



SANYO Semiconductors

DATA SHEET

MCH3376 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 1.8V drive.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		-1.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-6	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)	0.8	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	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0\text{V}$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -750\text{mA}$	1.14	1.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -750\text{mA}$, $V_{GS} = -4.5\text{V}$		185	241	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -300\text{mA}$, $V_{GS} = -2.5\text{V}$		275	385	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -100\text{mA}$, $V_{GS} = -1.8\text{V}$		410	615	$\text{m}\Omega$

Marking : QH

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MCH3376

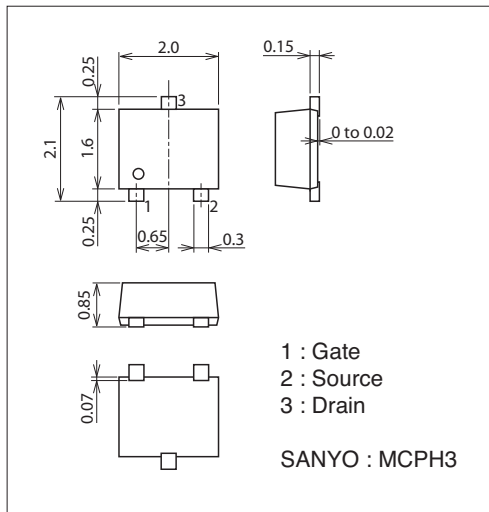
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS} = -10V, f = 1MHz$		120		pF
Output Capacitance	Coss	$V_{DS} = -10V, f = 1MHz$		26		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -10V, f = 1MHz$		20		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		5.3		ns
Rise Time	t_r	See specified Test Circuit.		9.7		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		16		ns
Fall Time	t_f	See specified Test Circuit.		14		ns
Total Gate Charge	Qg	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -1.5A$		1.7		nC
Gate-to-Source Charge	Qgs	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -1.5A$		0.28		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -1.5A$		0.47		nC
Diode Forward Voltage	VSD	$I_S = -1.5A, V_{GS} = 0V$		-0.89	-1.2	V

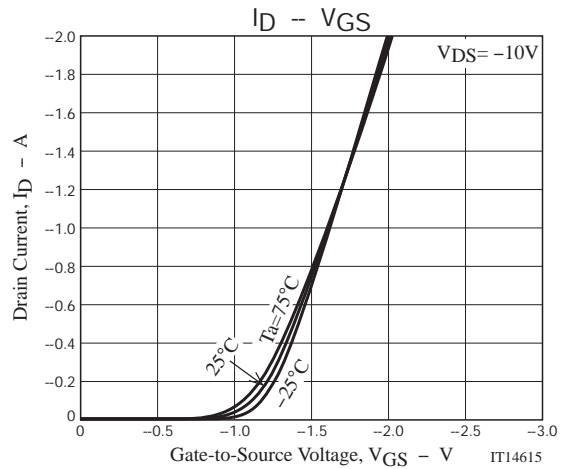
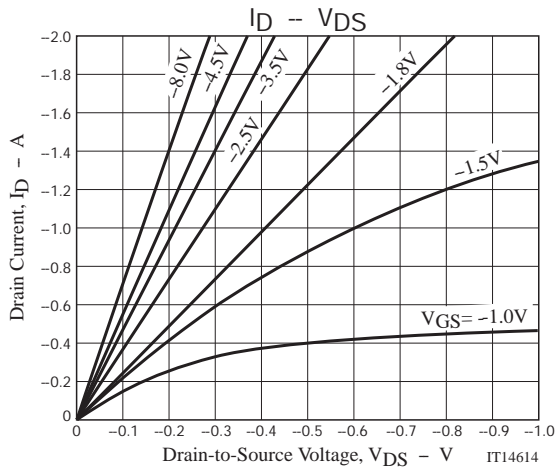
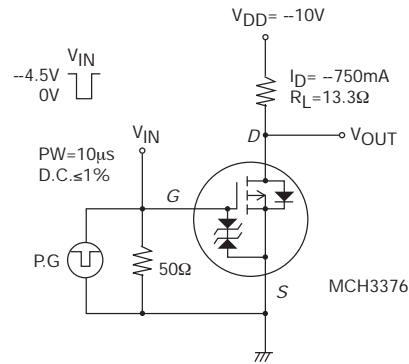
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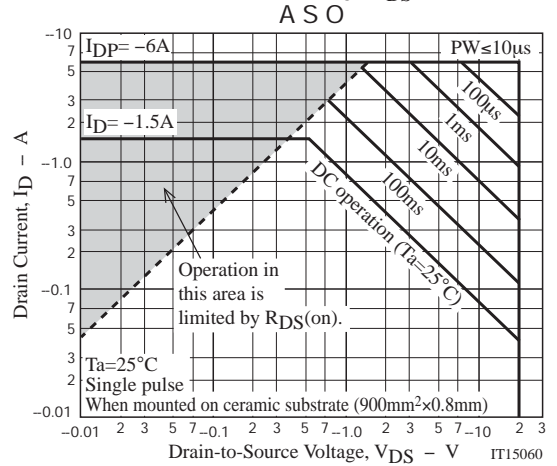
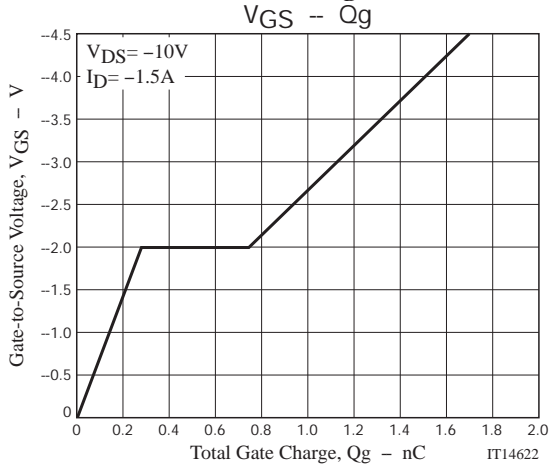
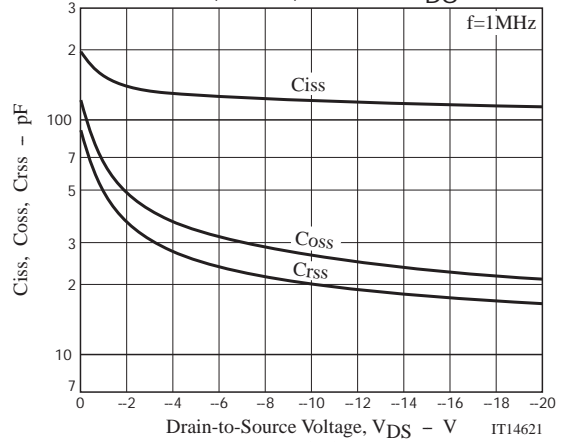
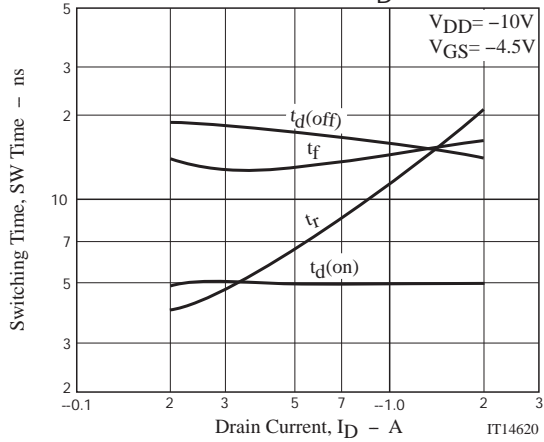
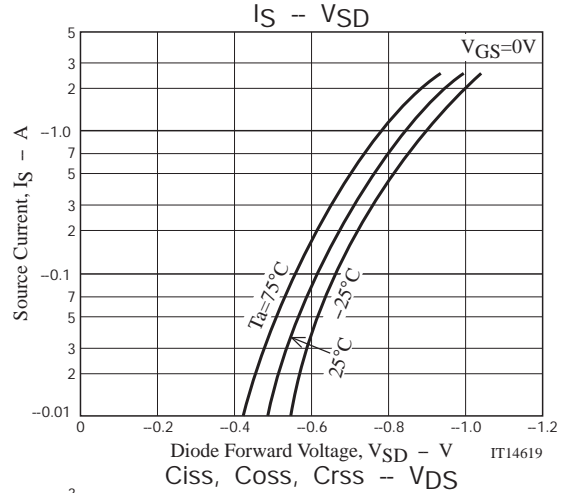
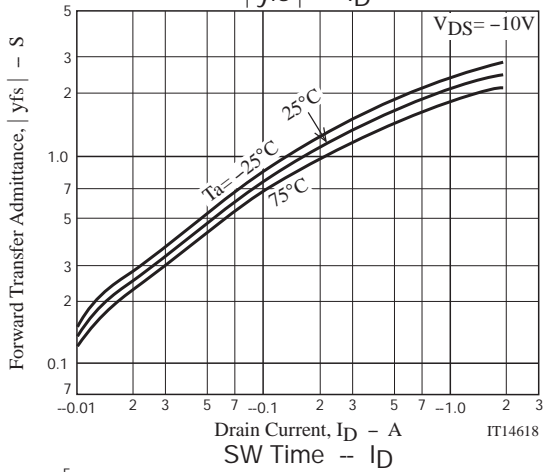
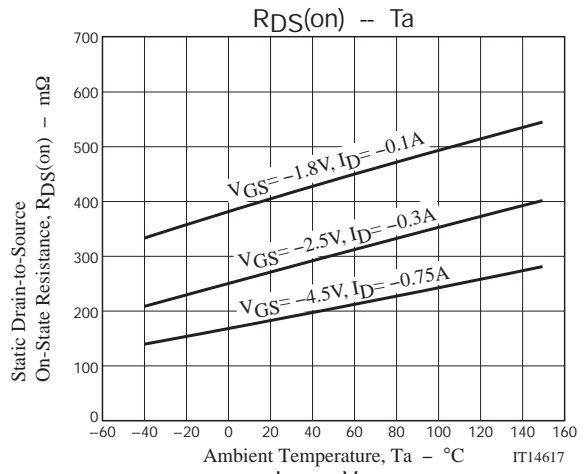
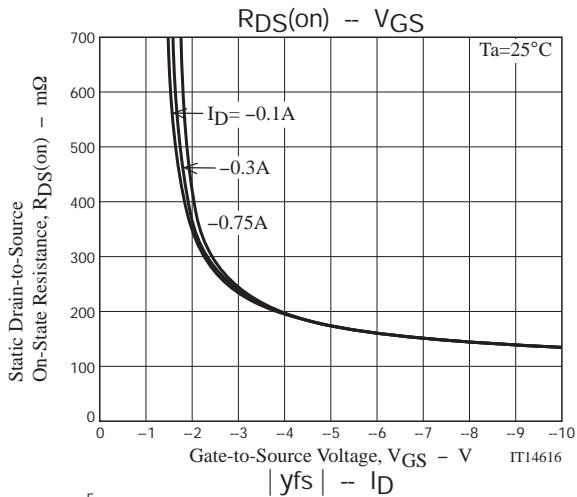
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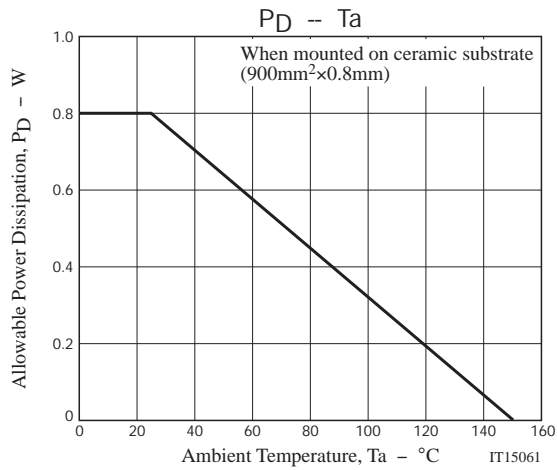
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Switching Time Test Circuit







Note on usage : Since the MCH3376 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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