



MCH6406

Ultrahigh-Speed Switching Applications

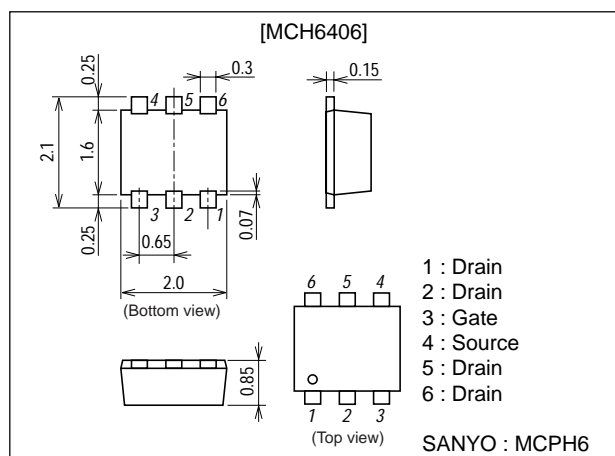
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V 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}		30	V
Gate-to-Source Voltage	V _{GSS}		±20	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(900mm ² X0.8mm)	1.5	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	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±16V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =2.5A	2.8	4		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =2.5A, V _{GS} =10V		37	48	mΩ
	R _{DS(on)2}	I _D =1.2A, V _{GS} =4V		63	88	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		370		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		85		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		47		pF

Marking : KF

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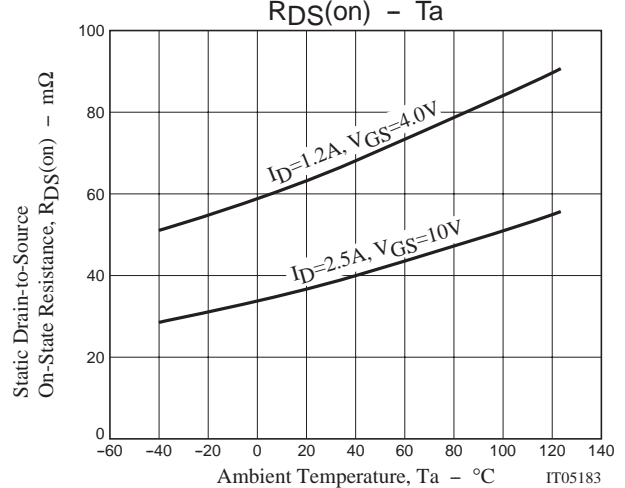
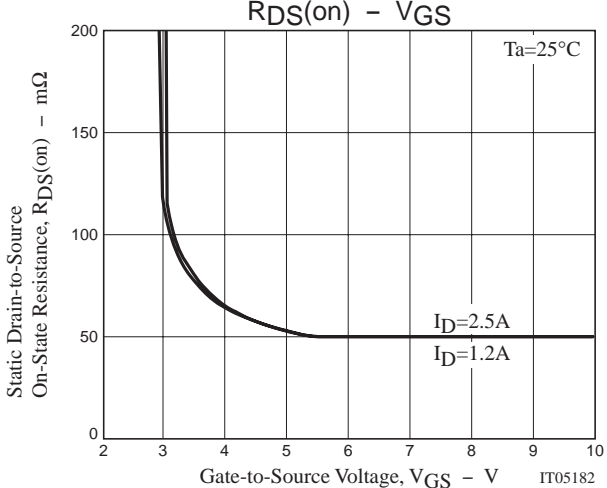
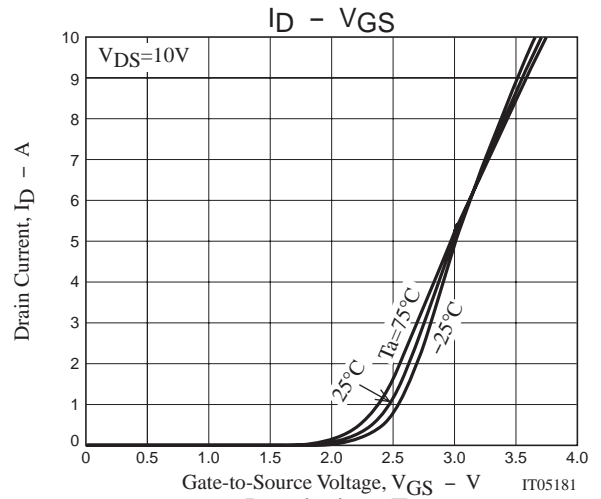
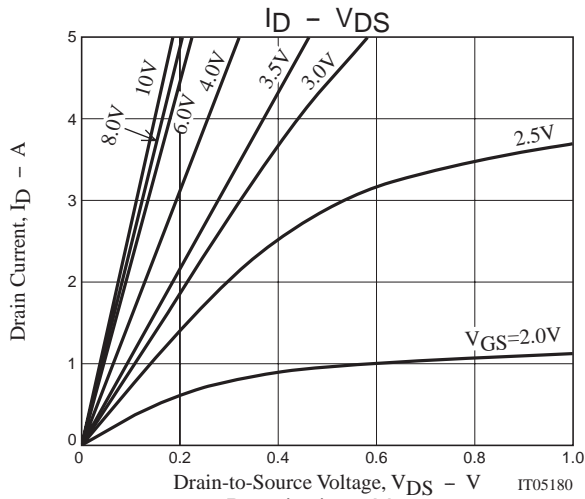
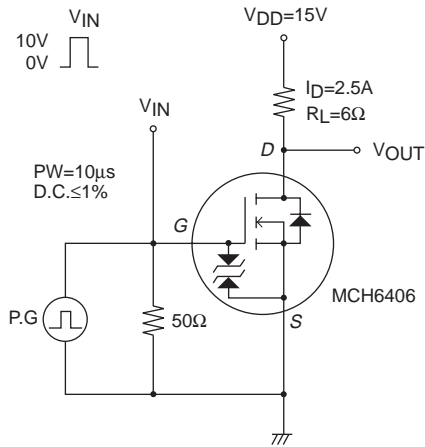
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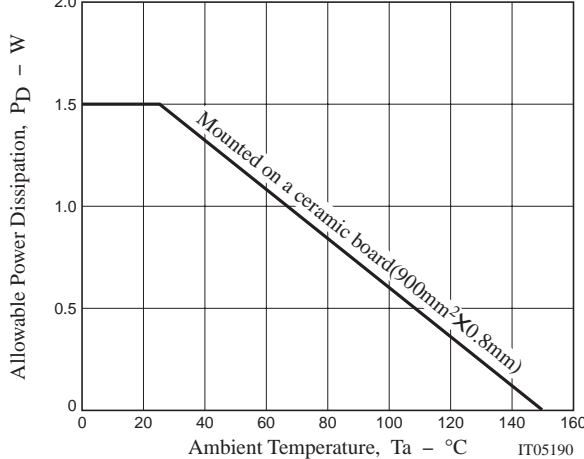
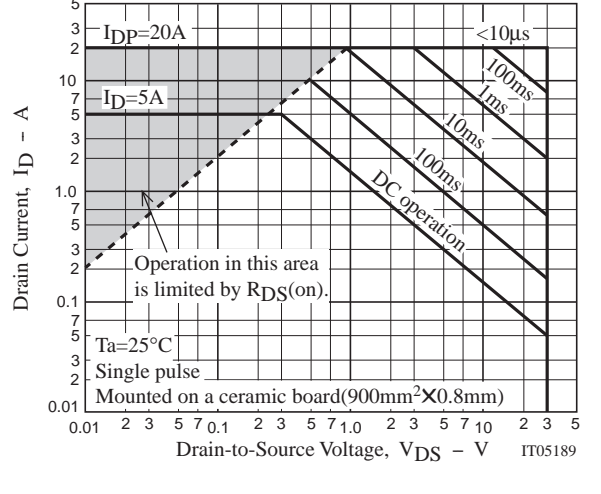
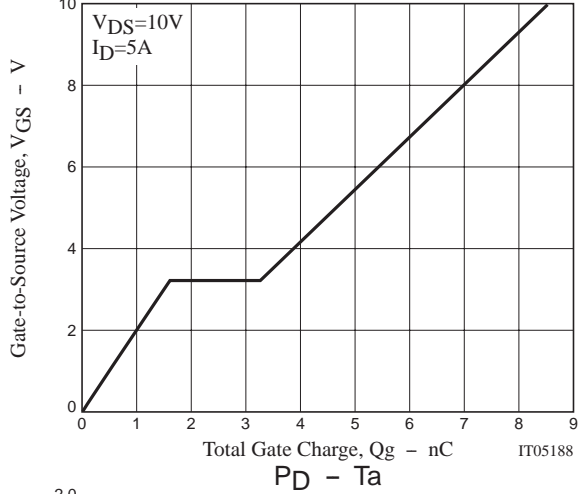
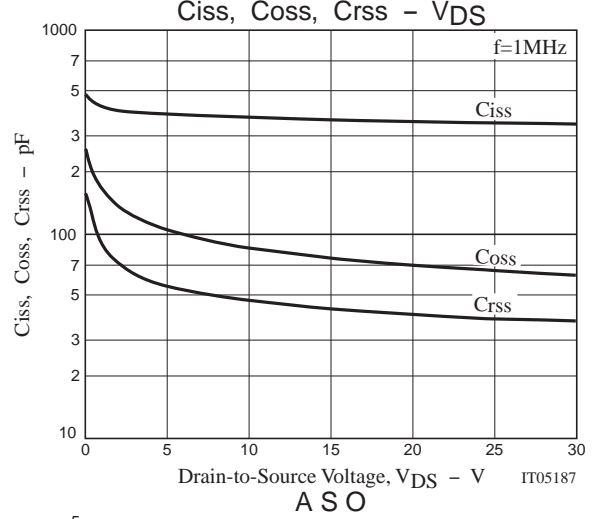
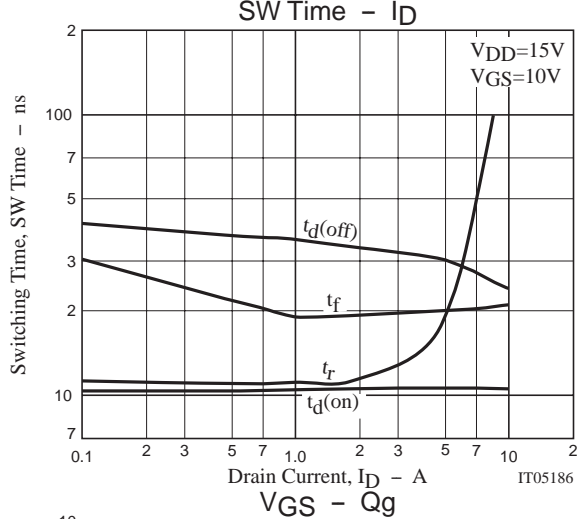
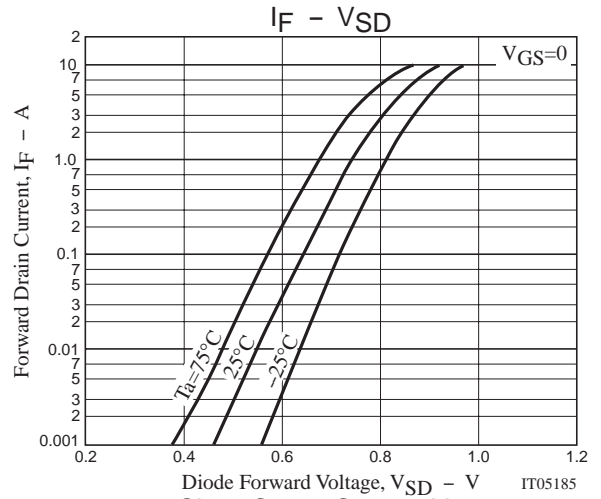
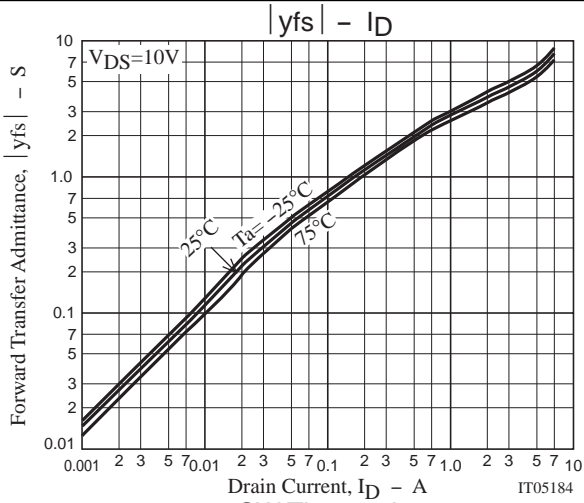
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		32		ns
Fall Time	t_f	See specified Test Circuit.		18		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		8.5		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		1.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=5A$		1.3		nC
Diode Forward Voltage	V_{SD}	$I_S=5A, V_{GS}=0$		0.86	1.2	V

Switching Time Test Circuit



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