



SANYO Semiconductors

## DATA SHEET

# MCH6320

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

## Features

- Ultrahigh-speed switching.
- 1.8V drive

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-12	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-3.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-14	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1200mm <sup>2</sup> ×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) <sub>DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-12			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-12V, V <sub>GS</sub> =0V			-10	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> =-6V, I <sub>D</sub> =-1mA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1.5A	2.7	4.5		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1.5A, V <sub>GS</sub> =-4.5V		54	70	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.8A, V <sub>GS</sub> =-2.5V		80	115	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-0.3A, V <sub>GS</sub> =-1.8V		125	215	mΩ

Marking : JU

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# MCH6320

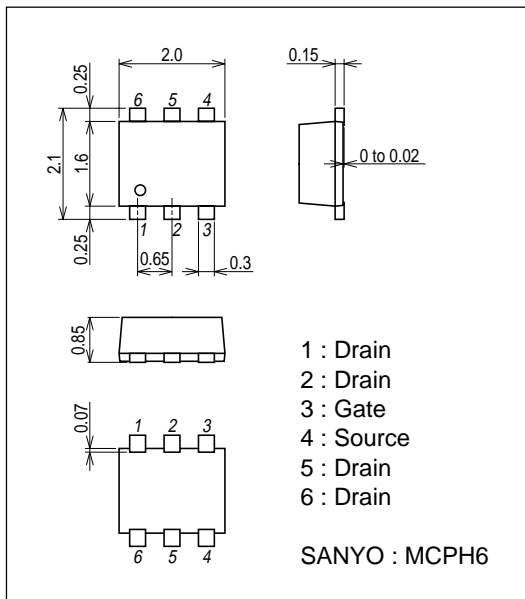
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=-6V, f=1MHz$		405		pF
Output Capacitance	$C_{oss}$	$V_{DS}=-6V, f=1MHz$		145		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=-6V, f=1MHz$		100		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		8.8		ns
Rise Time	$t_r$	See specified Test Circuit.		80		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		41		ns
Fall Time	$t_f$	See specified Test Circuit.		50		ns
Total Gate Charge	$Q_g$	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-3.5A$		5.6		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-3.5A$		0.7		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-3.5A$		1.6		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-3.5A, V_{GS}=0V$		-0.86	-1.2	V

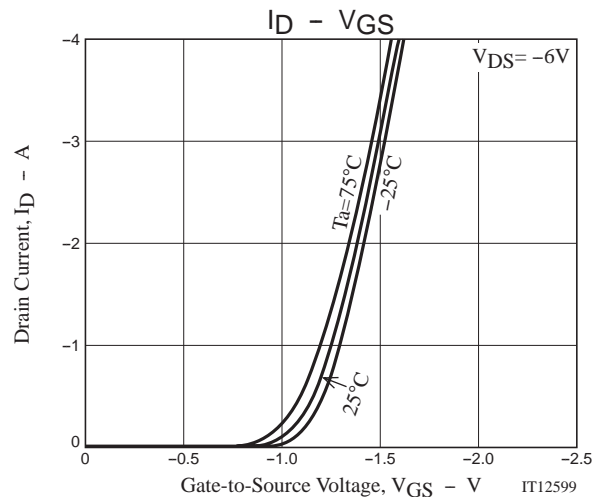
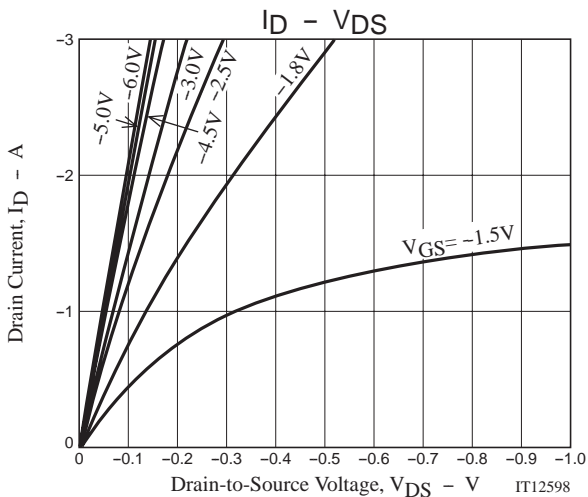
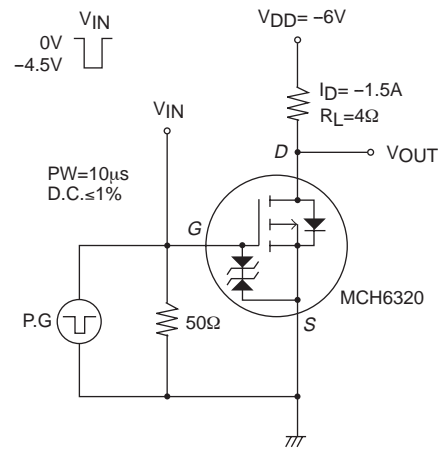
## Package Dimensions

unit : mm (typ)

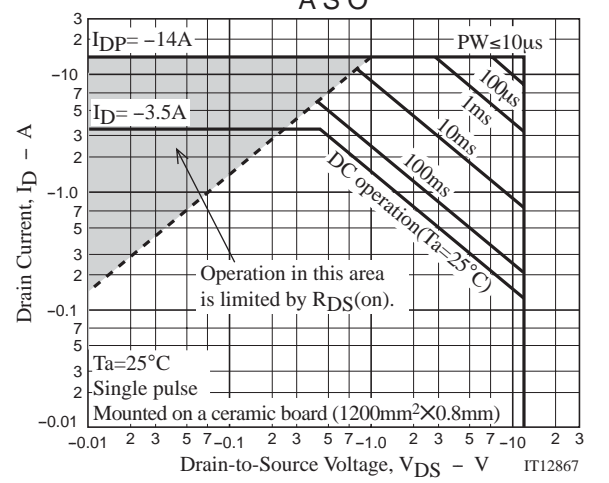
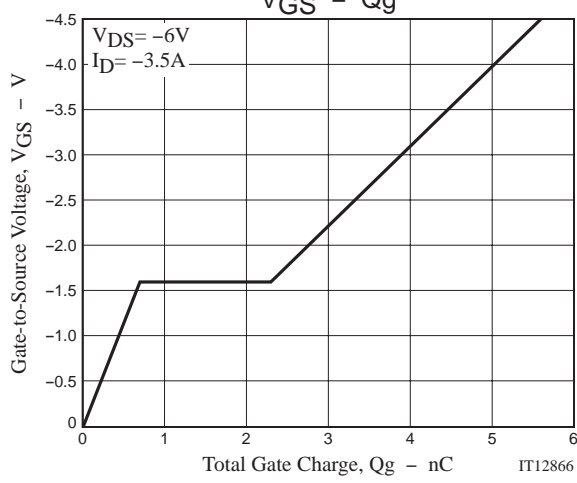
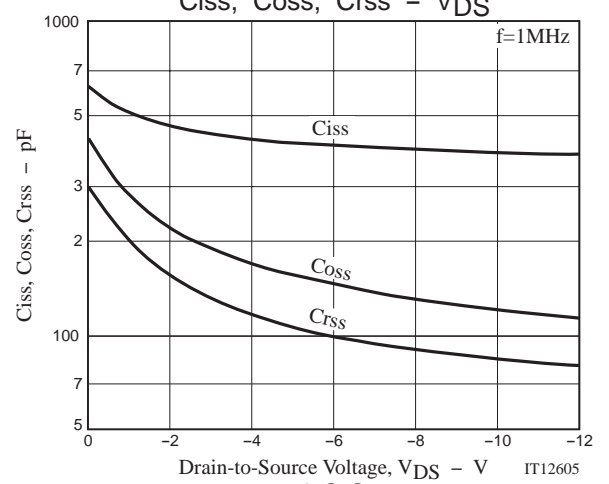
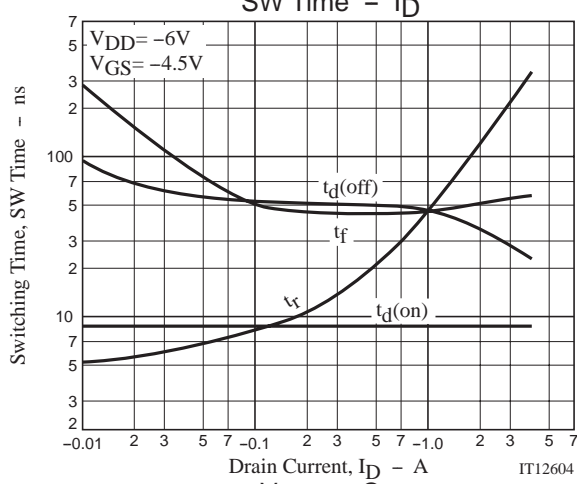
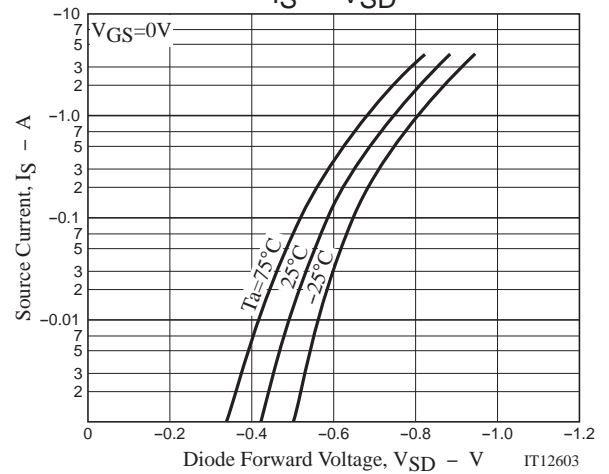
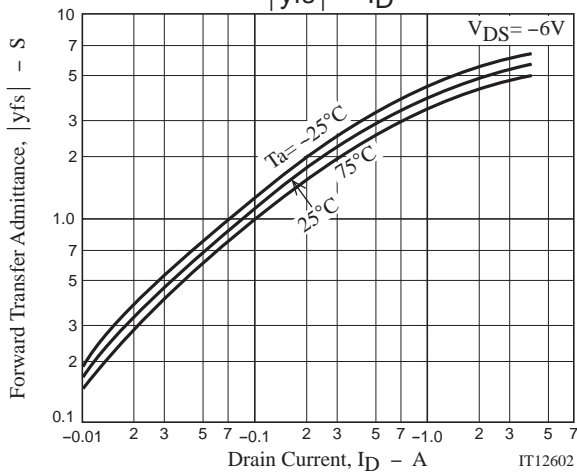
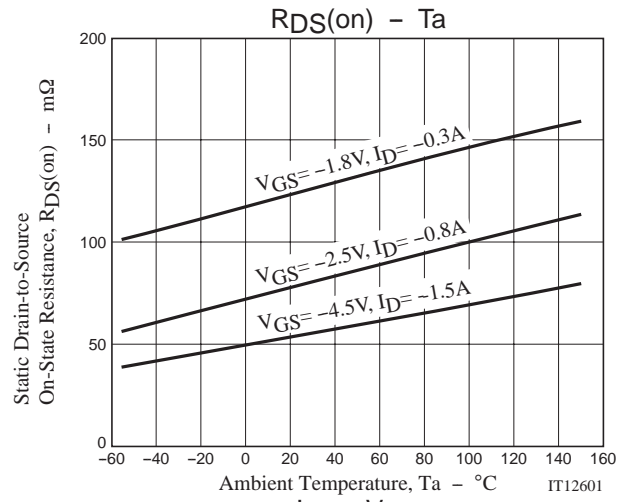
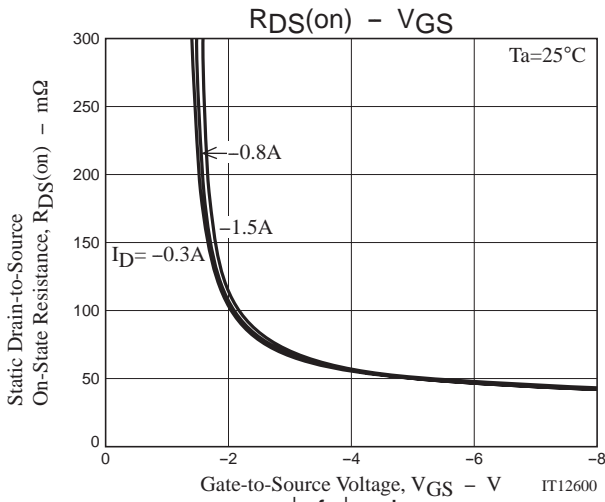
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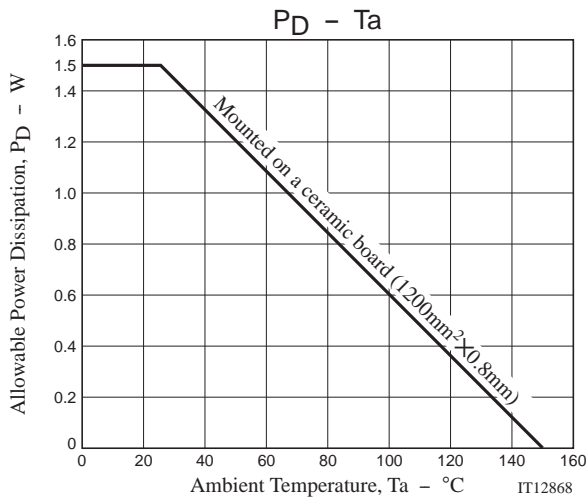
## Switching Time Test Circuit



# MCH6320



## MCH6320



Note on usage : Since the MCH6320 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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