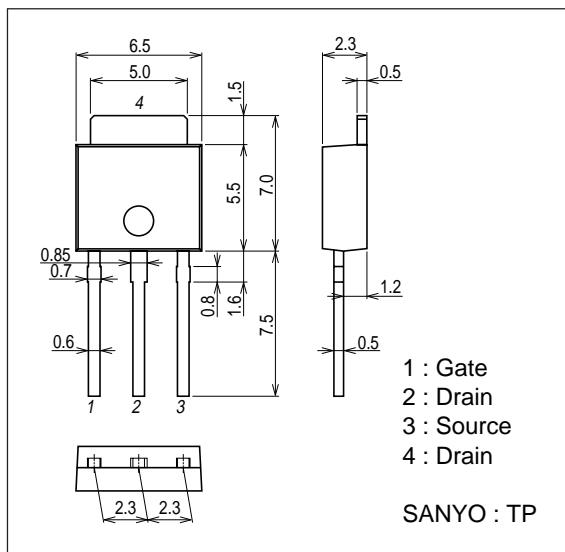
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-20V, f=1MHz$		1060		pF
Output Capacitance	Coss	$V_{DS}=-20V, f=1MHz$		120		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-20V, f=1MHz$		90		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		50		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		80		ns
Fall Time	t_f	See specified Test Circuit.		60		ns
Total Gate Charge	Qg	$V_{DS}=-24V, V_{GS}=-10V, I_D=-10A$		20		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-24V, V_{GS}=-10V, I_D=-10A$		4		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-24V, V_{GS}=-10V, I_D=-10A$		4		nC
Diode Forward Voltage	V_{SD}	$I_S=-10A, V_{GS}=0V$	-1.0		-1.2	V

Package Dimensions

unit : mm (typ)

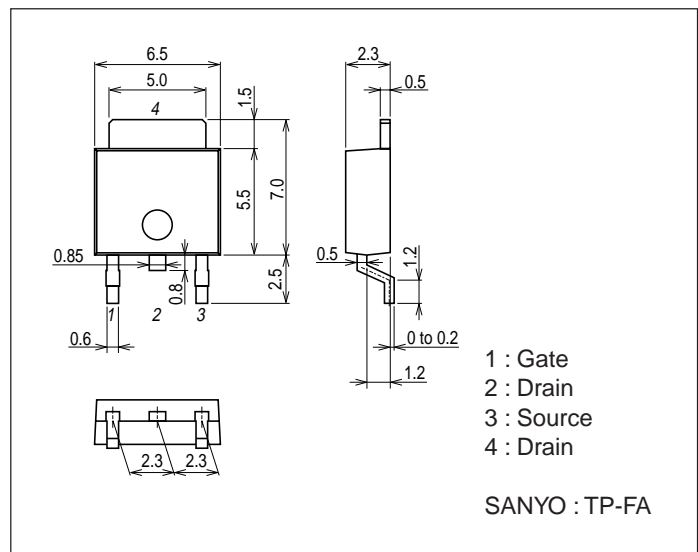
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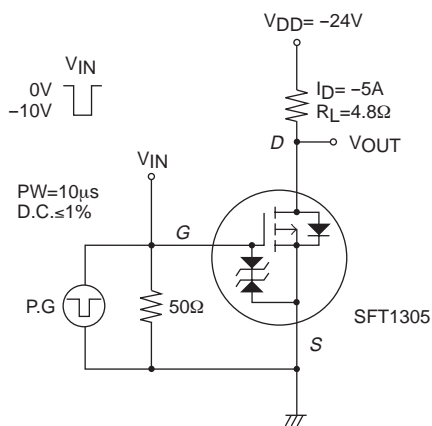
Package Dimensions

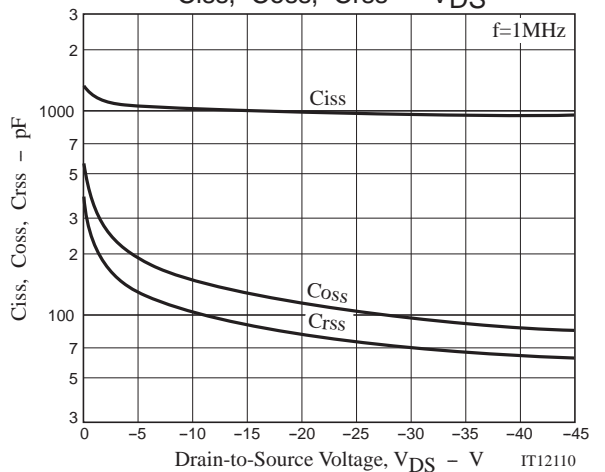
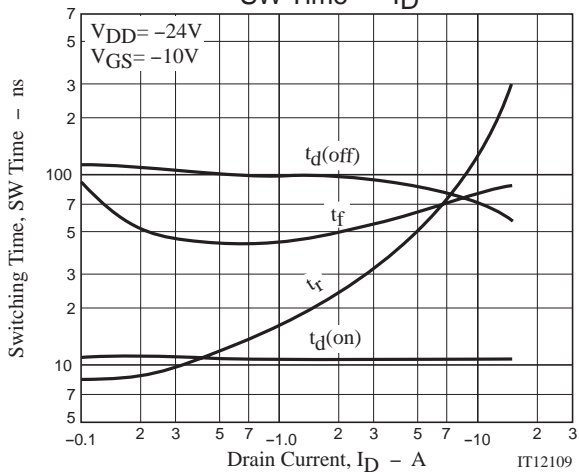
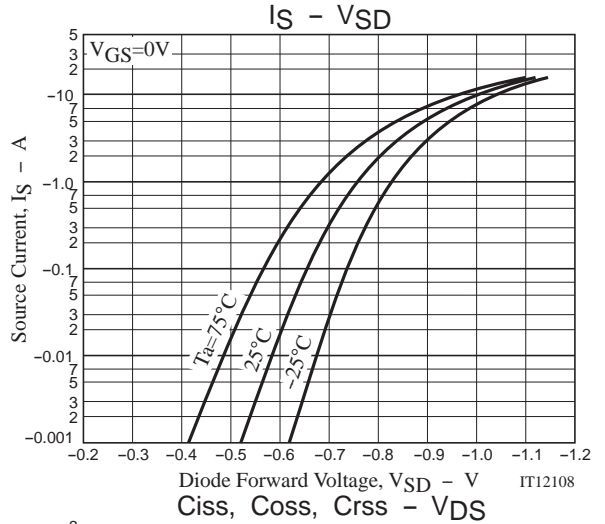
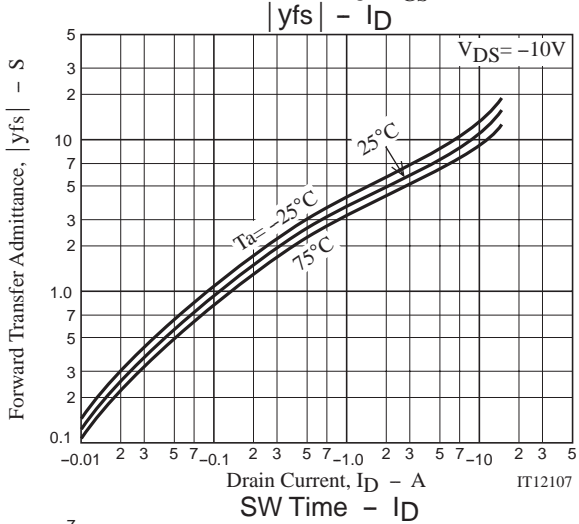
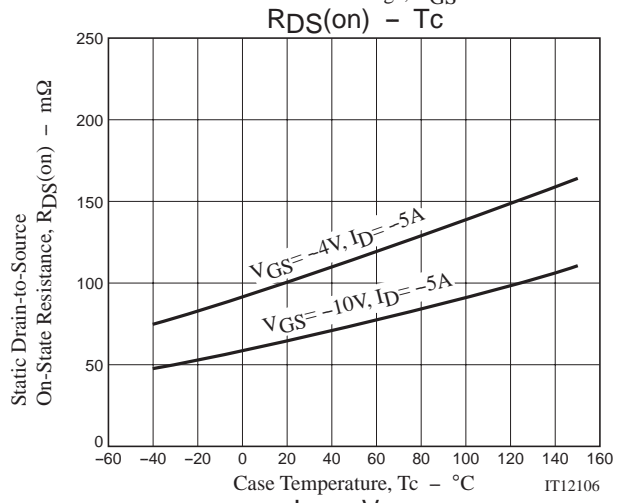
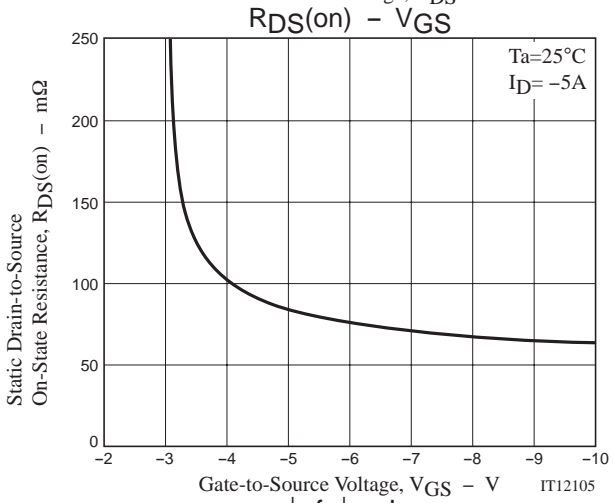
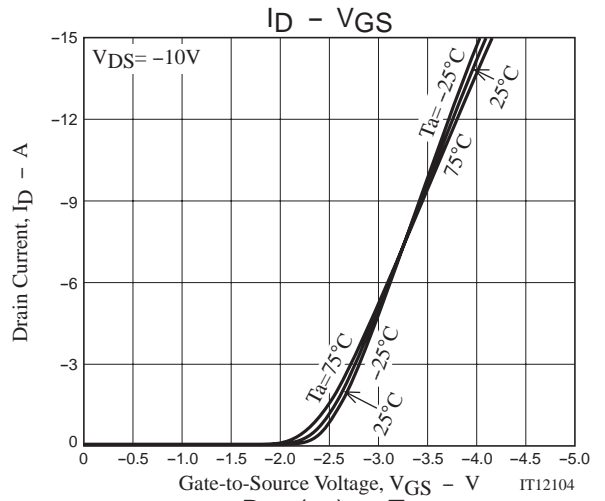
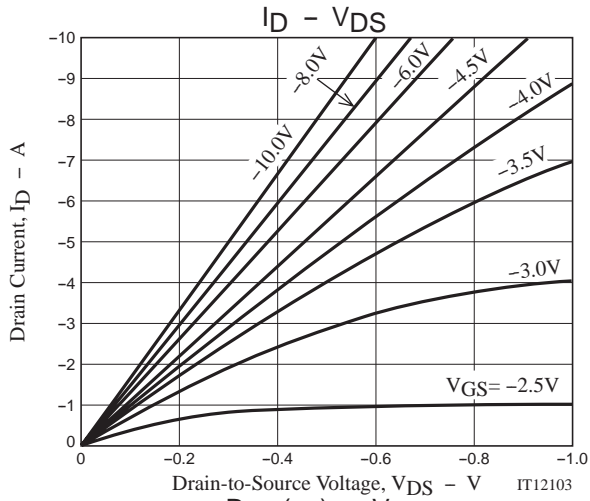
unit : mm(typ)

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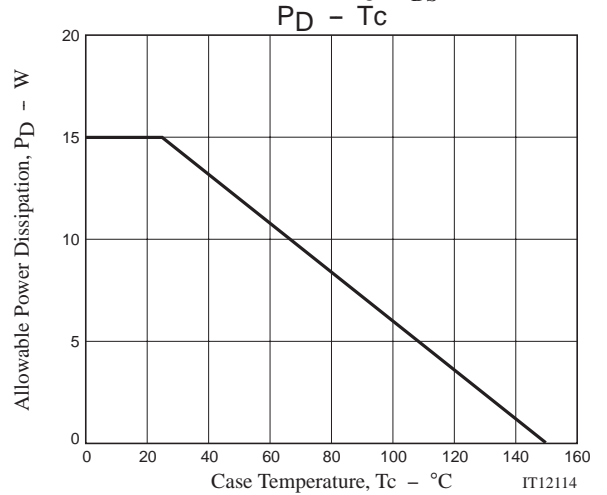
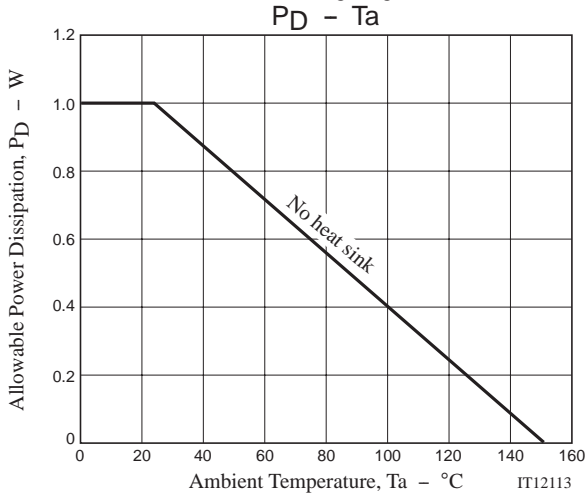
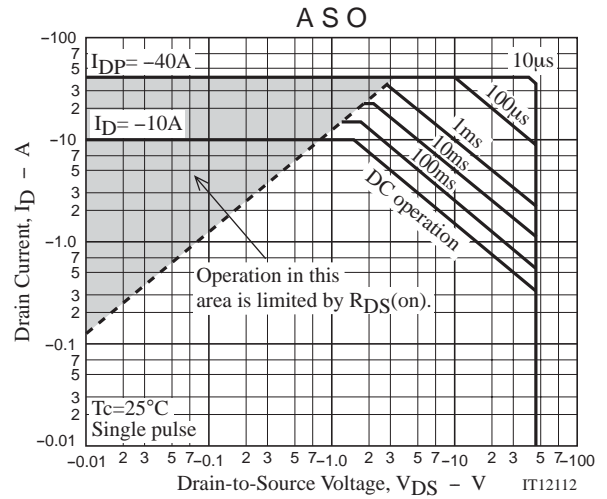
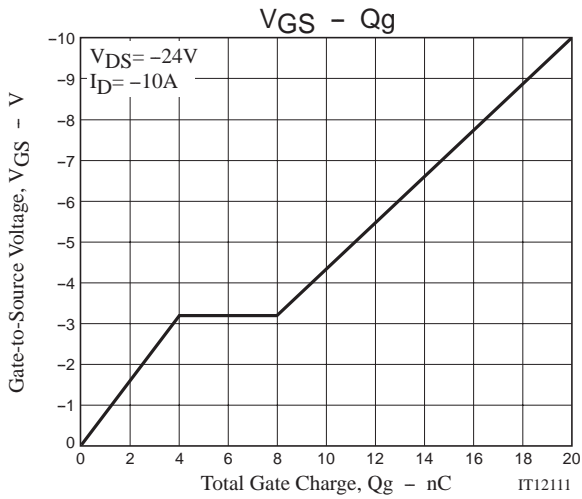


Switching Time Test Circuit





SFT1305



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