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SANYO Semiconductors DATA SHEET

SCH1301 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-12	V
Gate-to-Source Voltage	V _{GSS}		±8	V
Drain Current (DC)	I _D		-2.4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-9.6	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm ² ×0.8mm)	0.8	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	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-4V, V _{GS} =0V			-1	μA
		V _{DS} =-12V, V _{GS} =0V			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±6.4V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-6V, I _D =-1mA	-0.3		-1.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-6V, I _D =-1.3A	2.52	4.2		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-1.3A, V _{GS} =-4.5V		90	120	mΩ
	R _{DS(on)2}	I _D =-0.7A, V _{GS} =-2.5V		125	175	mΩ
	R _{DS(on)3}	I _D =-0.3A, V _{GS} =-1.8V		165	280	mΩ
	R _{DS(on)4}	I _D =-0.1A, V _{GS} =-1.5V		330	580	mΩ
Input Capacitance	C _{iss}	V _{DS} =-6V, f=1MHz		450		pF
Output Capacitance	C _{oss}	V _{DS} =-6V, f=1MHz		100		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-6V, f=1MHz		85		pF

Marking : JA

Continued on next page.

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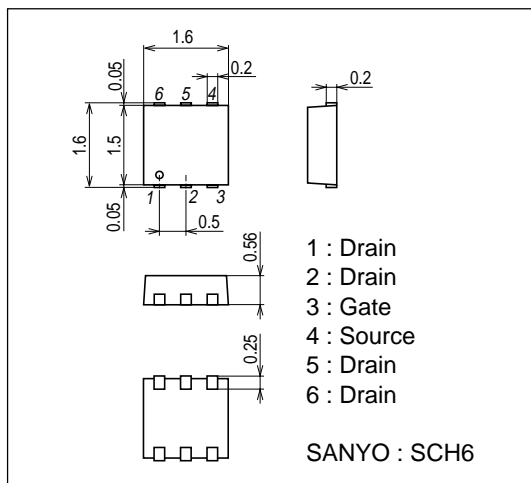
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		15		ns
Rise Time	t_r	See specified Test Circuit.		70		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		65		ns
Fall Time	t_f	See specified Test Circuit.		50		ns
Total Gate Charge	Qg	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.6A$		6.5		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.6A$		0.8		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.6A$		2.0		nC
Diode Forward Voltage	VSD	$I_S=-2.6A, V_{GS}=0V$		-0.87	-1.5	V

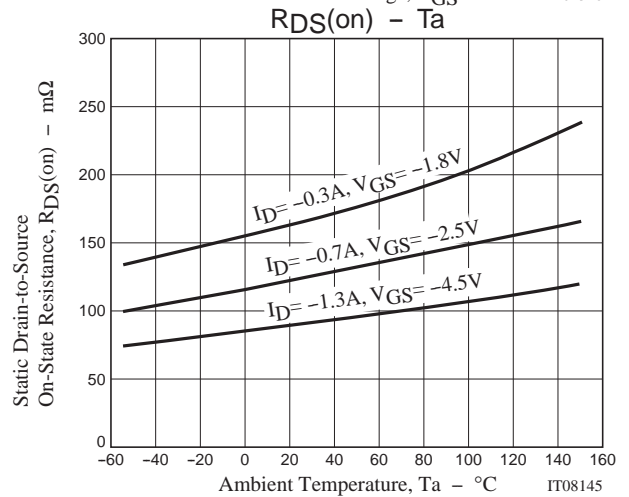
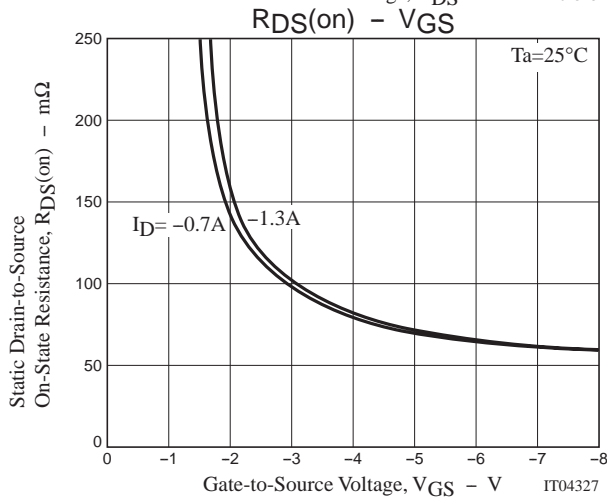
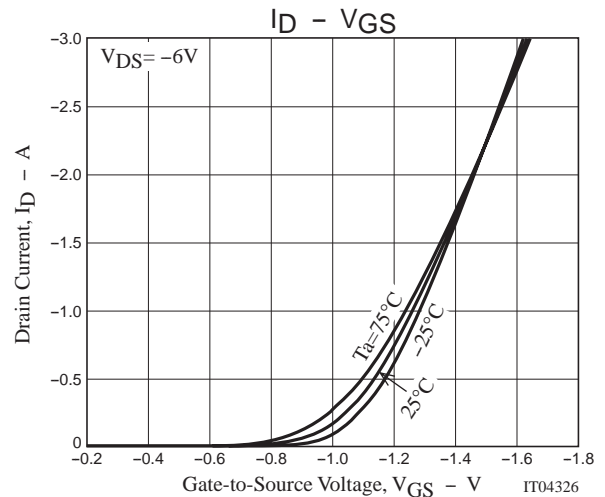
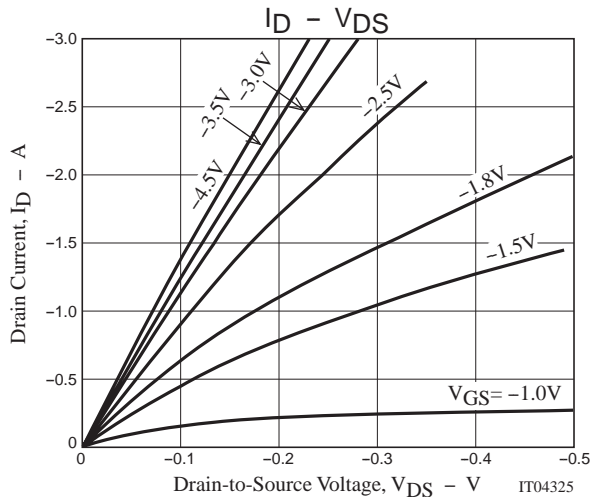
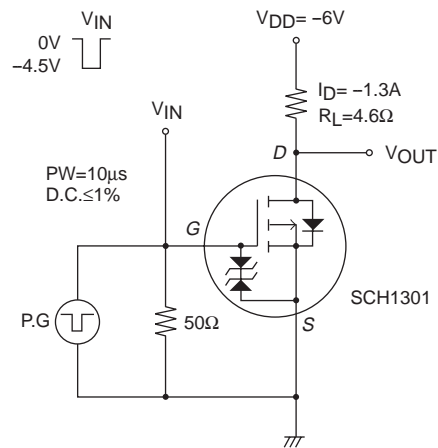
Package Dimensions

unit : mm

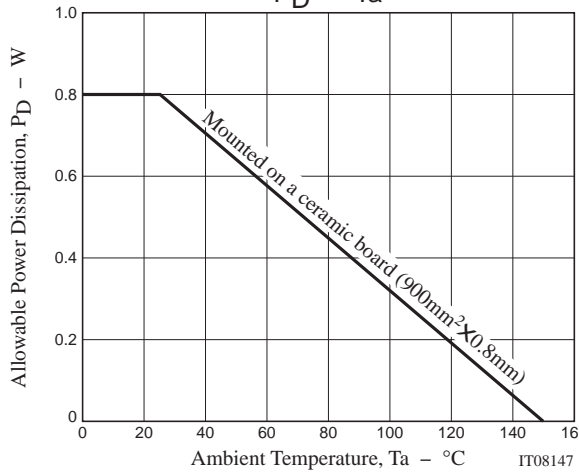
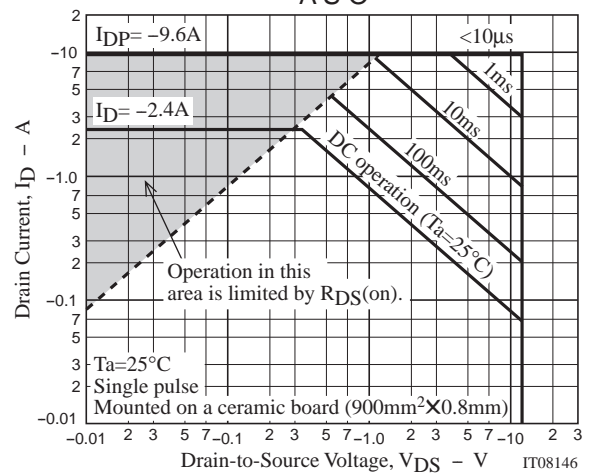
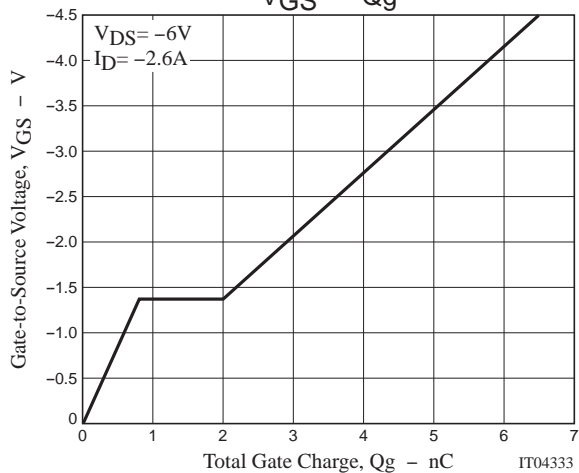
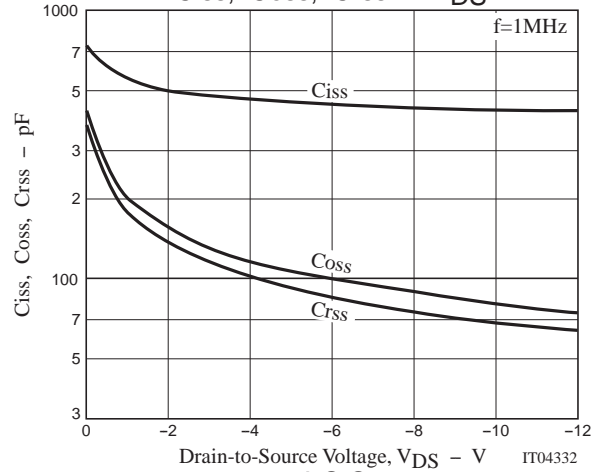
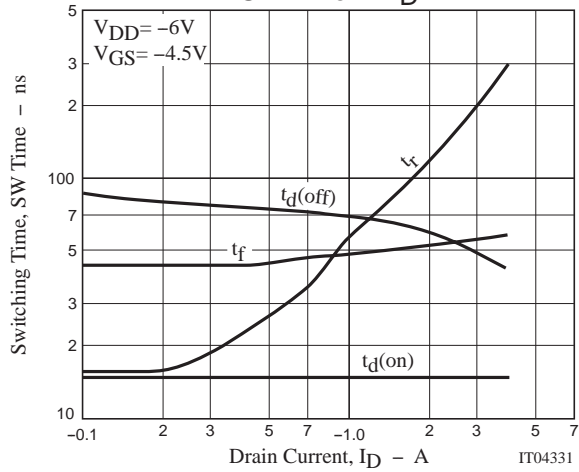
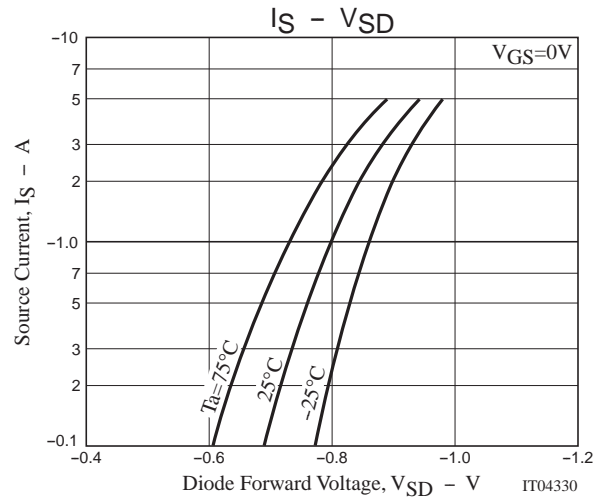
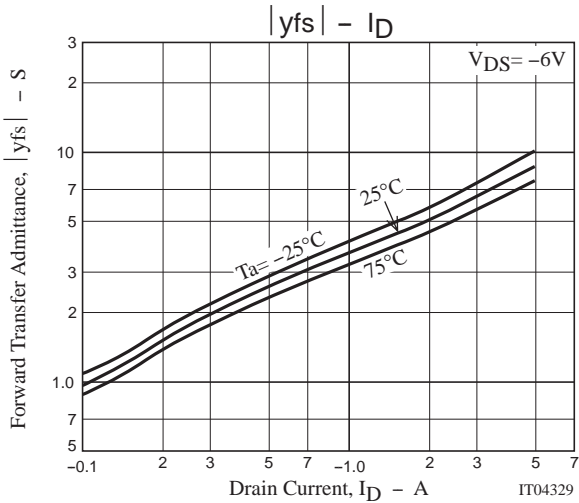
7028-002



Switching Time Test Circuit



SCH1301



SCH1301

Note on usage : Since the SCH1301 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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