



SANYO Semiconductors

## DATA SHEET

P-Channel Silicon MOSFET

# 5HP01C — General-Purpose Switching Device Applications

## Features

- Low ON-resistance.
- High-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>		-0.07	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-0.28	A
Allowable Power Dissipation	P <sub>D</sub>		0.25	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		-2.5	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-40mA	50	70		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-40mA, V <sub>GS</sub> =-10V		17	22	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-20mA, V <sub>GS</sub> =-4V		23	32	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		4.0		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		1.3		pF

Marking : XC

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# 5HP01C

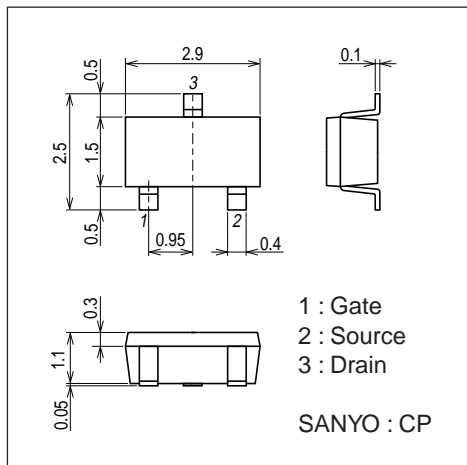
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		13		ns
Rise Time	$t_r$	See specified Test Circuit.		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		100		ns
Fall Time	$t_f$	See specified Test Circuit.		150		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10V$ , $V_{GS}=-10V$ , $I_D=-70mA$		1.32		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10V$ , $V_{GS}=-10V$ , $I_D=-70mA$		0.17		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10V$ , $V_{GS}=-10V$ , $I_D=-70mA$		0.34		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-70mA$ , $V_{GS}=0V$		-0.85	-1.2	V

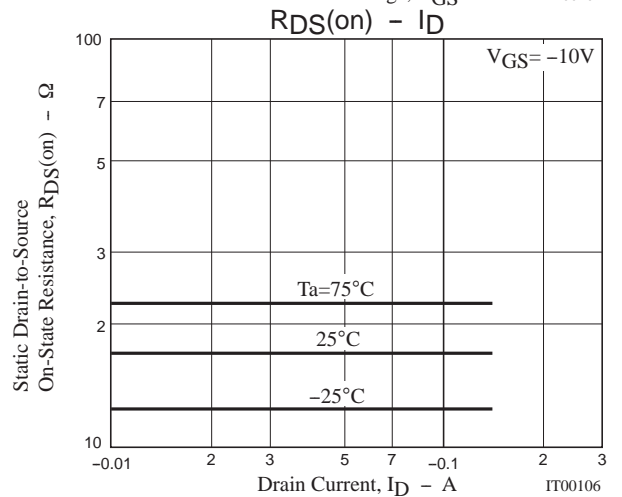
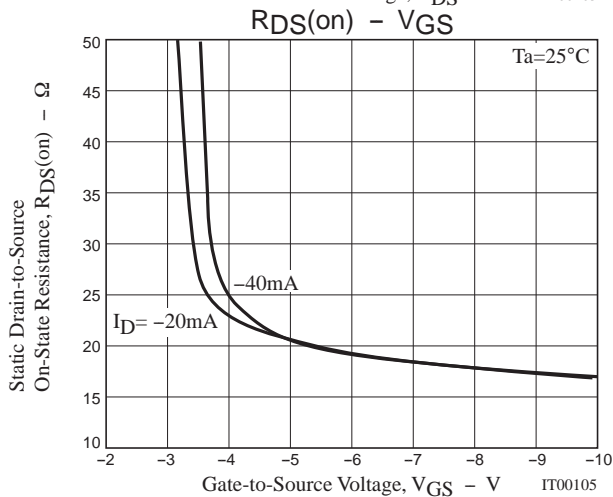
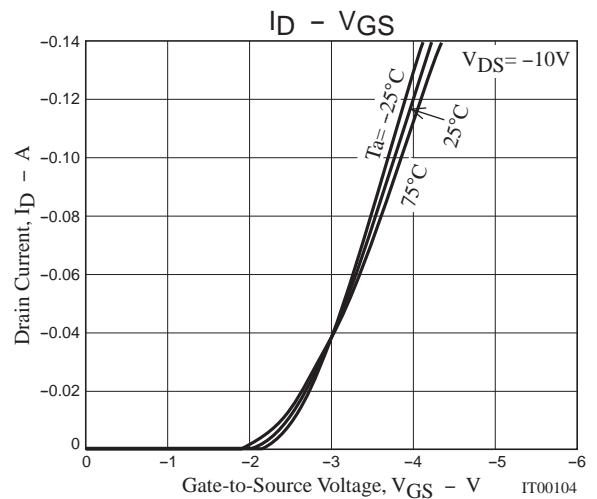
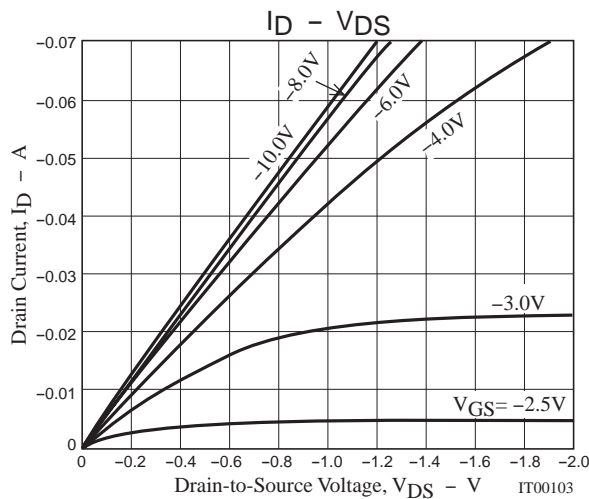
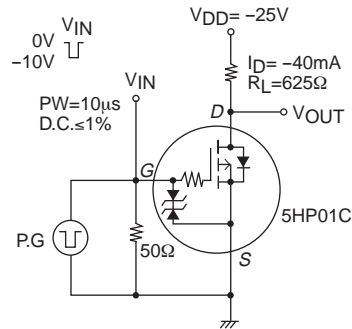
## Package Dimensions

unit : mm (typ)

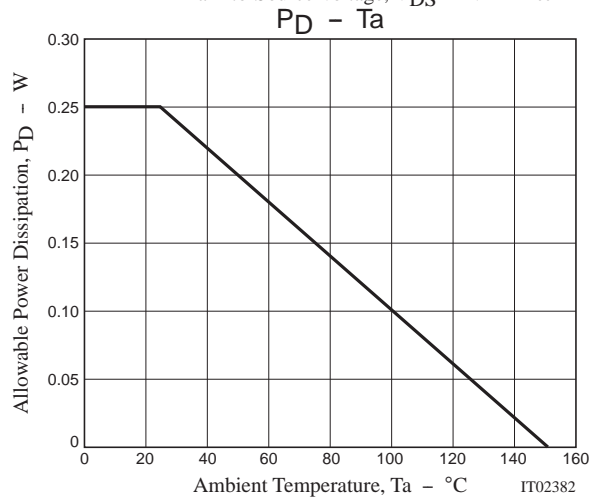
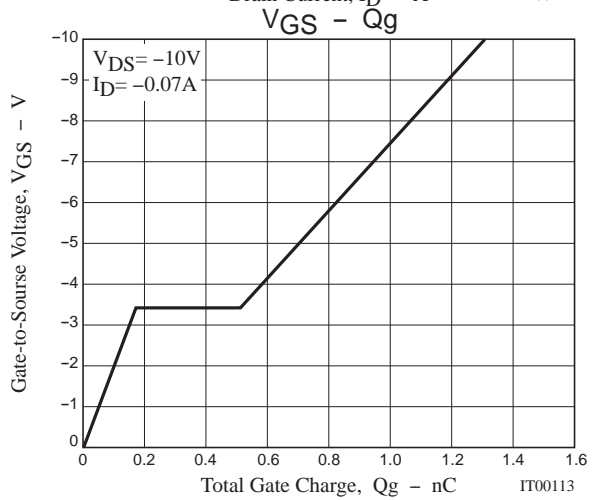
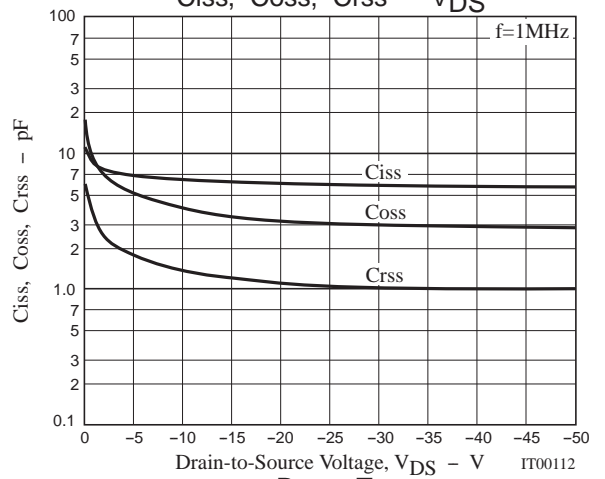
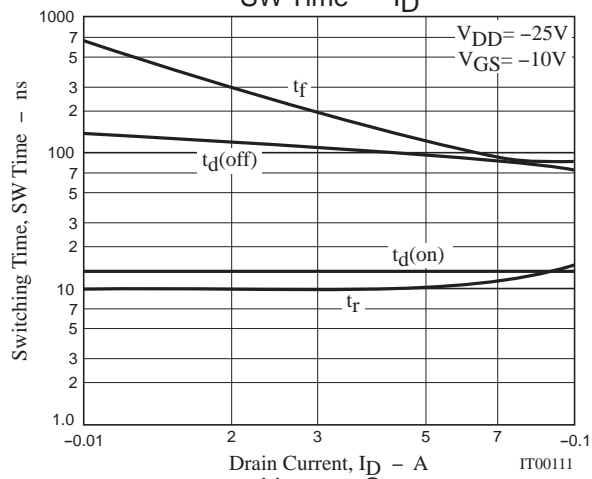
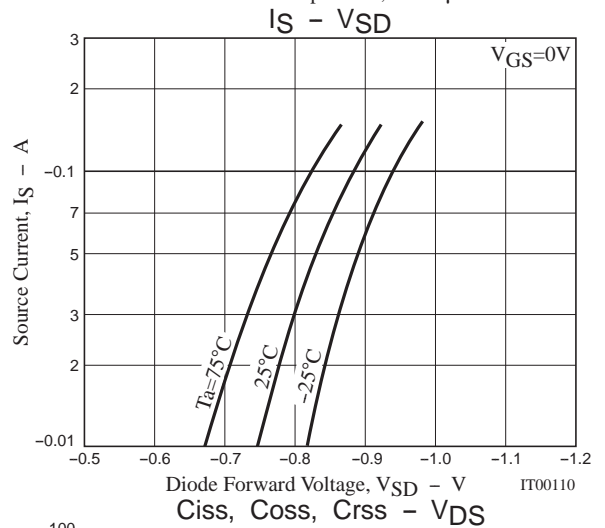
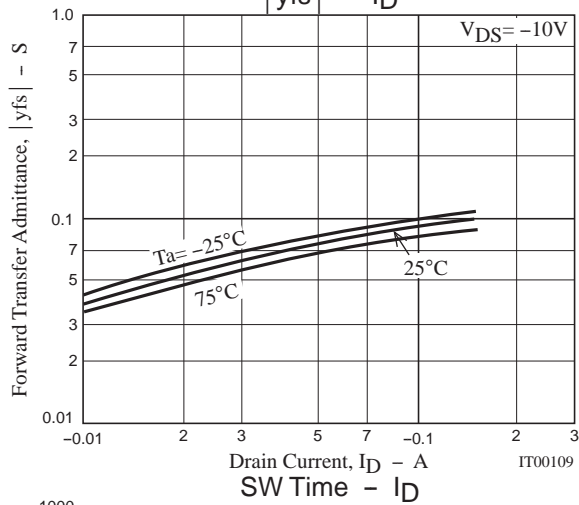
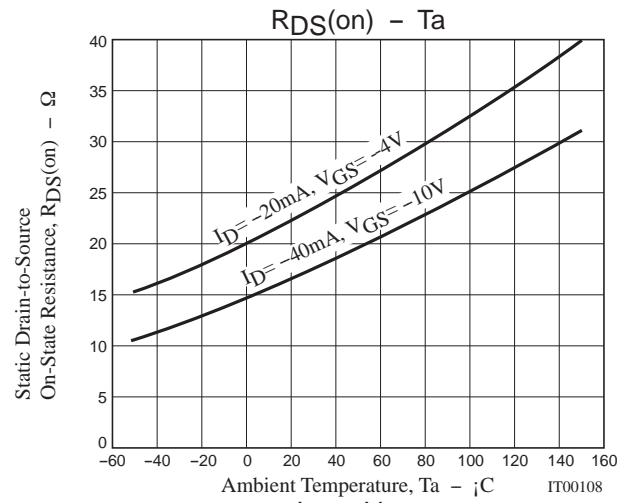
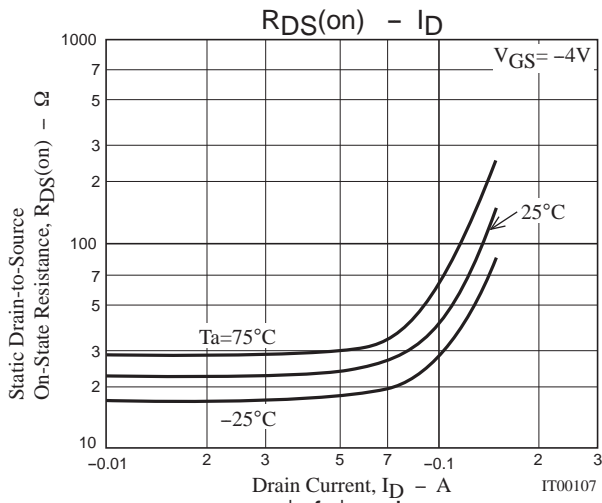
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## Switching Time Test Circuit



# 5HP01C



Note on usage : Since the 5HP01C is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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