



SANYO Semiconductors

## DATA SHEET

# MCH6603

P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.5V drive.
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting.

### 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>		±10	V
Drain Current (DC)	I <sub>D</sub>		-0.14	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-0.56	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> ×0.8mm) 1unit	0.8	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(BR)DSS	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> =±8V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-40mA	70	110		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-40mA, V <sub>GS</sub> =-4V		18	23	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-20mA, V <sub>GS</sub> =-2.5V		20	28	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-5mA, V <sub>GS</sub> =-1.5V		30	60	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		7.4		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		4.2		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		1.3		pF

Marking : FC

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**SANYO Semiconductor Co., Ltd.**

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# MCH6603

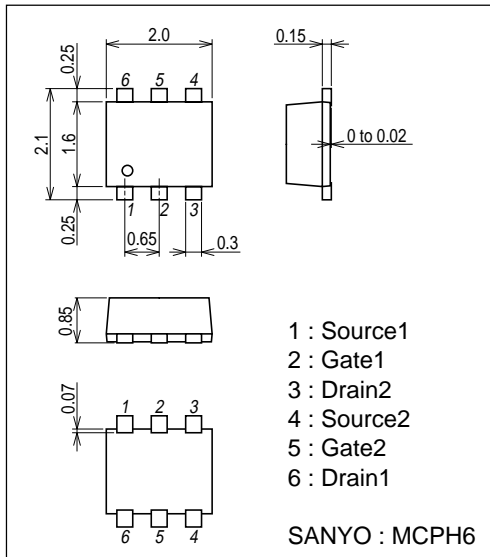
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_d(\text{on})$	See specified Test Circuit.		20		ns
Rise Time	$t_r$	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	$t_d(\text{off})$	See specified Test Circuit.		160		ns
Fall Time	$t_f$	See specified Test Circuit.		150		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		1.40		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		0.16		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-70mA$		0.23		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-70mA, V_{GS}=0V$		-0.85	-1.2	V

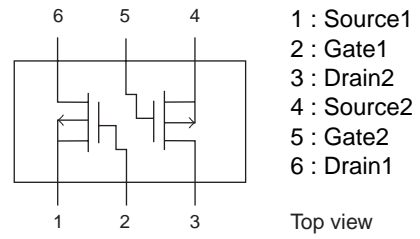
## Package Dimensions

unit : mm

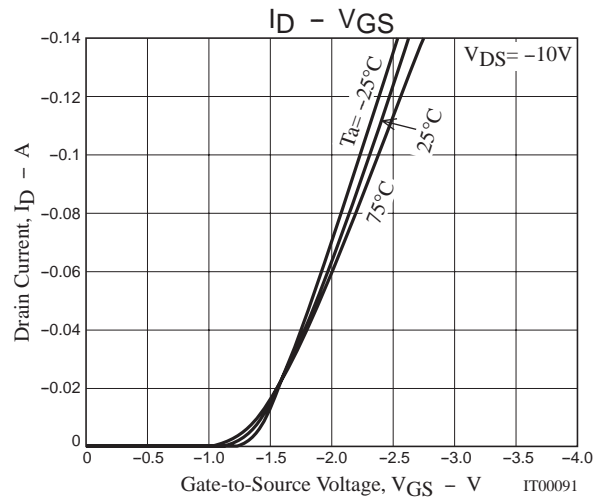
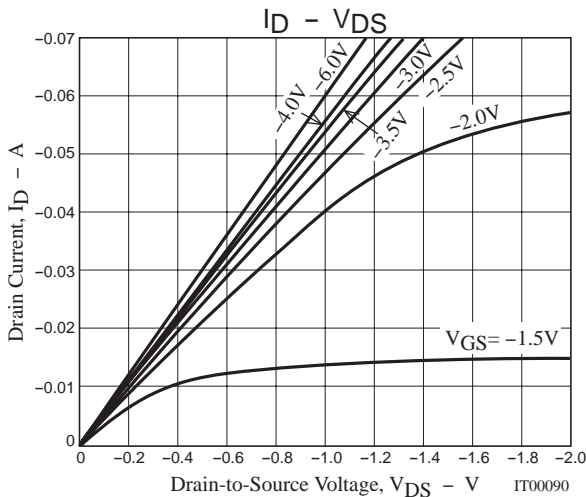
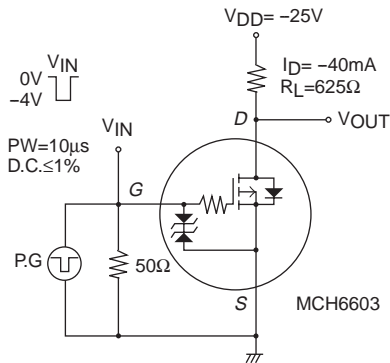
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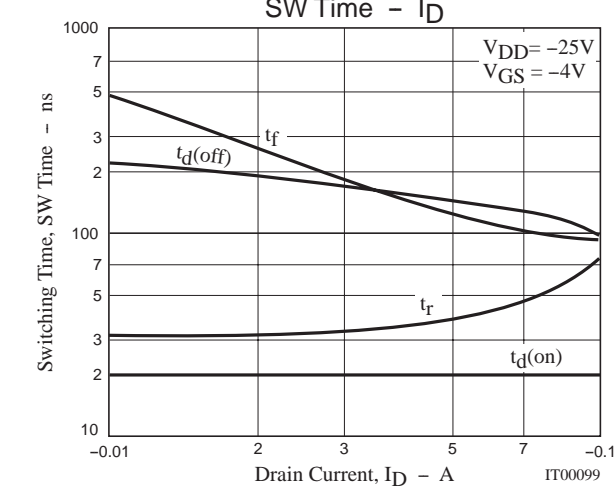
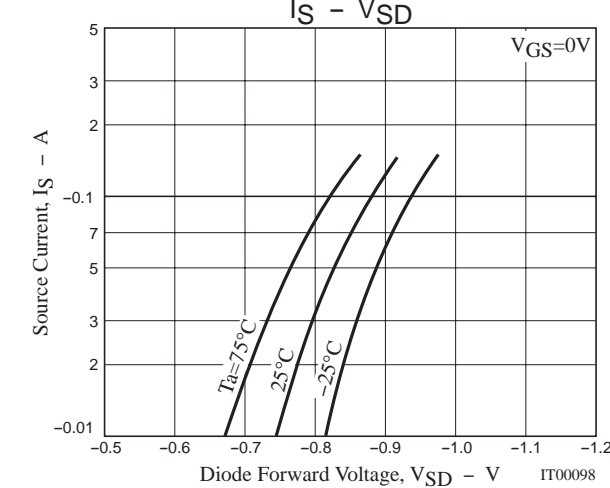
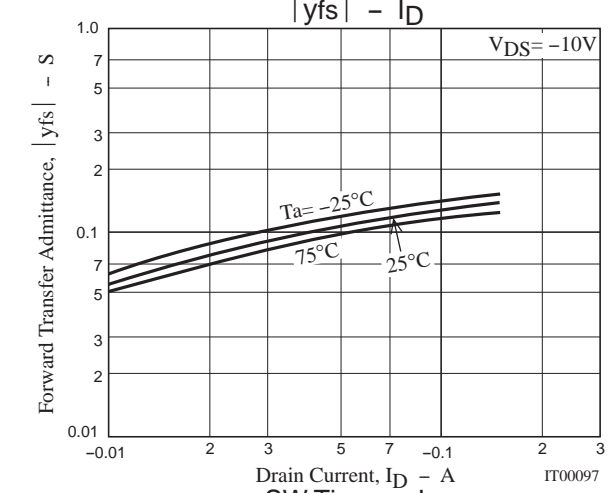
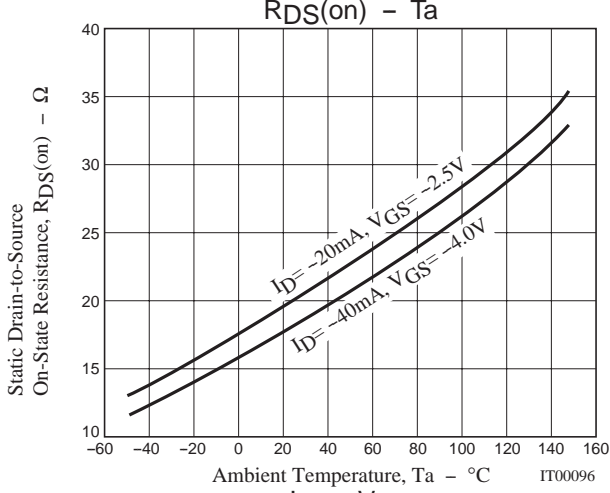
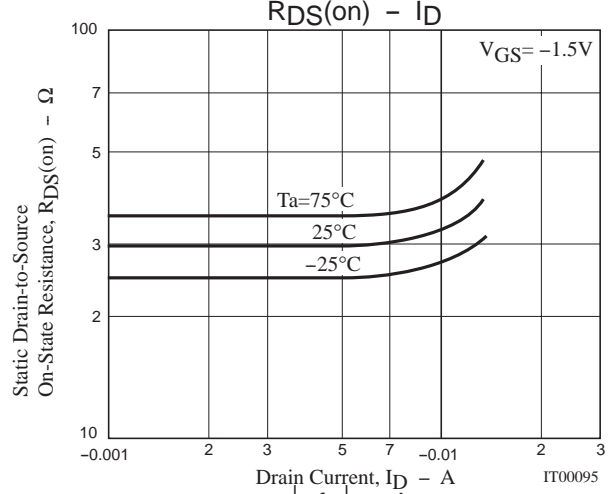
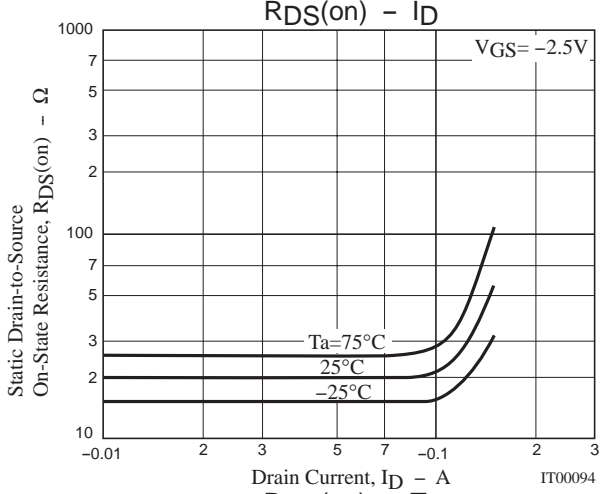
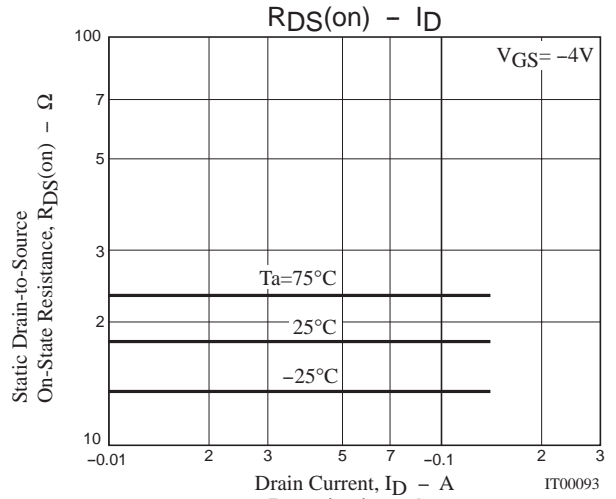
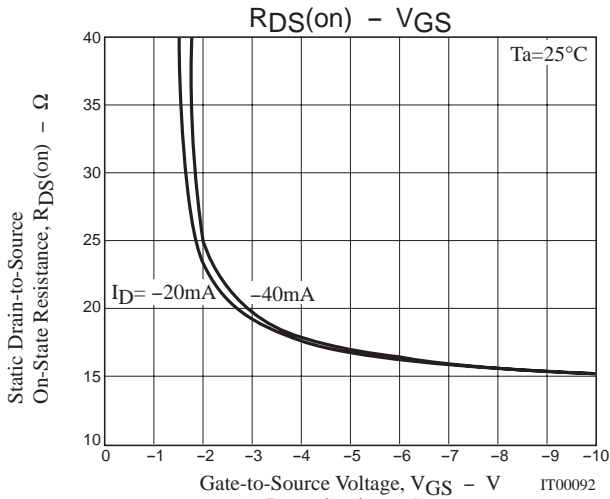
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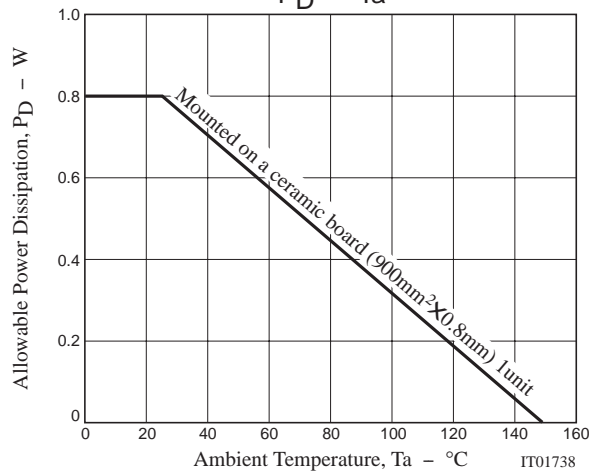
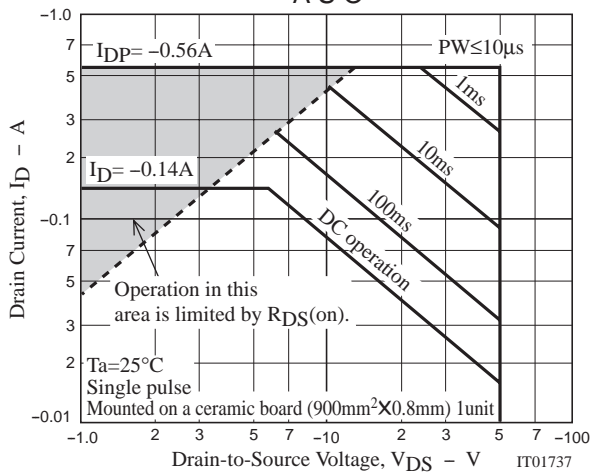
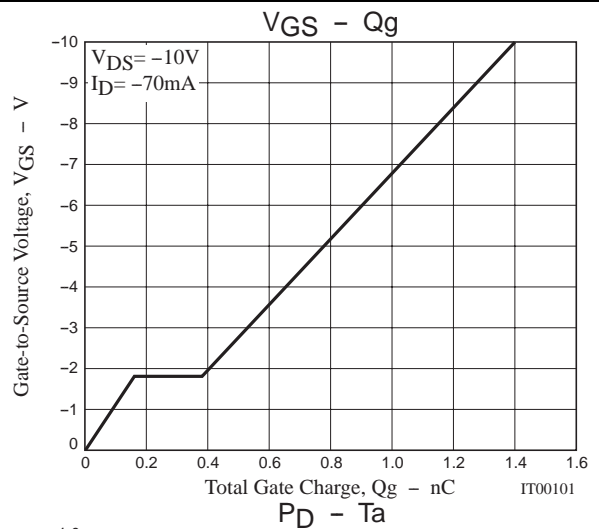
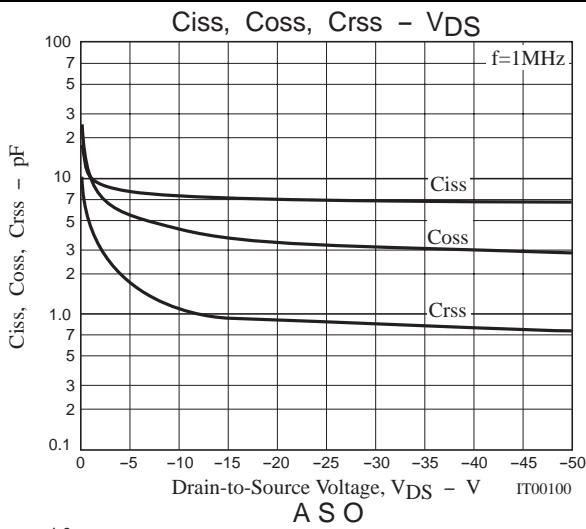


## Switching Time Test Circuit



# MCH6603





Note on usage : Since the MCH6603 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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