



# MCH6306 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 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>		-4	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-16	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> X0.8mm)	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 <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±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> =-2A	2.5	3.6		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-10V		53	69	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4.5V		92	129	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4V		105	147	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		510		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		115		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		78		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		20		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		40		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		32		ns

Marking : JF

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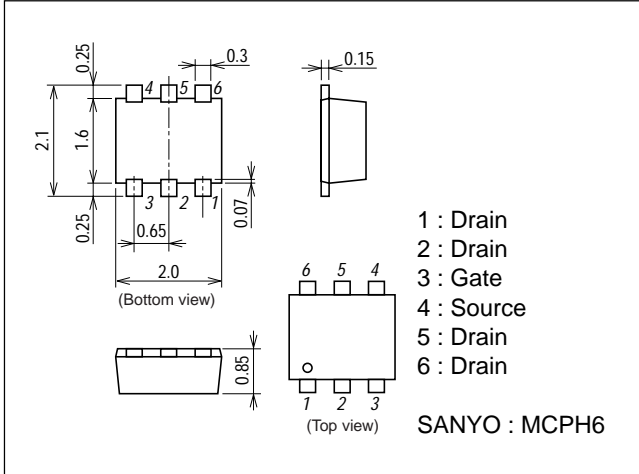
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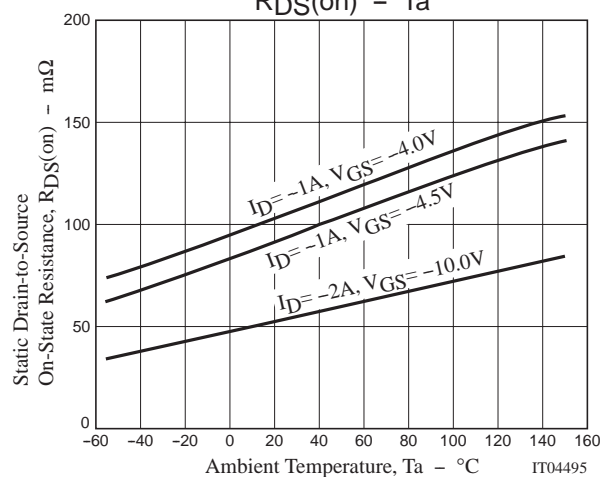
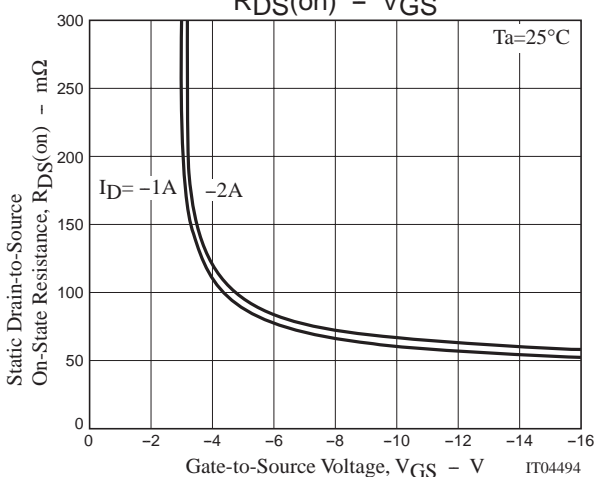
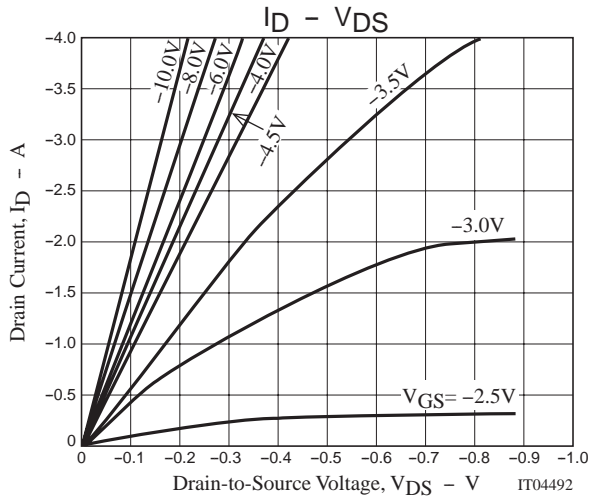
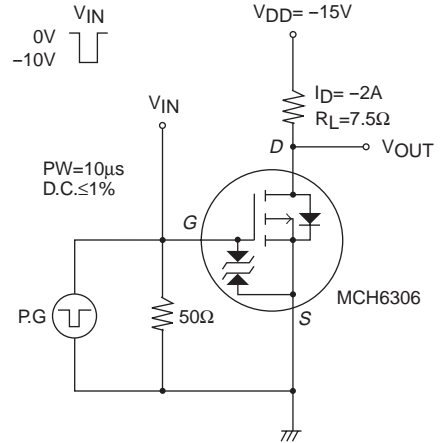
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		11		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		2.4		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		1.7		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-4A, V_{GS}=0$		-0.86	-1.2	V

## Package Dimensions

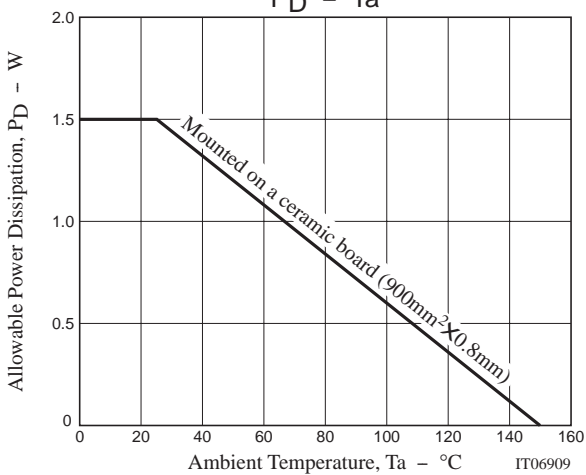
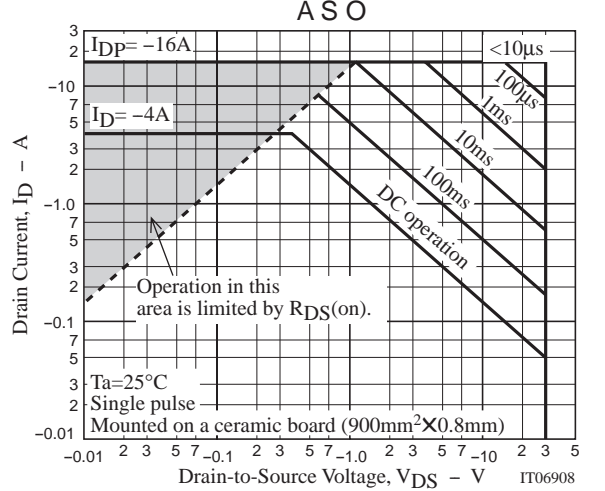
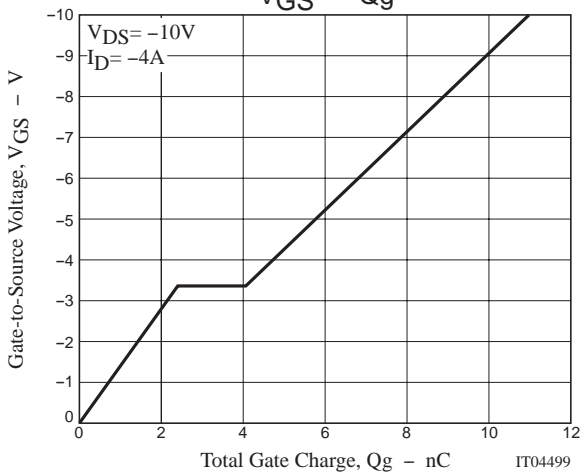
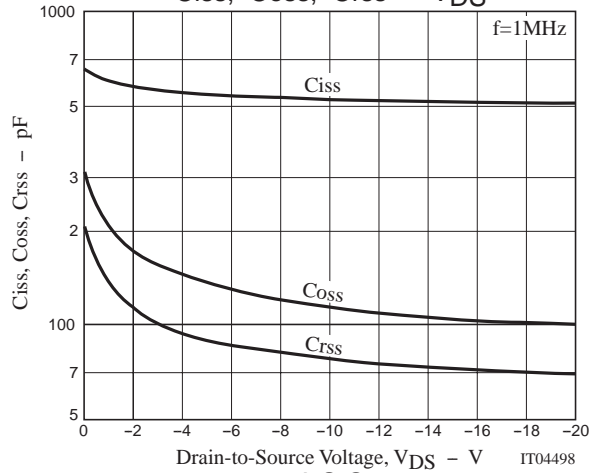
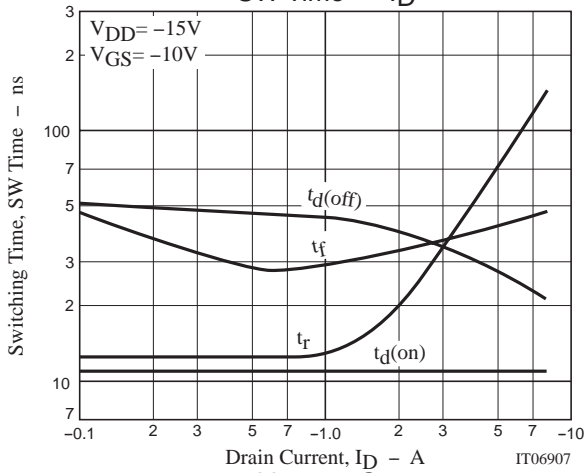
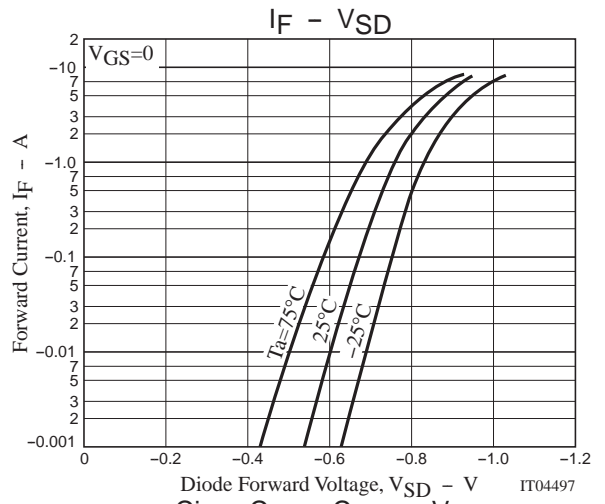
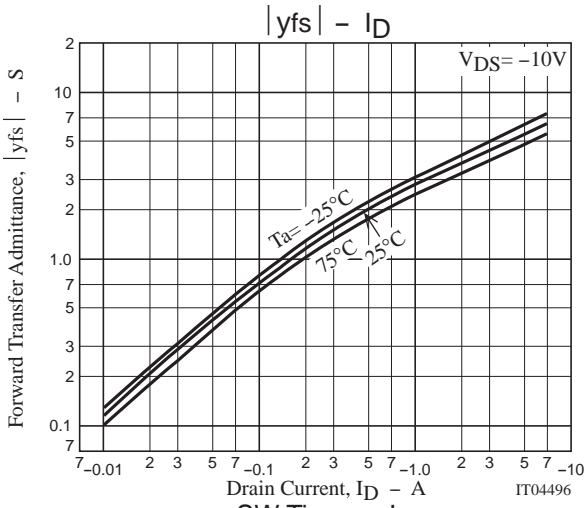
unit : mm  
2193A



## Switching Time Test Circuit



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