



SANYO Semiconductors

## DATA SHEET

# 5HN01M — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

### Specifications

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		50	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		0.1	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	0.4	A
Allowable Power Dissipation	P <sub>D</sub>		0.15	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	50			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =50V, 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> =100μA	1		2.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =50mA	85	120		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =50mA, V <sub>GS</sub> =10V		5.8	7.5	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =30mA, V <sub>GS</sub> =4V		7.5	10.5	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, f=1MHz		6.2		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =10V, f=1MHz		4.4		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =10V, f=1MHz		1.5		pF

Marking : YC

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**SANYO Semiconductor Co., Ltd.**

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# 5HN01M

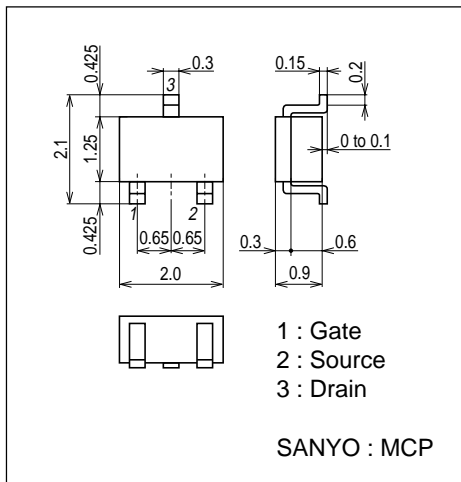
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	$t_r$	See specified Test Circuit.		11		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		105		ns
Fall Time	$t_f$	See specified Test Circuit.		75		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		1.40		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		0.21		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		0.34		nC
Diode Forward Voltage	$V_{SD}$	$I_S=100mA, V_{GS}=0V$		0.85	1.2	V

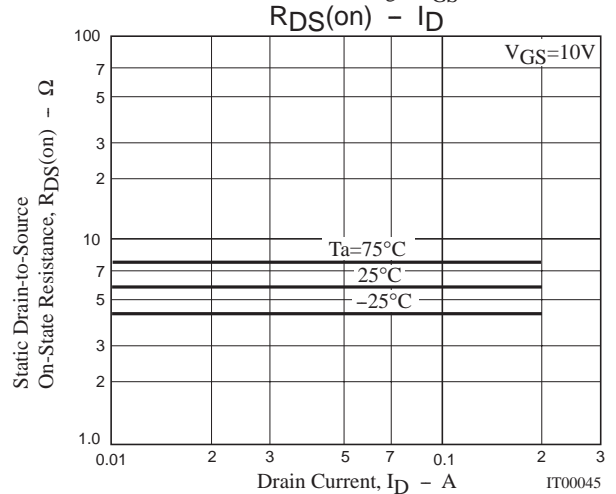
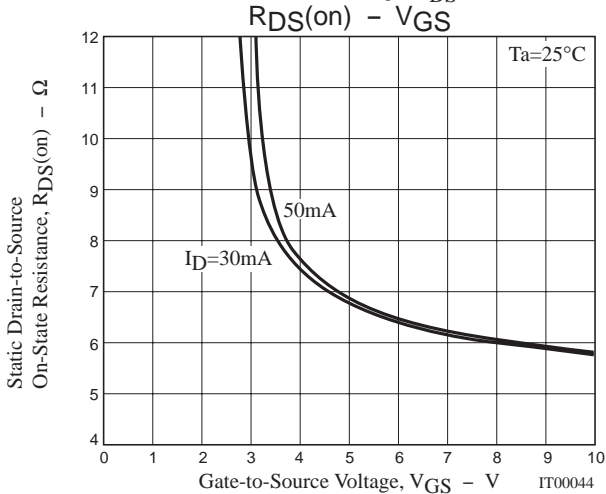
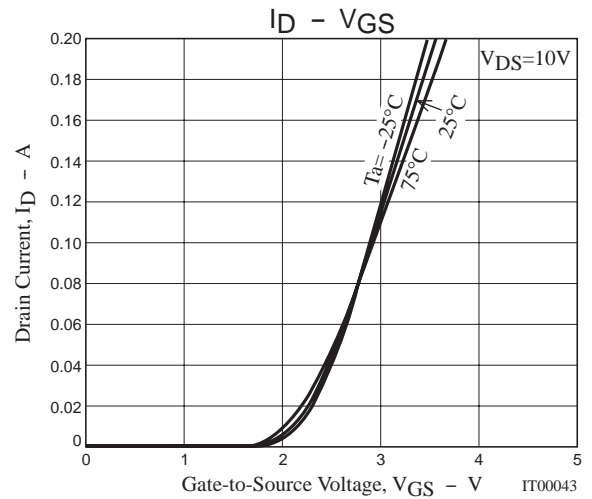
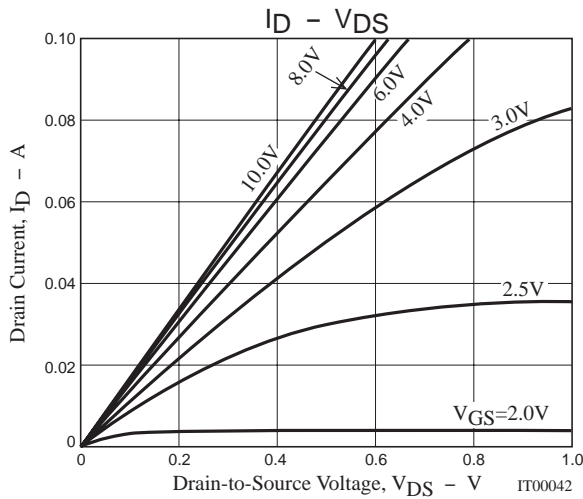
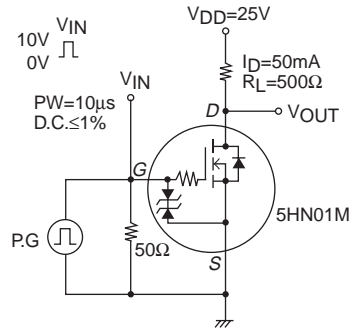
## Package Dimensions

unit : mm

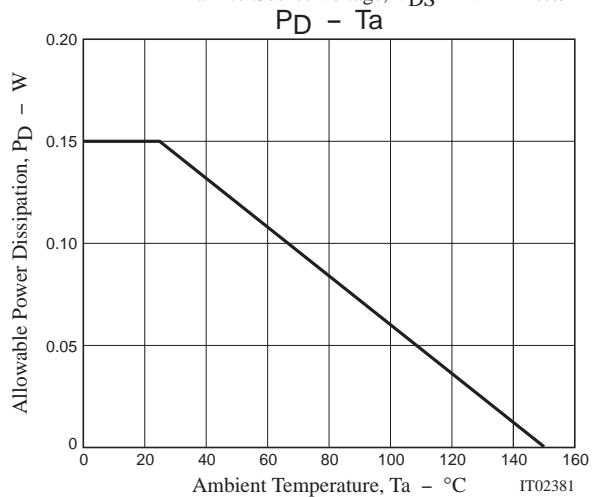
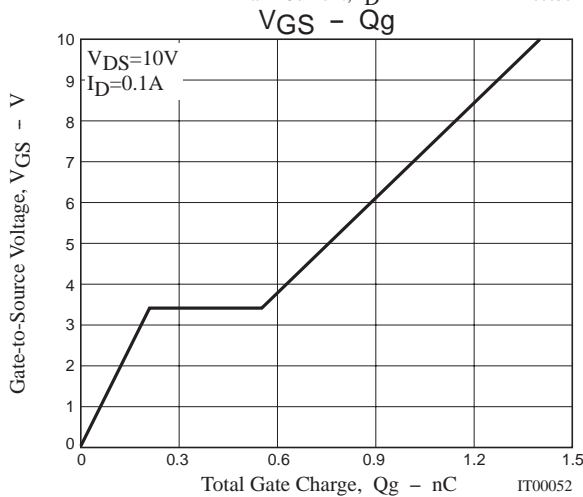
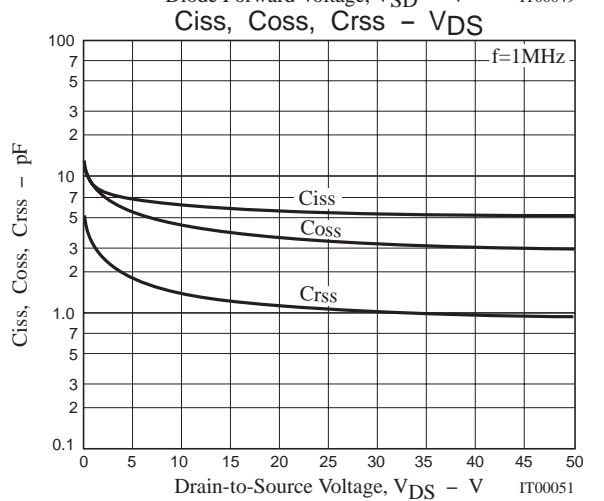
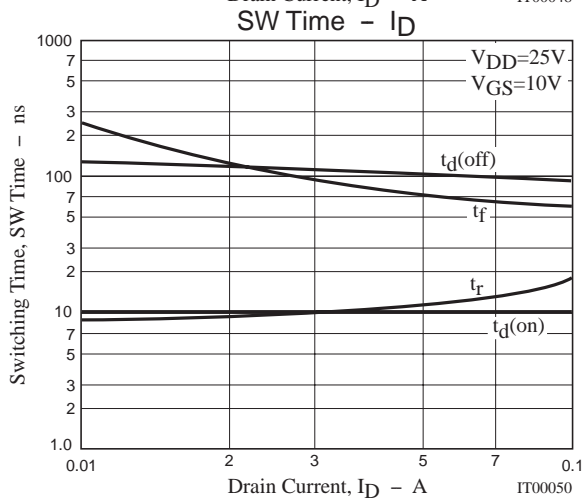
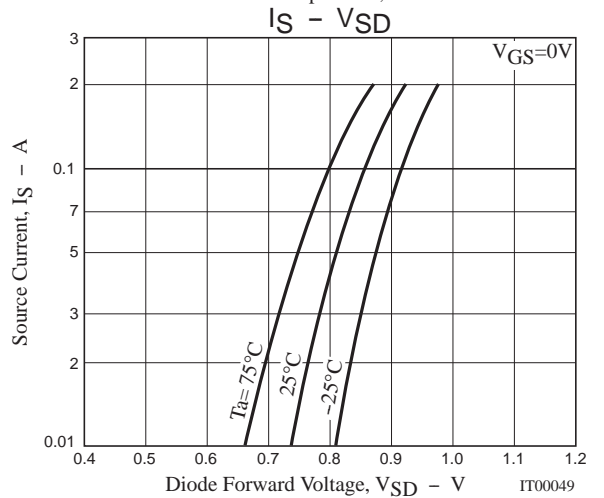
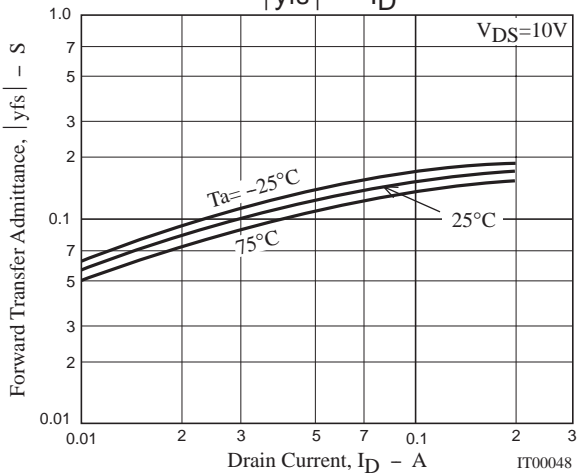
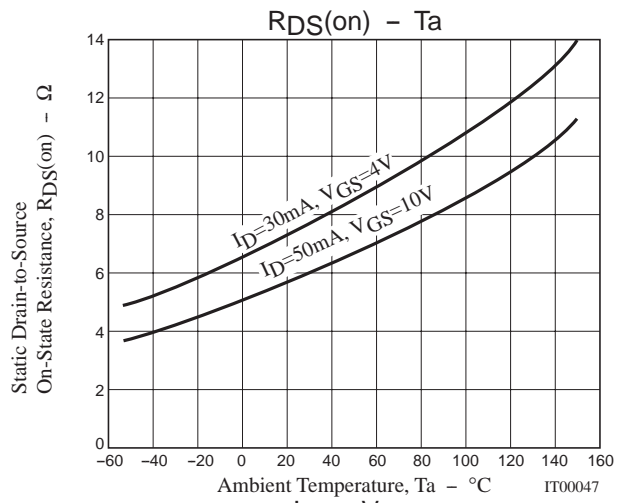
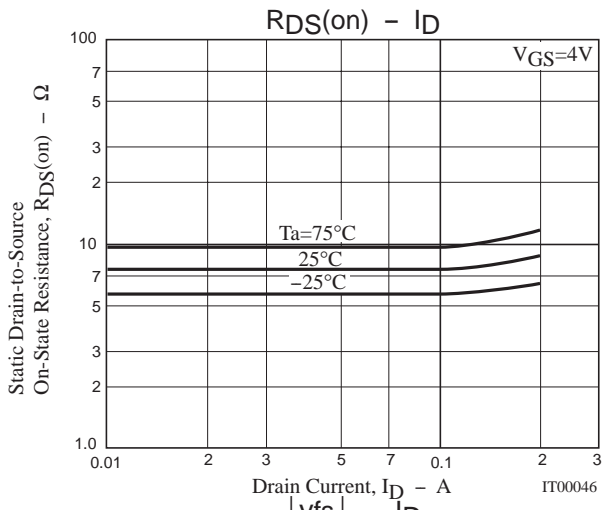
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## Switching Time Test Circuit



# 5HN01M



Note on usage : Since the 5HN01M is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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