



ON Semiconductor®

ON Semiconductor DATA SHEET

MCH3322 — 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}		-100	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		-0.6	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-2.4	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm ² ×0.8mm)	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	$V_{(BR)DSS}$	$I_D=-1\text{mA}$, $V_{GS}=0$	-100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-100\text{V}$, $V_{GS}=0$			-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} $	$V_{DS}=-10\text{V}$, $I_D=-300\text{mA}$	0.5	1.0		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-300\text{mA}$, $V_{GS}=-10\text{V}$		1.1	1.45	Ω
	$R_{DS(on)2}$	$I_D=-300\text{mA}$, $V_{GS}=-4\text{V}$		1.2	1.7	Ω
Input Capacitance	C_{iss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		245		pF
Output Capacitance	C_{oss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		16		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-20\text{V}$, $f=1\text{MHz}$		13		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8.5		ns
Rise Time	t_r	See specified Test Circuit.		2.7		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		36		ns
Fall Time	t_f	See specified Test Circuit.		16		ns

Marking : JX

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MCH3322

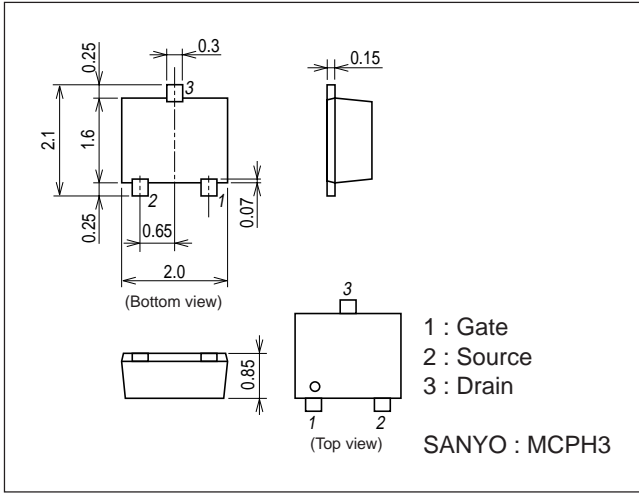
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-50V, V_{GS}=-10V, I_D=-0.6A$		7.0		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-50V, V_{GS}=-10V, I_D=-0.6A$		1.0		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-50V, V_{GS}=-10V, I_D=-0.6A$		1.0		nC
Diode Forward Voltage	VSD	$I_S=-0.6A, V_{GS}=0$	-0.85		-1.2	V

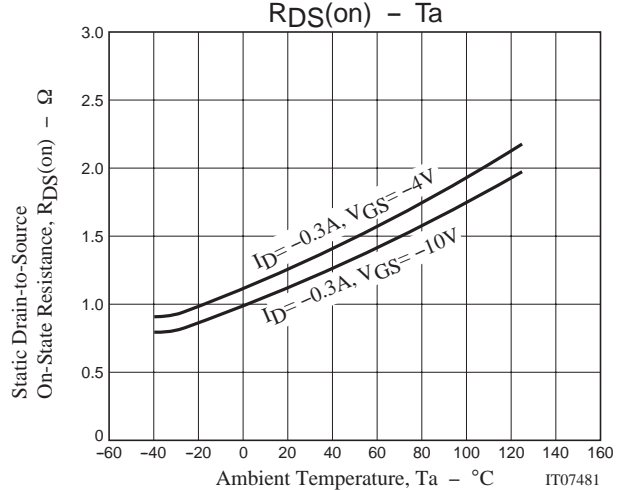
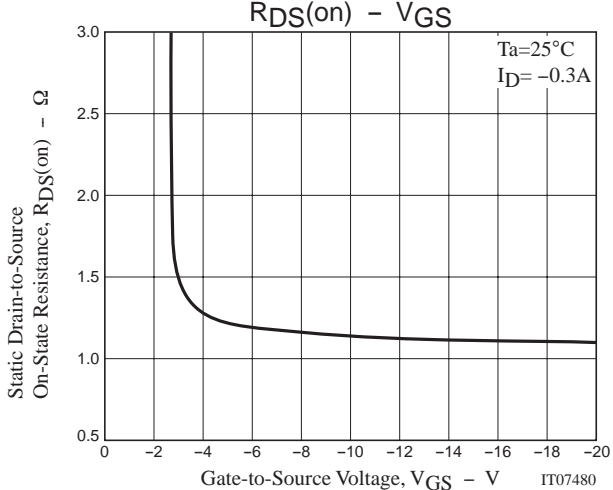
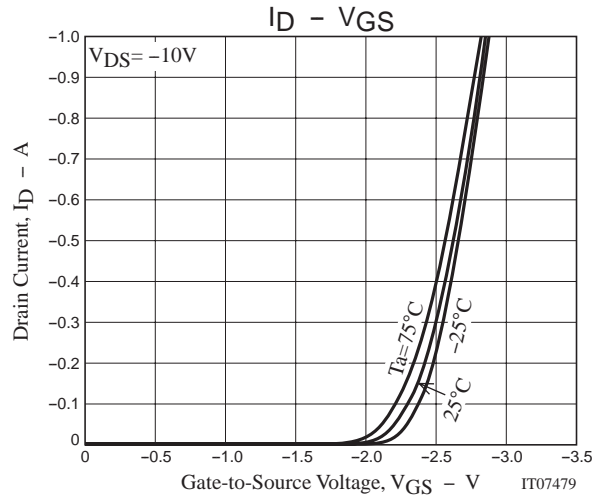
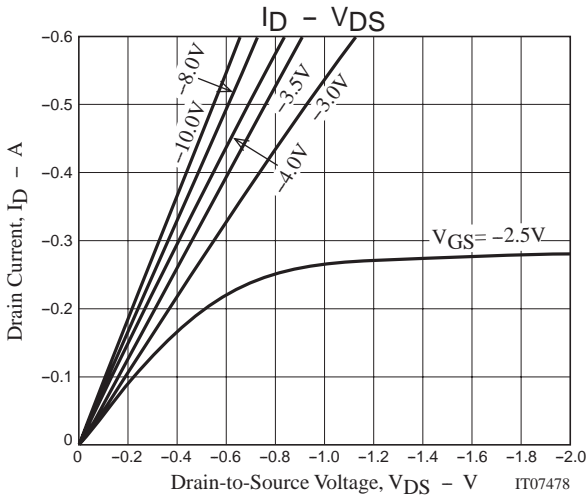
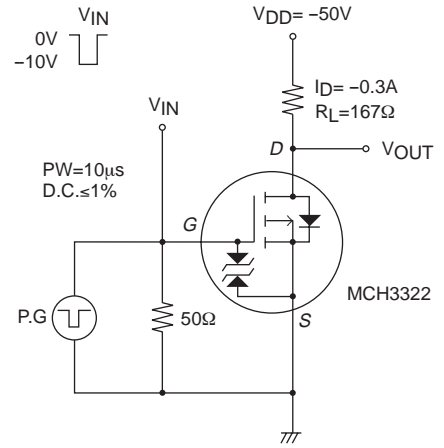
Package Dimensions

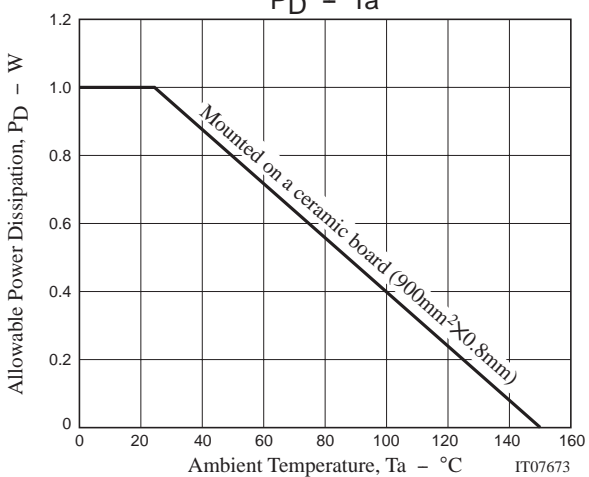
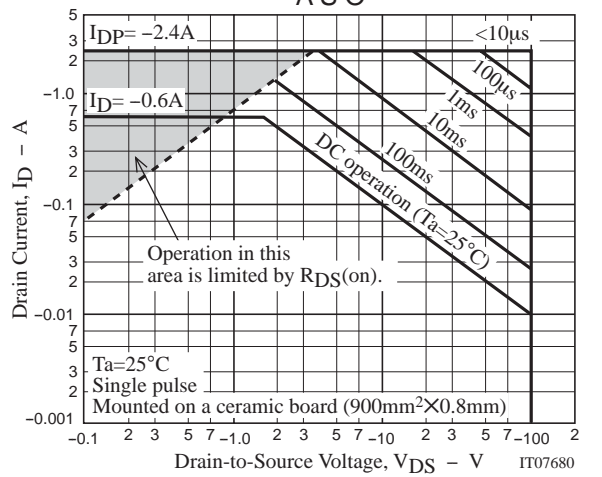
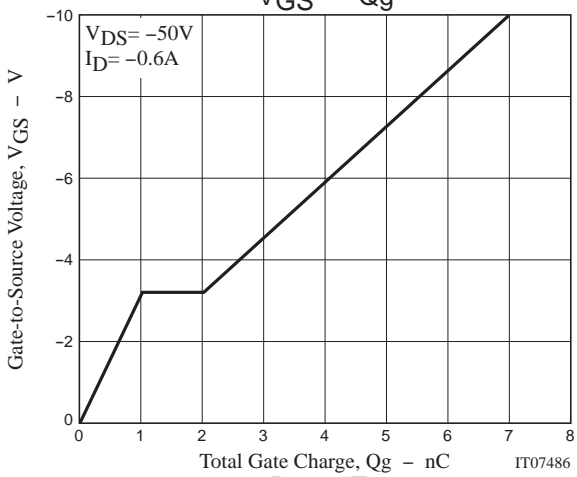
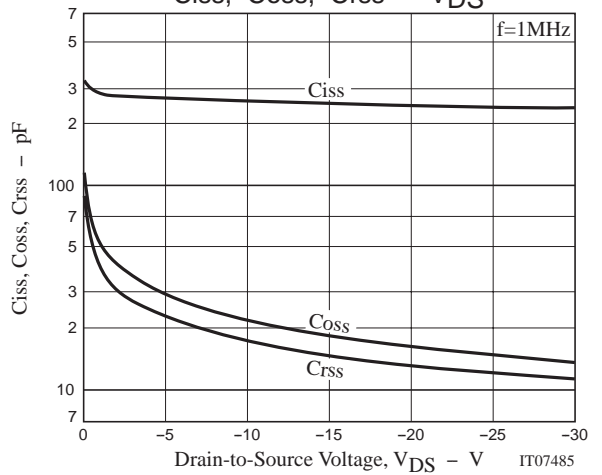
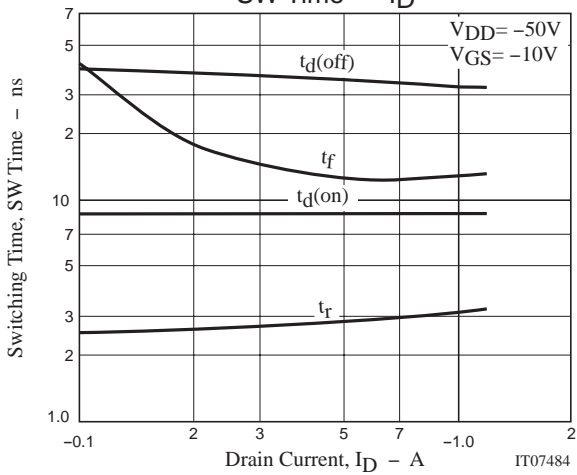
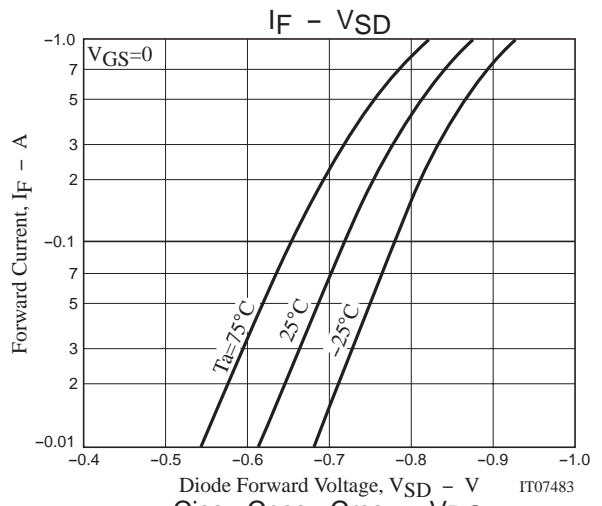
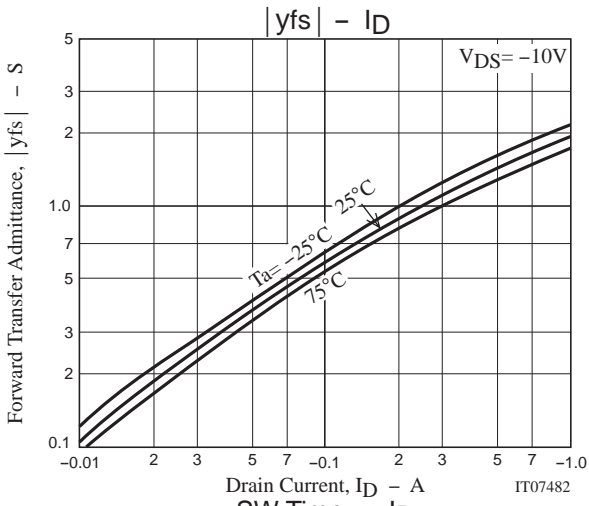
unit : mm

2167A



Switching Time Test Circuit





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