

Ordering number : ENA0926



SANYO Semiconductors

DATA SHEET

1HP04CH — P-Channel Silicon MOSFET  
General-Purpose Switching Device Applications

Features

- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-100	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-80	mA
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycles≤1%	-320	mA
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm)	0.6	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	-100			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-100V, 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		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-40mA	85	145		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-40mA, V <sub>GS</sub> =-10V		13.5	18	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-20mA, V <sub>GS</sub> =-4V		15	21	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-20V, f=1MHz		14.5		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-20V, f=1MHz		2.5		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-20V, f=1MHz		1.0		pF

Marking : WB

Continued on next page.

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# 1HP04CH

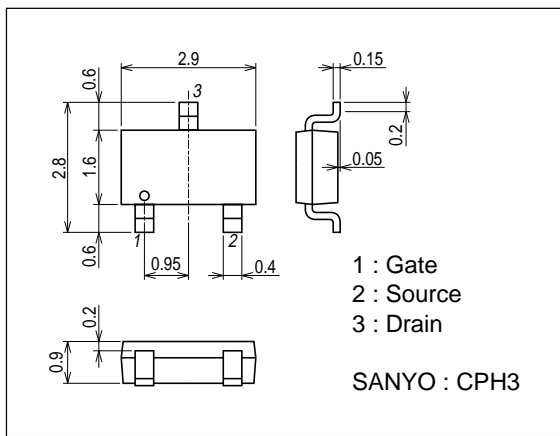
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_d(\text{on})$	See specified Test Circuit.		34		ns
Rise Time	$t_r$	See specified Test Circuit.		28		ns
Turn-OFF Delay Time	$t_d(\text{off})$	See specified Test Circuit.		490		ns
Fall Time	$t_f$	See specified Test Circuit.		160		ns
Total Gate Charge	Qg	$V_{DS}=-50\text{V}, V_{GS}=-10\text{V}, I_D=-80\text{mA}$		1.7		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-50\text{V}, V_{GS}=-10\text{V}, I_D=-80\text{mA}$		0.42		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-50\text{V}, V_{GS}=-10\text{V}, I_D=-80\text{mA}$		0.20		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-80\text{mA}, V_{GS}=0\text{V}$		-0.84	-1.2	V

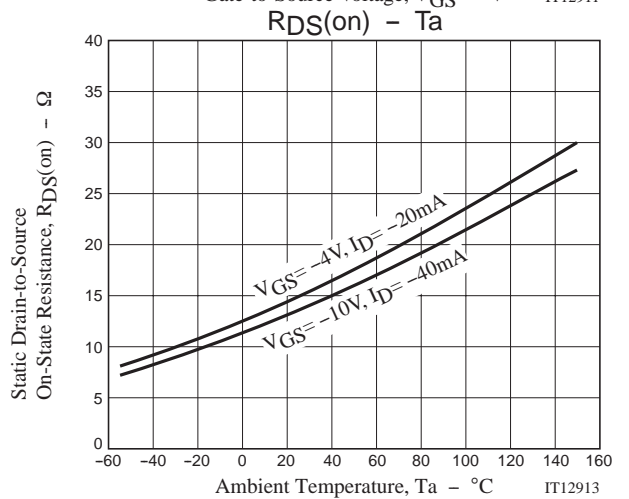
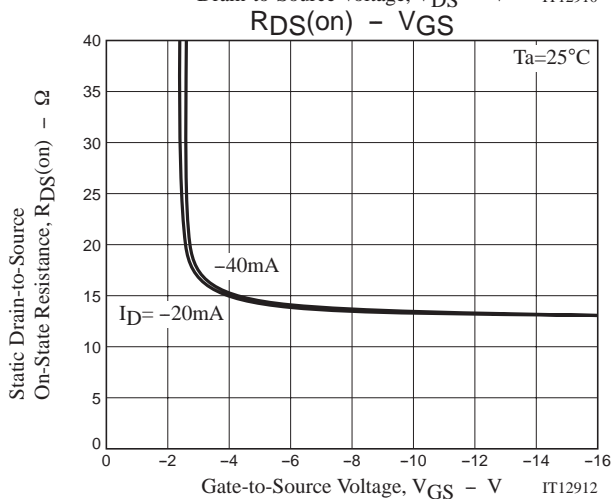
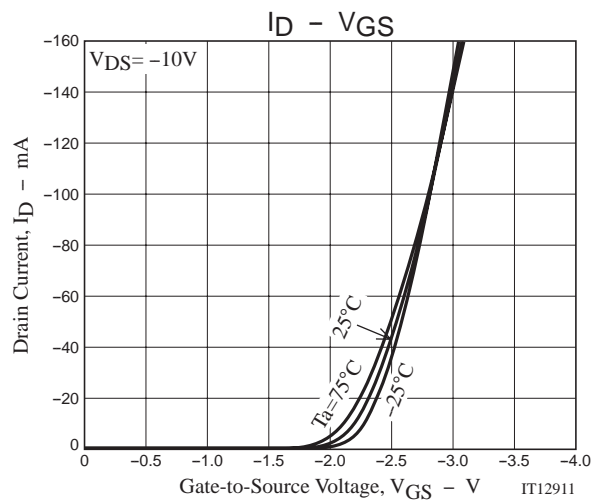
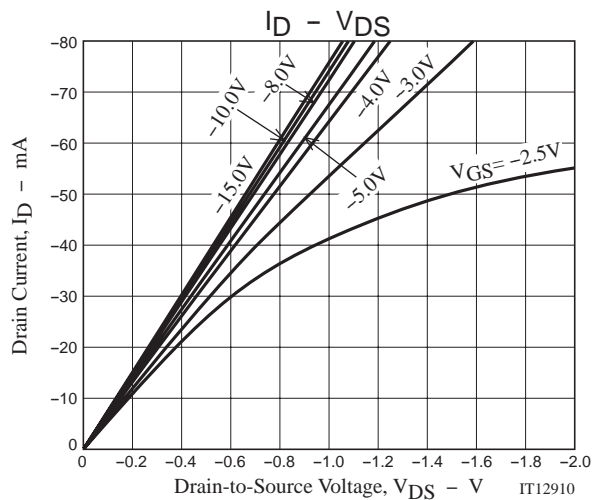
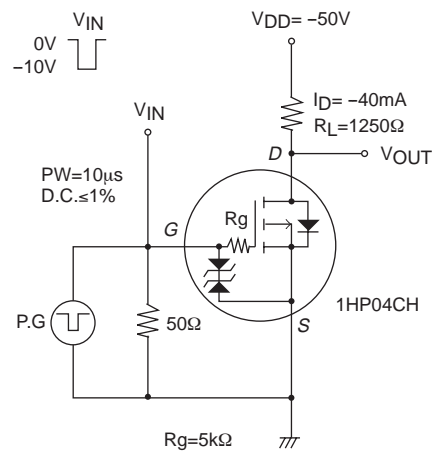
## Package Dimensions

unit : mm (typ)

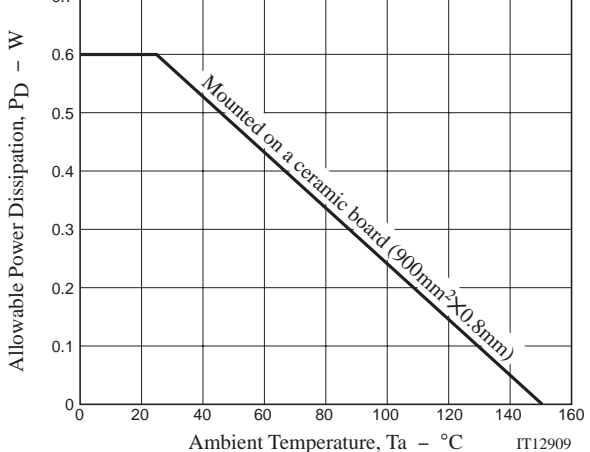
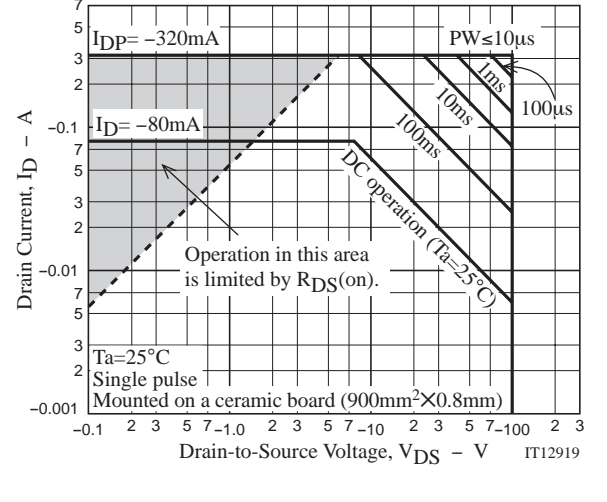
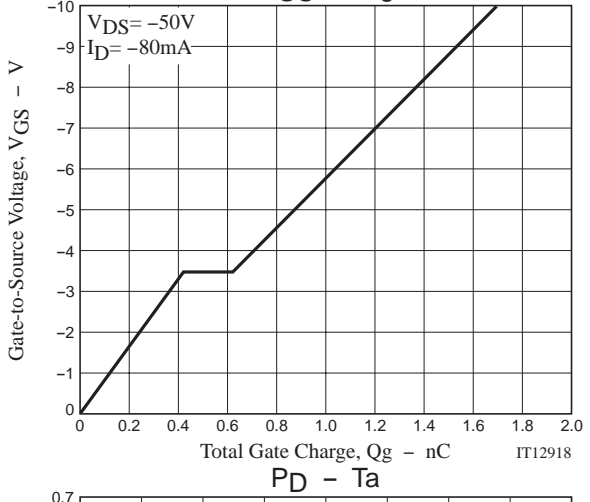
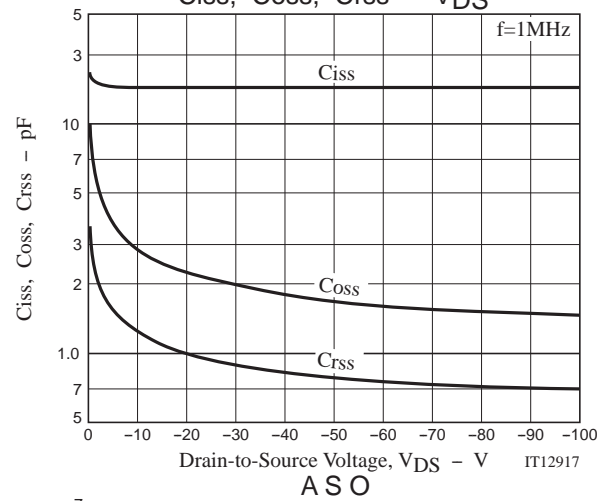
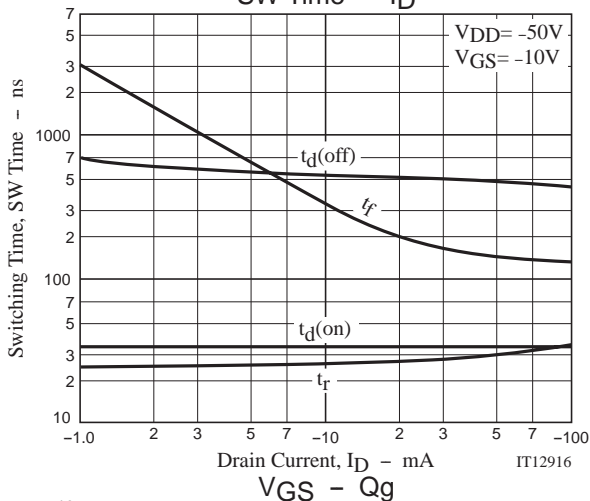
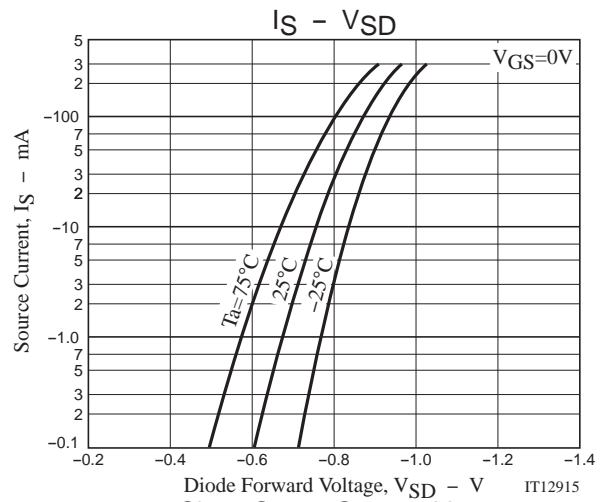
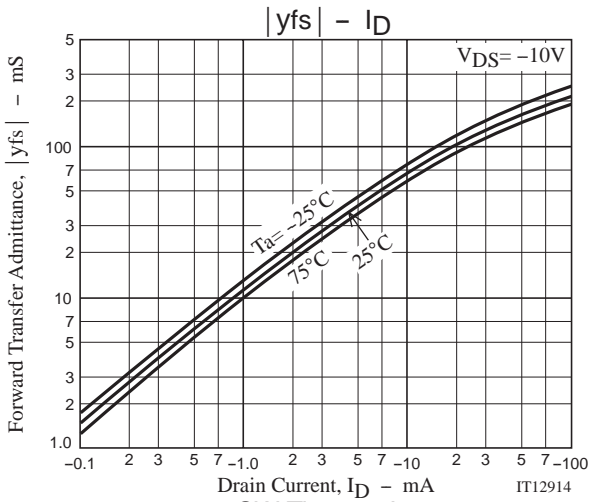
7015A-004



## Switching Time Test Circuit



# 1HP04CH



# 1HP04CH

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Note on usage : Since the 1HP04CH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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