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ON Semiconductor DATA SHEET

MCH6307

P-Channel Silicon MOSFET

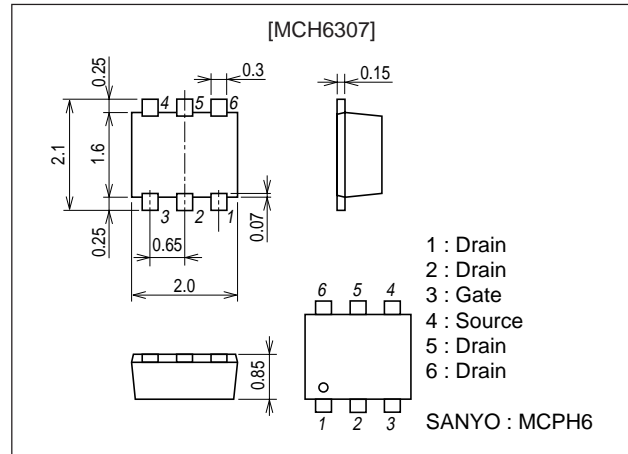
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

Package Dimensions

unit : mm
2193A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-12	V
Gate-to-Source Voltage	V _{GSS}		±8	V
Drain Current (DC)	I _D		-5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-20	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²×0.8mm)	1.5	W
		Mounted on an FR4 board, PW≤3s	2.0	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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 _D =-1mA, V _{GS} =0	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±6.4V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-6V, I _D =-1mA	-0.3		-1.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-6V, I _D =-3A	5.8	8.5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-3A, V _{GS} =-4.5V		35	46	mΩ
	R _{DS(on)2}	I _D =-1.5A, V _{GS} =-2.5V		47	66	mΩ
	R _{DS(on)3}	I _D =-0.3A, V _{GS} =-1.8V		68	98	mΩ

Marking : JG

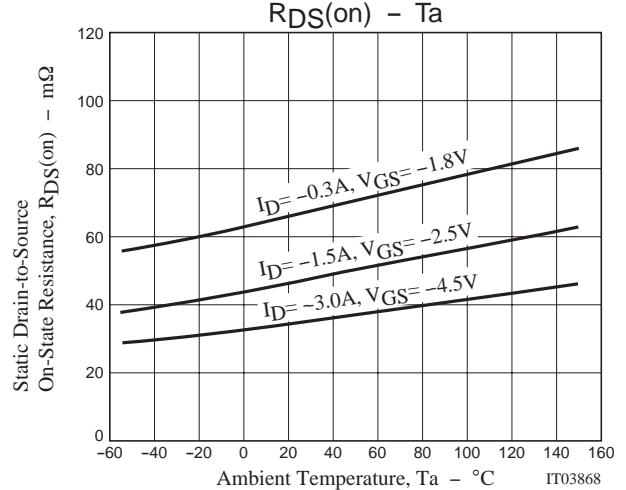
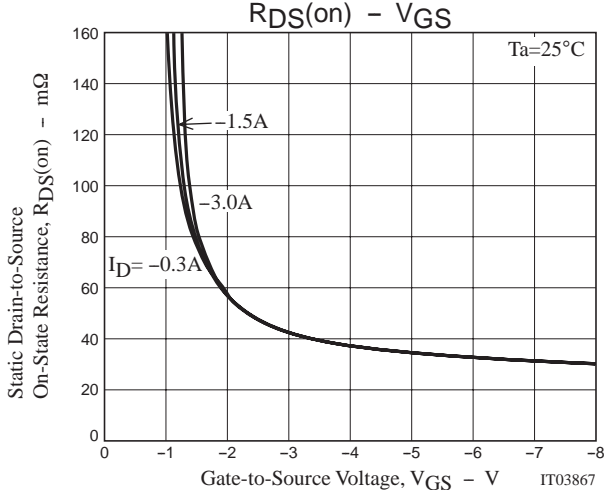
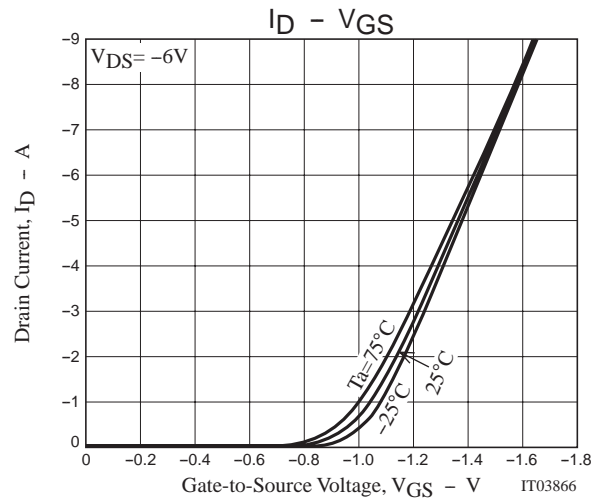
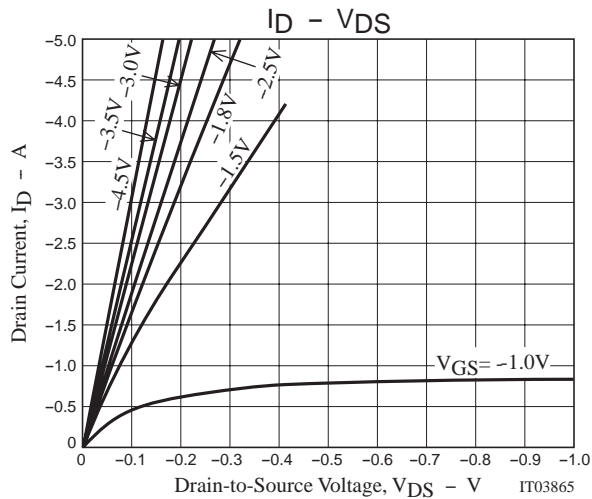
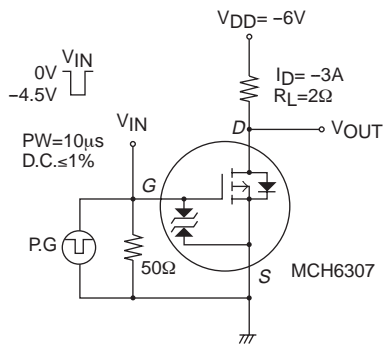
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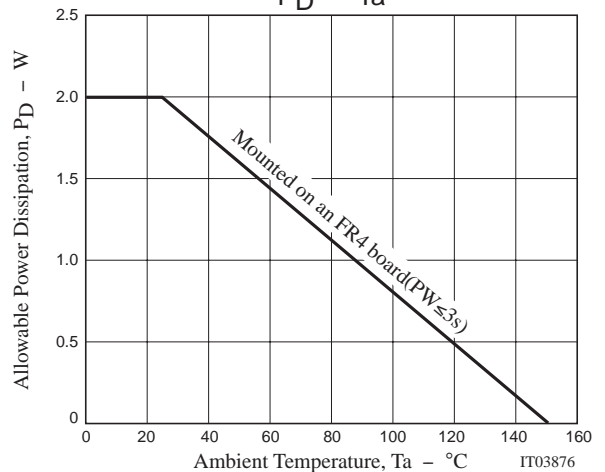
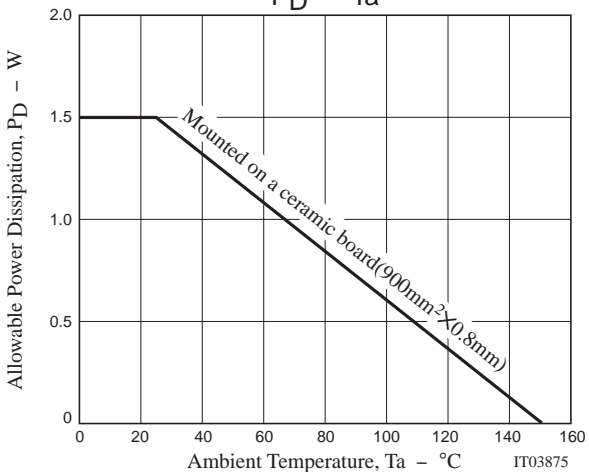
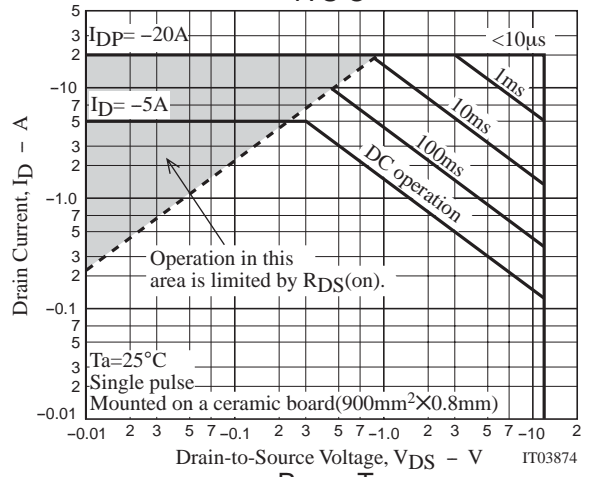
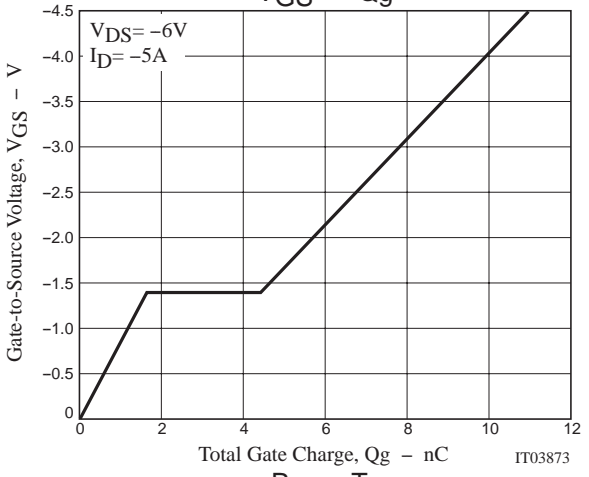
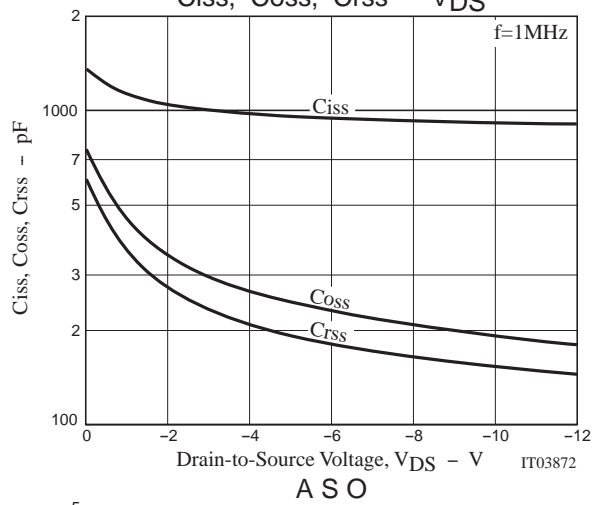
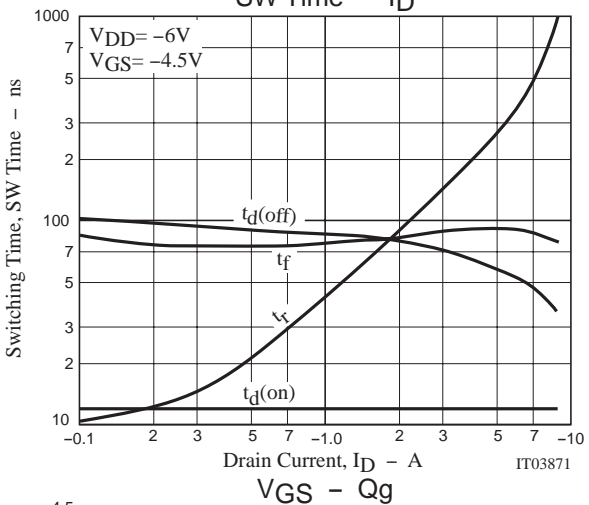
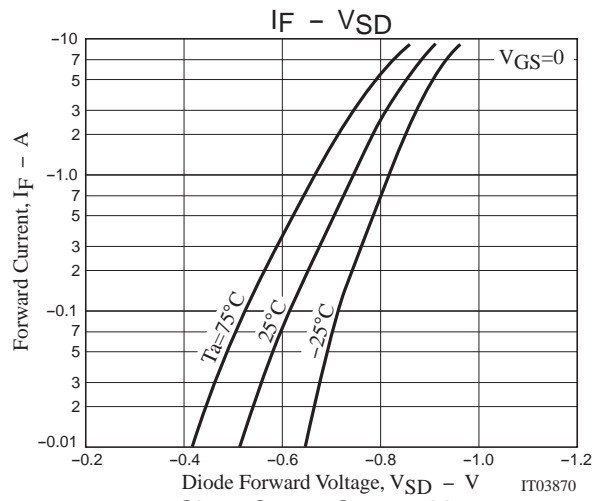
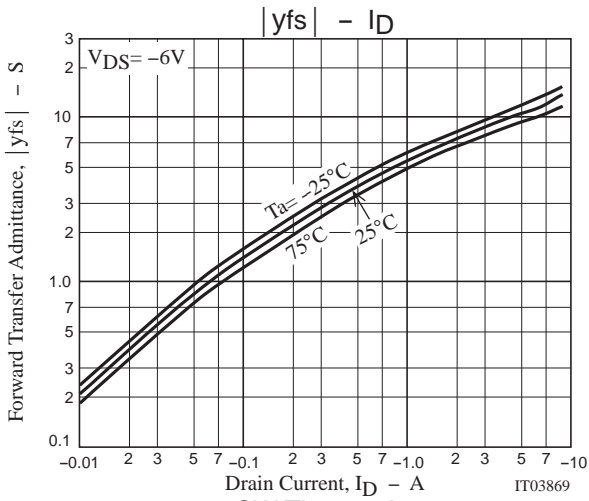
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =-6V, f=1MHz		940		pF
Output Capacitance	Coss	V _{DS} =-6V, f=1MHz		230		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-6V, f=1MHz		180		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		12		ns
Rise Time	t _r	See specified Test Circuit.		143		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		71		ns
Fall Time	t _f	See specified Test Circuit.		89		ns
Total Gate Charge	Q _g	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-5A		11		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-5A		1.6		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-5A		2.8		nC
Diode Forward Voltage	V _{SD}	I _S =-5A, V _{GS} =0	-0.85		-1.5	V

Switching Time Test Circuit





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