



# MCH6406

N-Channel Silicon MOSFET  
**General-Purpose Switching Device Applications**

## Features

- Low ON-resistance.
- 4V drive.

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	20	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm)	1.5	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	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, 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> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =2.5A	2.8	4		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =2.5A, V <sub>GS</sub> =10V		37	48	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =1.2A, V <sub>GS</sub> =4V		63	88	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, f=1MHz		460		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =10V, f=1MHz		95		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =10V, f=1MHz		75		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		11		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		32		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		18		ns

Marking : KF

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**SANYO Electric Co.,Ltd. Semiconductor Company**

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# MCH6406

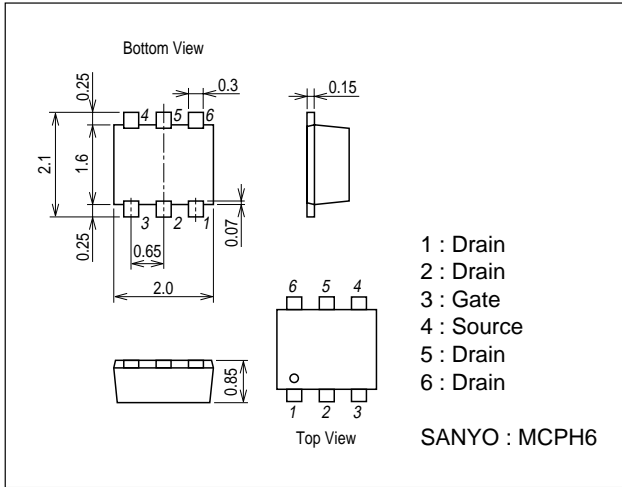
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =5A		8.5		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =5A		1.8		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =5A		1.3		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =5A, V <sub>GS</sub> =0V		0.86	1.2	V

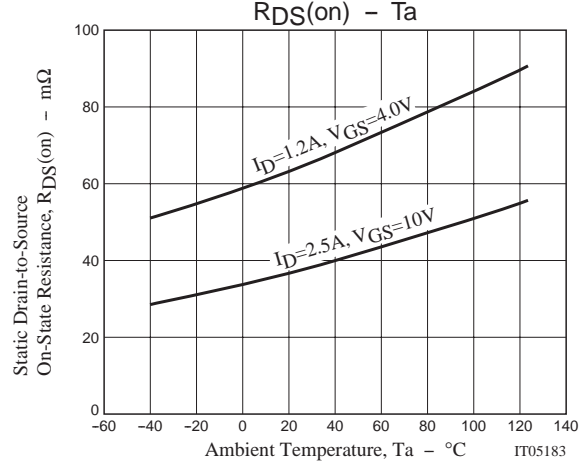
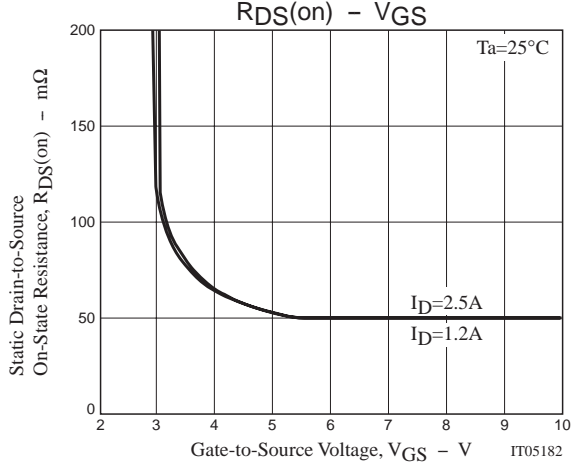
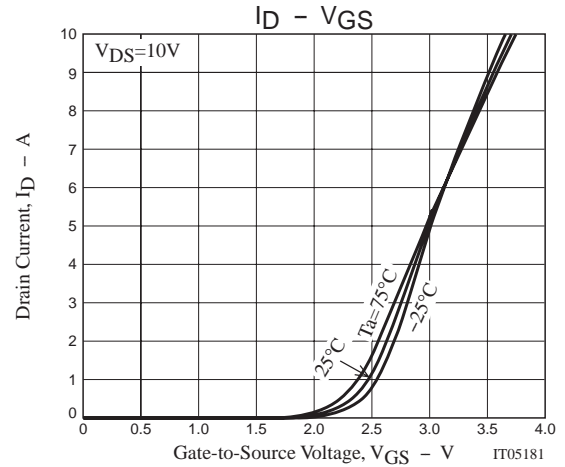
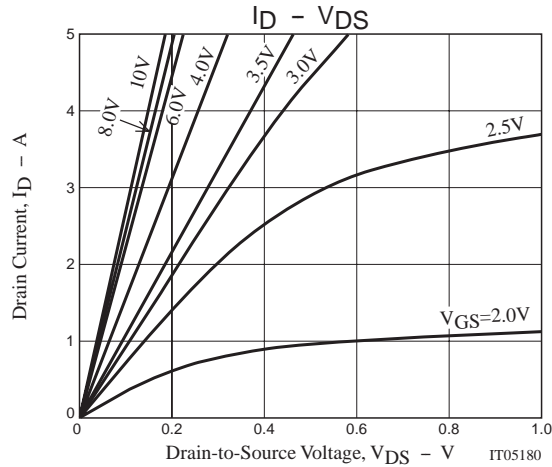
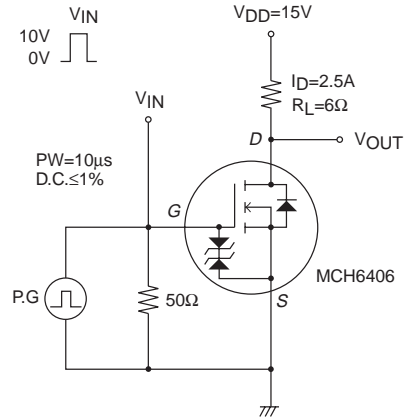
## Package Dimensions

unit : mm

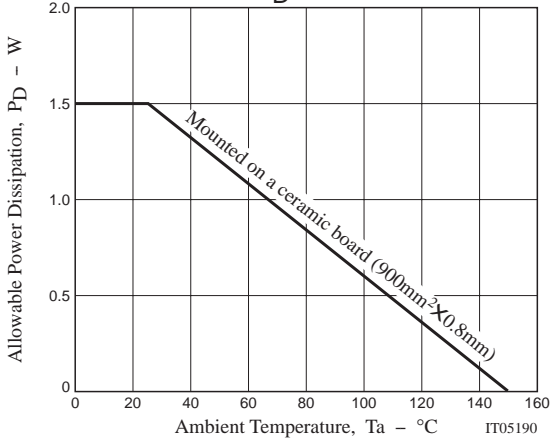
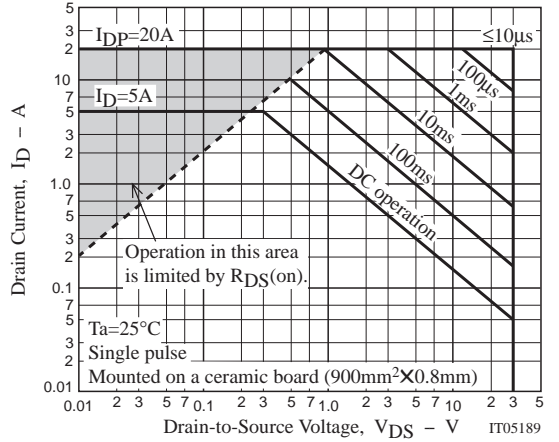
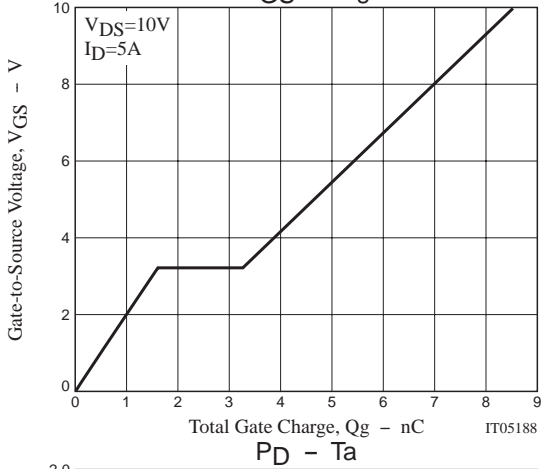
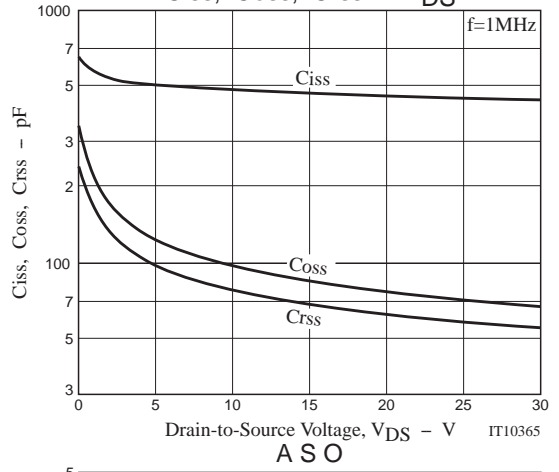
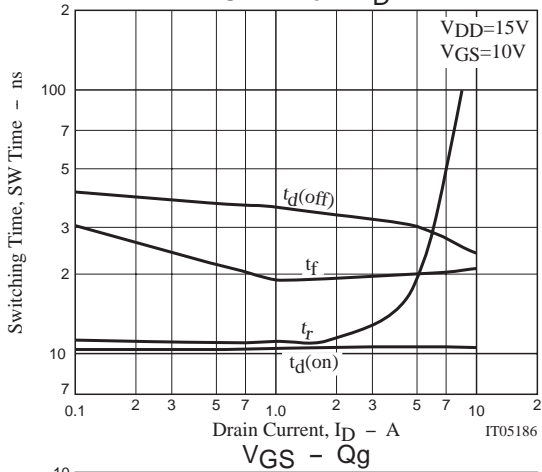
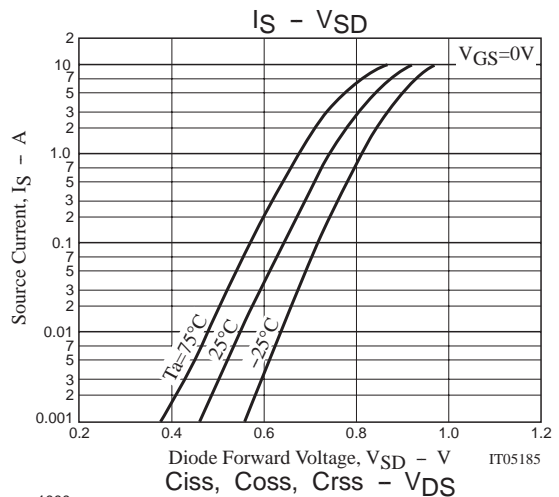
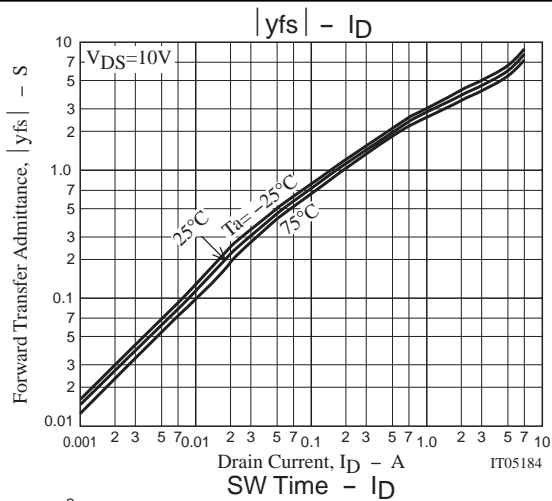
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## Switching Time Test Circuit



# MCH6406



Note on usage : Since the MCH6406 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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