



# MCH6653

P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- 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>		-60	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-100	mA
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-400	mA
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	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	-60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-60V, 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> =-50mA	130	220		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-50mA, V <sub>GS</sub> =-4V		6.5	8.5	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-30mA, V <sub>GS</sub> =-2.5V		7.4	11	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-10mA, V <sub>GS</sub> =-1.5V		10	20	Ω

Marking : XE

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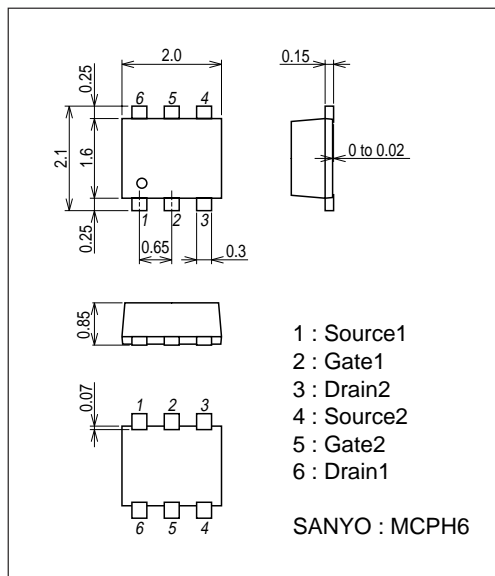
# MCH6653

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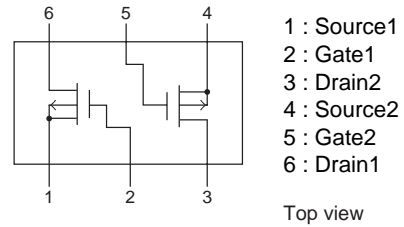
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-20V, f=1MHz$		15		pF
Output Capacitance	Coss	$V_{DS}=-20V, f=1MHz$		3.5		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-20V, f=1MHz$		1.0		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		75		ns
Rise Time	$t_r$	See specified Test Circuit.		116		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		665		ns
Fall Time	$t_f$	See specified Test Circuit.		270		ns
Total Gate Charge	Qg	$V_{DS}=-30V, V_{GS}=-4V, I_D=-100mA$		0.58		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-30V, V_{GS}=-4V, I_D=-100mA$		0.14		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-30V, V_{GS}=-4V, I_D=-100mA$		0.03		nC
Diode Forward Voltage	VSD	$I_S=-100mA, V_{GS}=0V$	-0.91		-1.5	V

## Package Dimensions

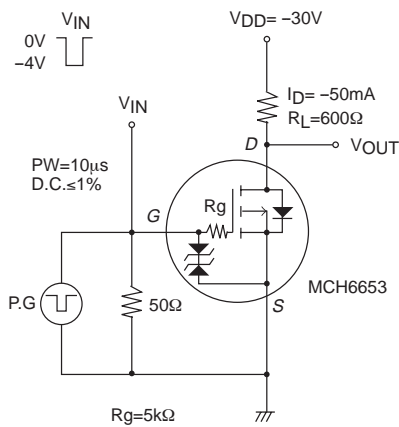
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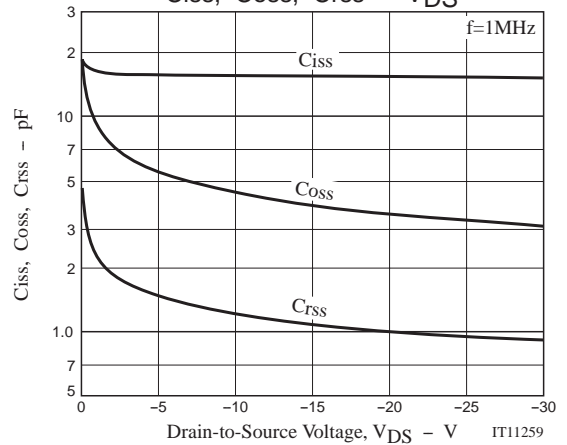
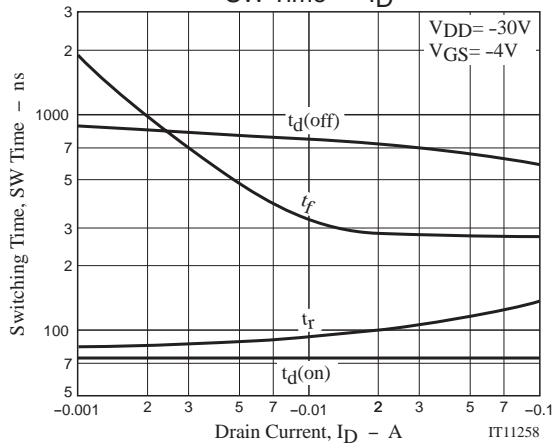
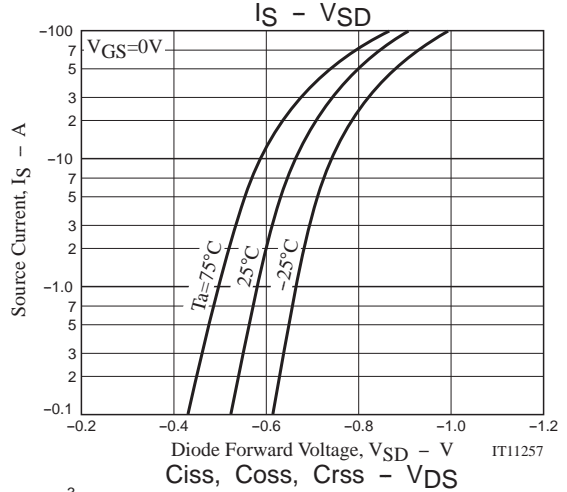
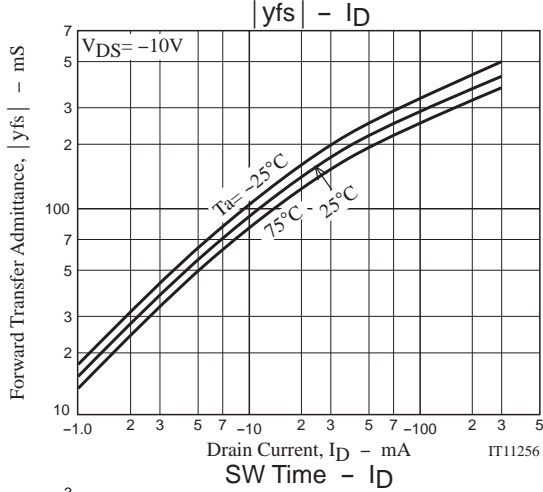
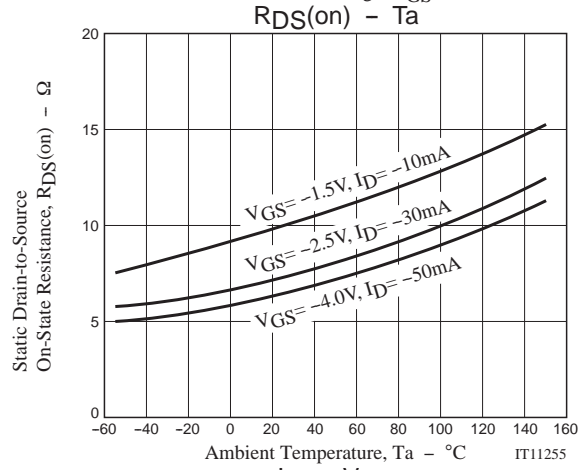
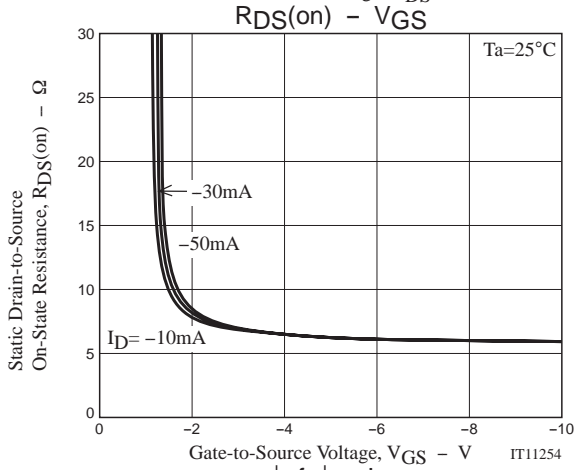
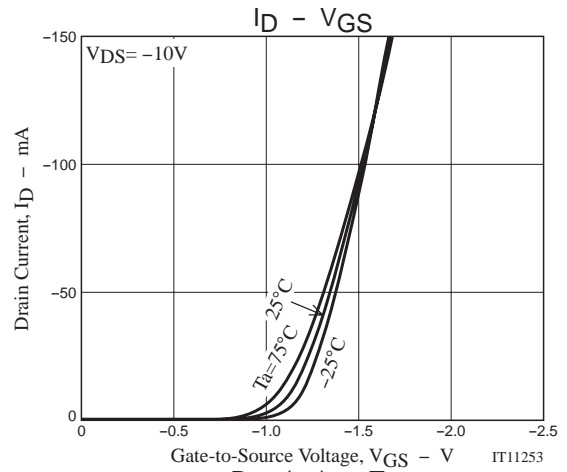
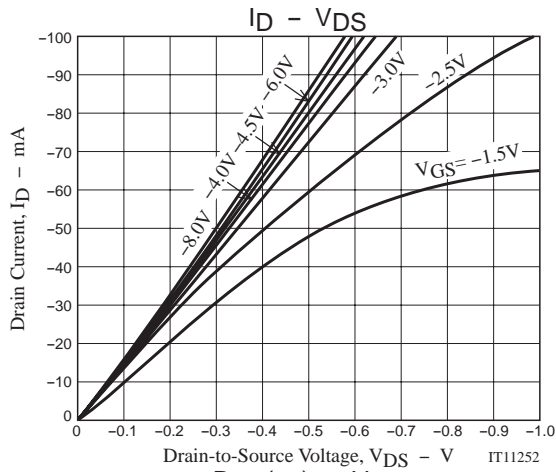


## Electrical Connection

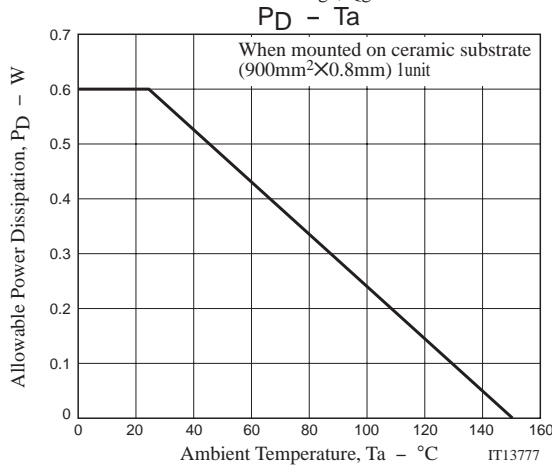
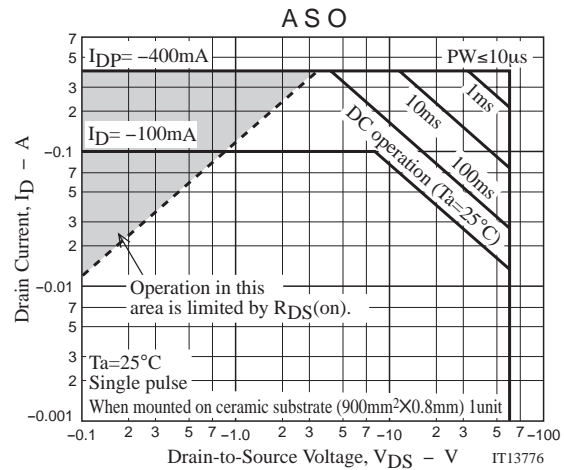
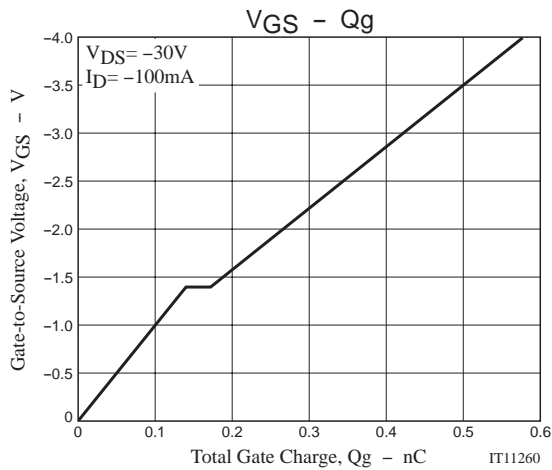


## Switching Time Test Circuit





# MCH6653



Note on usage : Since the MCH6653 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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