



ON Semiconductor®

# 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 <sub>DSS</sub>		-45	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-10	A
Drain Current (PW≤10μs)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-40	A
Allowable Power Dissipation	P <sub>D</sub>		1.0	W
		T <sub>c</sub> =25°C	15	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-45			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-45V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-5A	4.1	6.9		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-5A, V <sub>GS</sub> =-10V		60	80	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-5A, V <sub>GS</sub> =-4V		105	147	mΩ

Marking : T1305

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# SFT1305

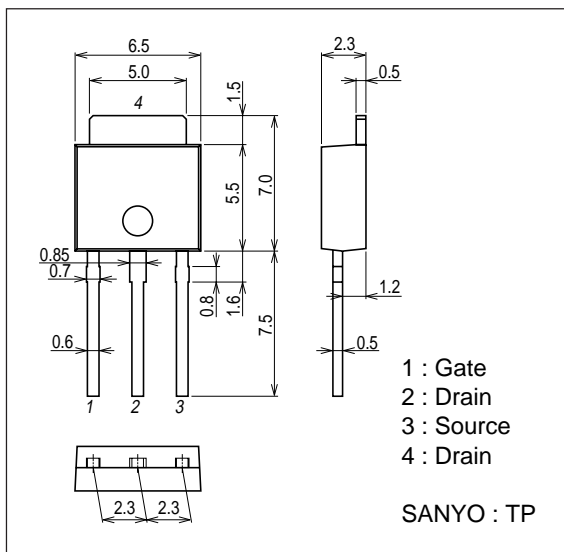
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-20V, f=1MHz$		1060		pF
Output Capacitance	Coss	$V_{DS}=-20V, f=1MHz$		120		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-20V, f=1MHz$		90		pF
Turn-ON Delay Time	$t_d(on)$	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)

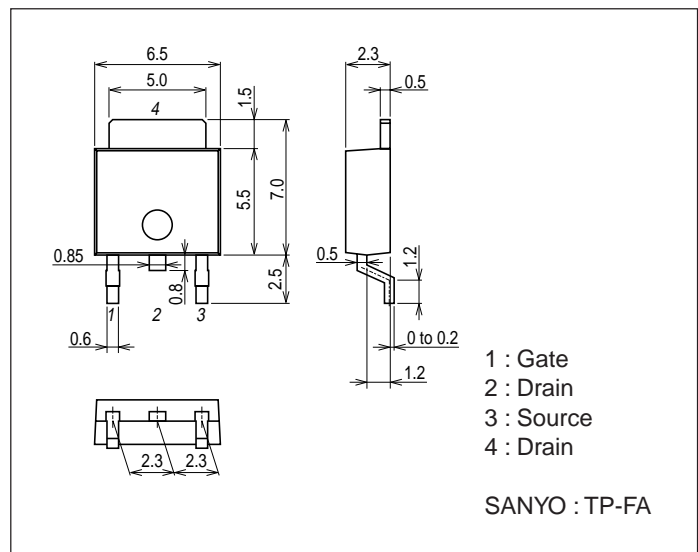
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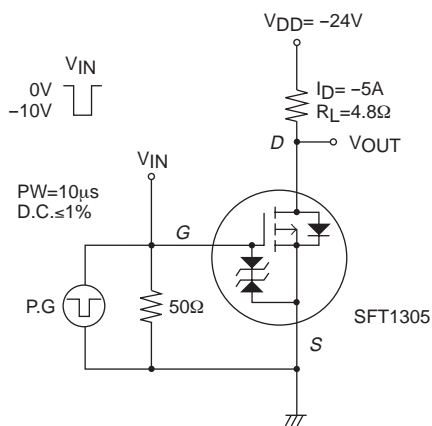
## Package Dimensions

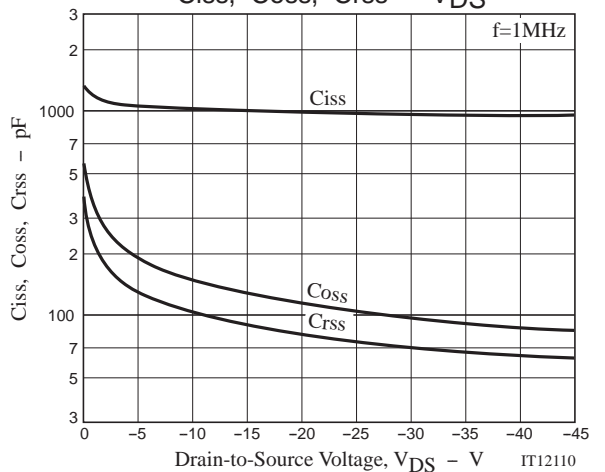
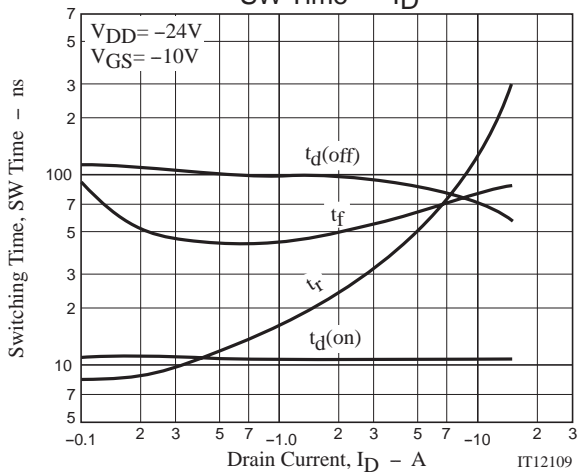
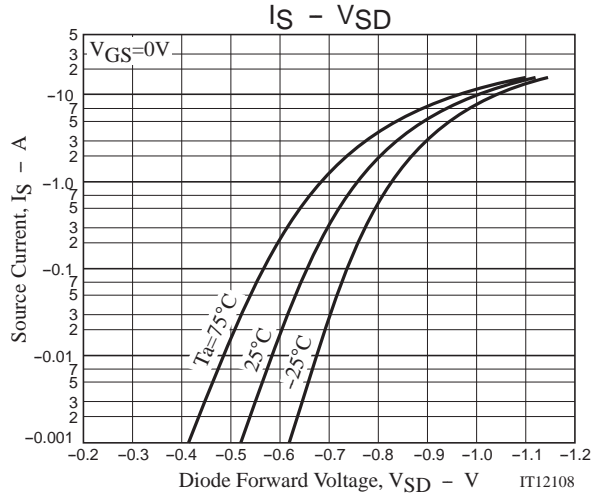
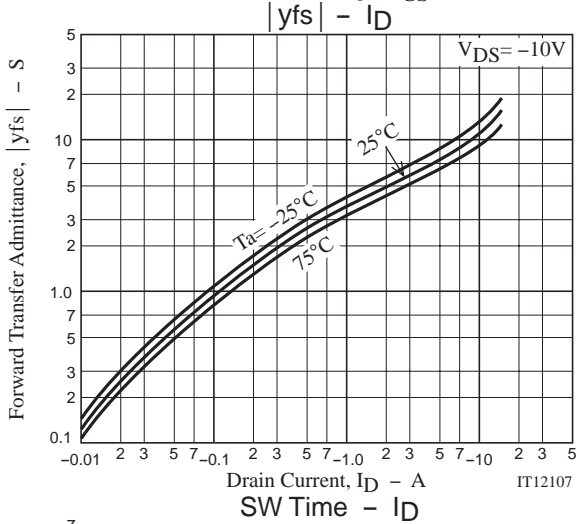
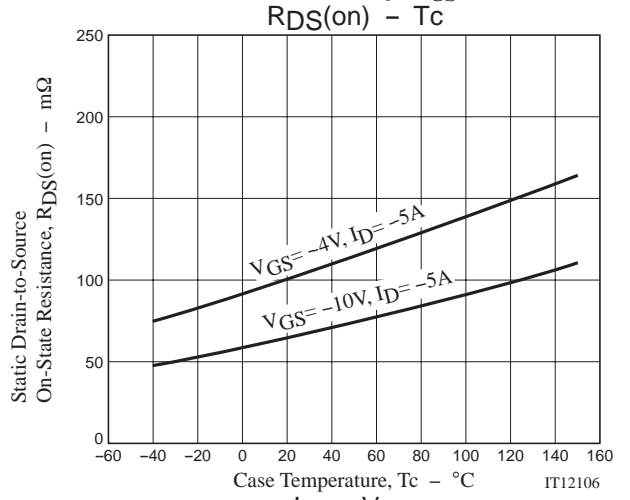
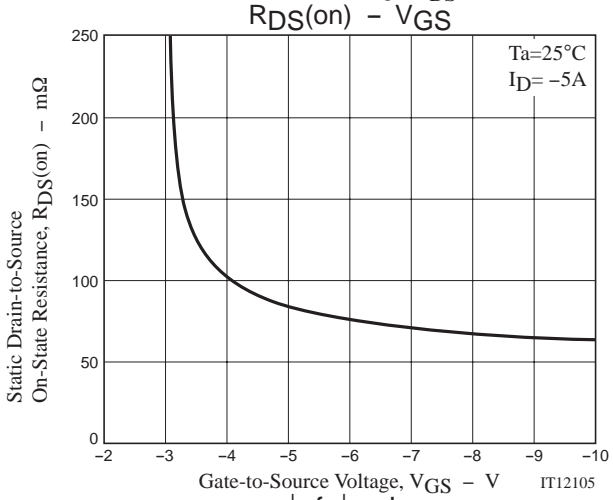
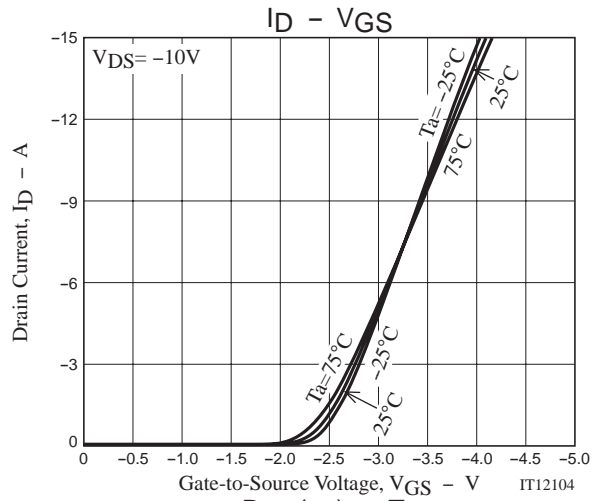
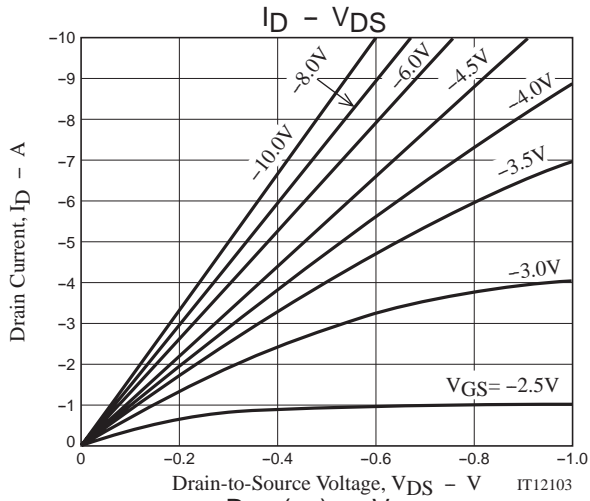
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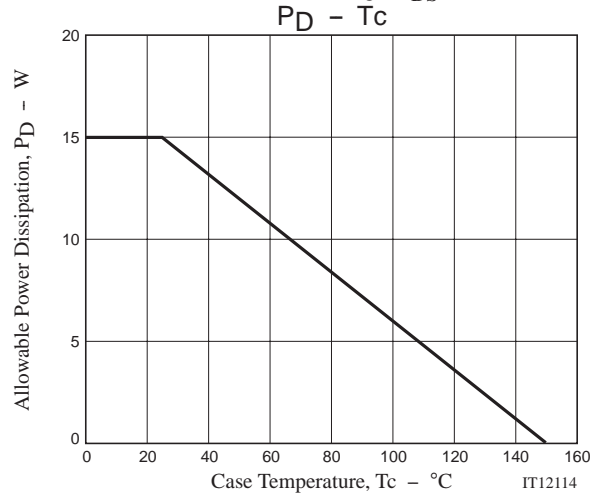
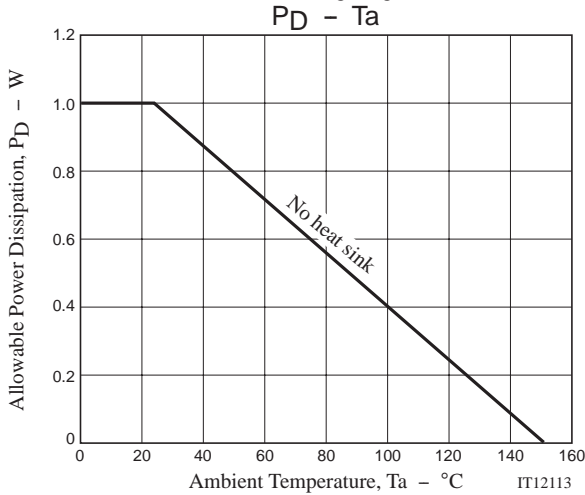
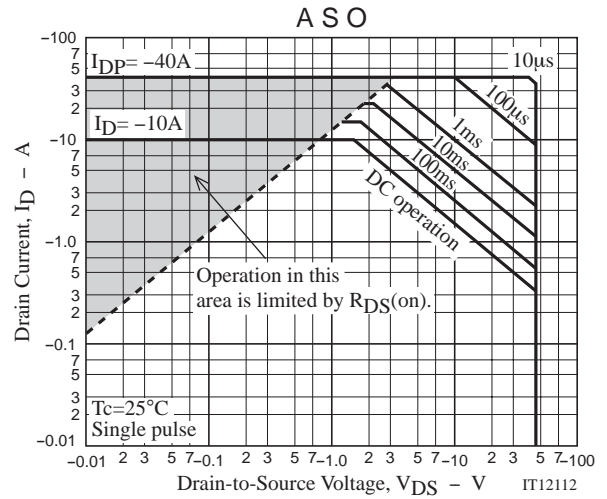
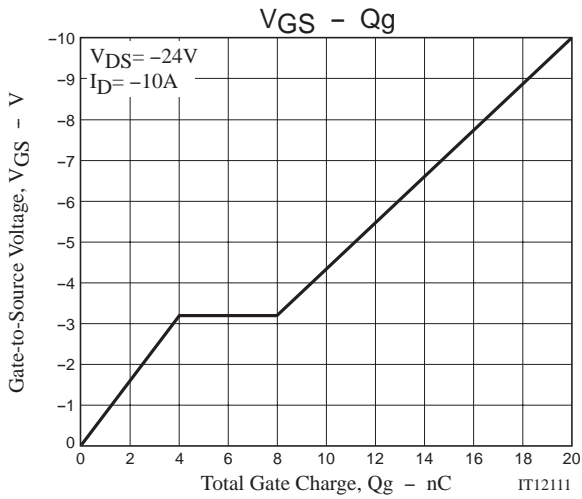
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## Switching Time Test Circuit







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