



MCH3316 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		-60	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		-1.2	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-4.8	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm ² X0.8mm)	1	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}$, $V_{GS}=0$	-60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60\text{V}$, $V_{GS}=0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$, $I_D=-1\text{mA}$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}$, $I_D=-0.6\text{A}$	0.8	1.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-0.6\text{A}$, $V_{GS}=-10\text{V}$		400	530	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-0.3\text{A}$, $V_{GS}=-4\text{V}$		540	750	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		265		pF
Output Capacitance	C_{oss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		24		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		16		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		8		ns
Rise Time	t_r	See specified Test Circuit.		6		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		28		ns
Fall Time	t_f	See specified Test Circuit.		20		ns

Marking : JR

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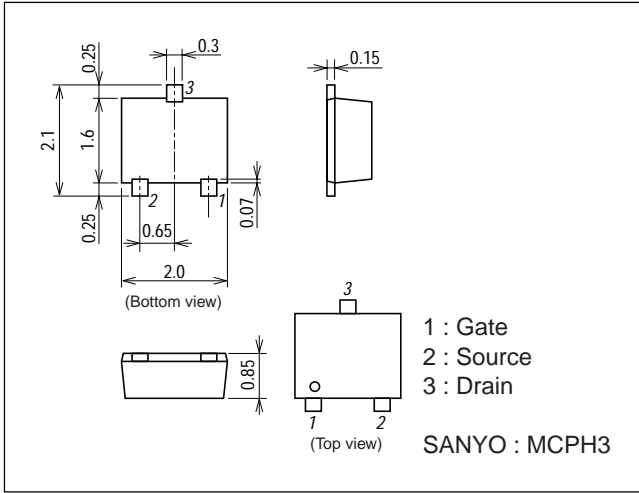
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-30V, V_{GS}=-10V, I_D=-1.2A$		6.4		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-30V, V_{GS}=-10V, I_D=-1.2A$		1.0		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-30V, V_{GS}=-10V, I_D=-1.2A$		1.0		nC
Diode Forward Voltage	V_{SD}	$I_S=-1.2A, V_{GS}=0$		-0.87	-1.2	V

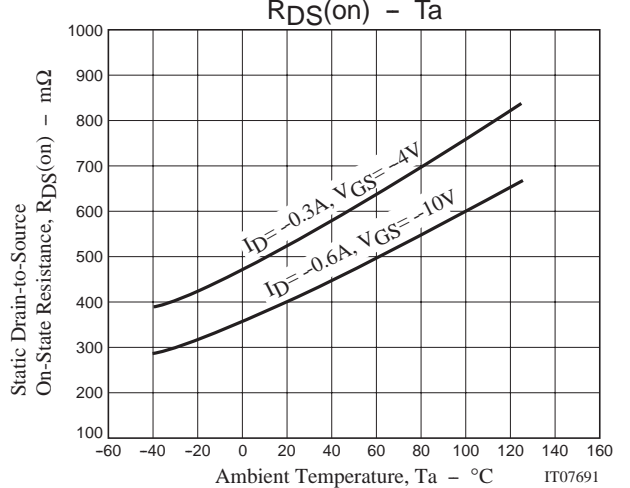
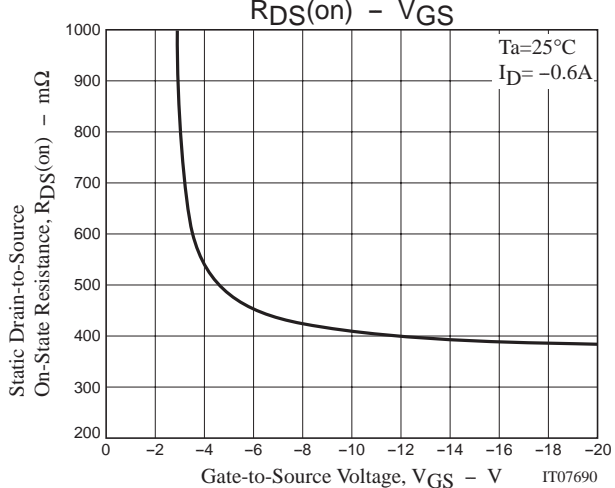
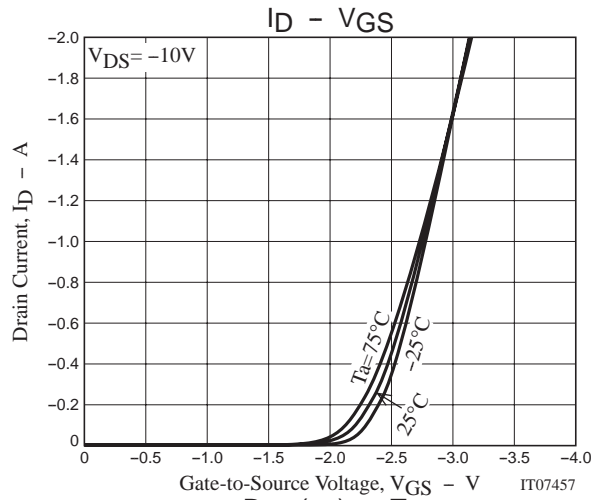
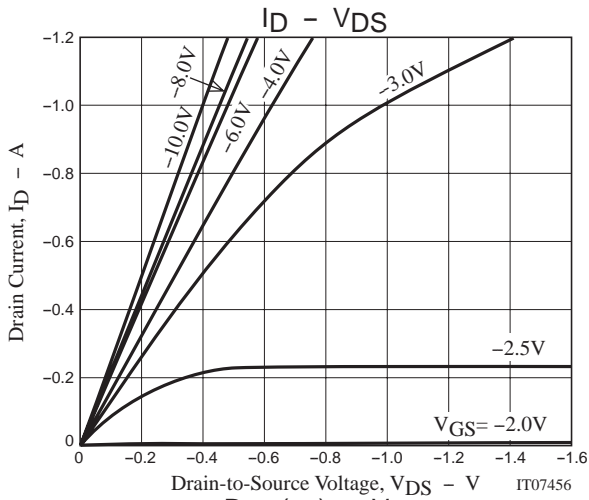
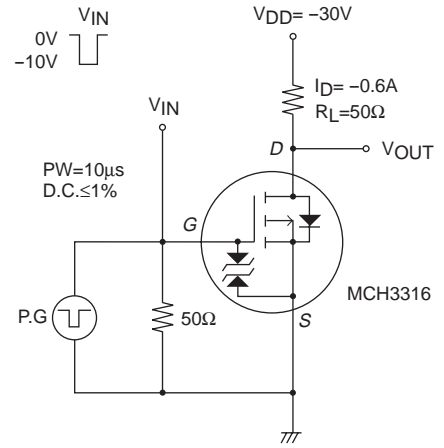
Package Dimensions

unit : mm

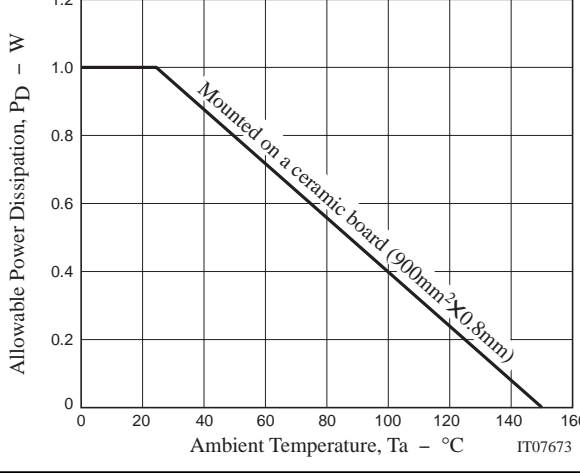
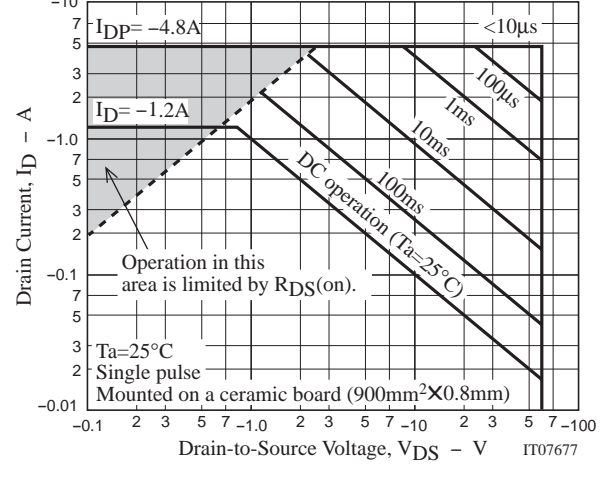
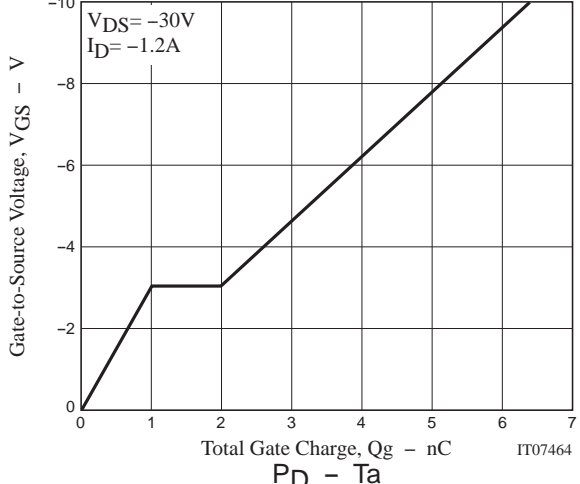
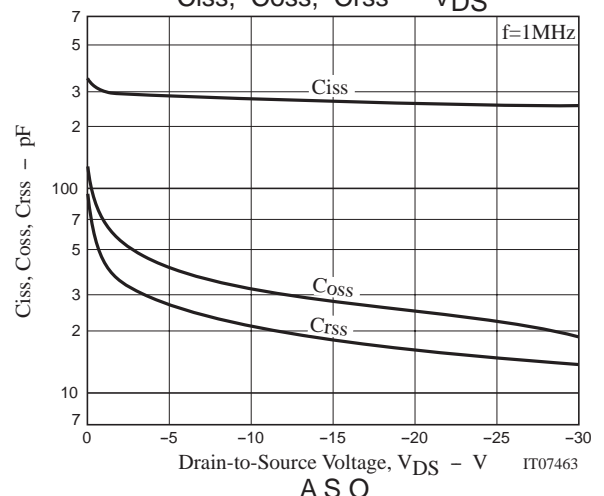
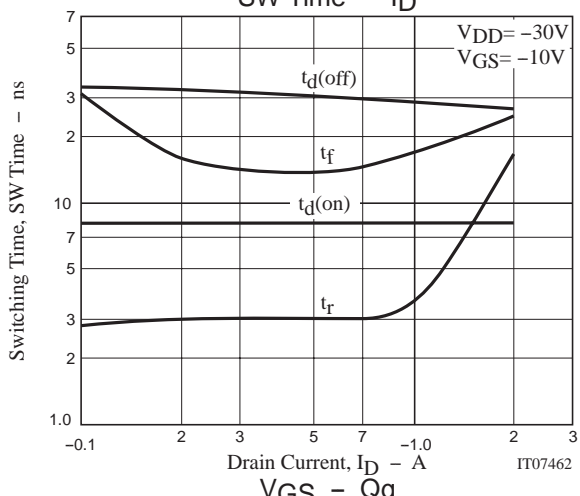
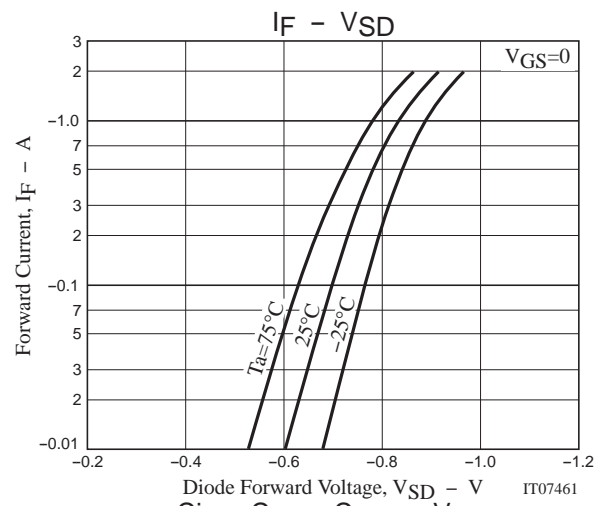
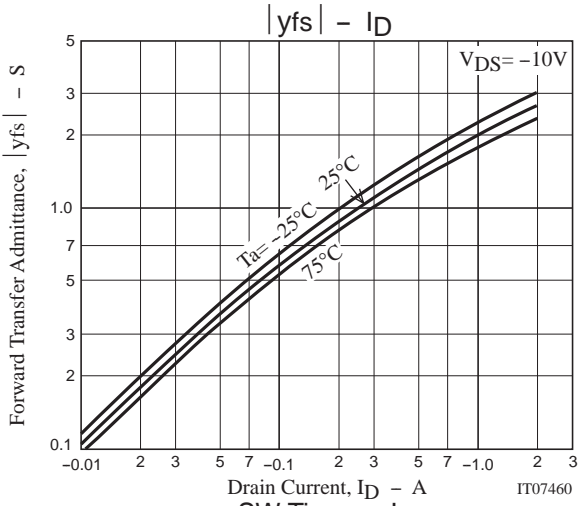
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Switching Time Test Circuit



MCH3316



Note on usage : Since the MCH3316 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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