



ON Semiconductor®

Ordering number : ENN7994

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_{DSS}			-100	V
Gate-to-Source Voltage	V_{GSS}			± 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	$V_{GS(\text{off})}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-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	$R_{DS(\text{on})1}$	$I_D = -300\text{mA}$, $V_{GS} = -10\text{V}$		1.1	1.45	Ω
	$R_{DS(\text{on})2}$	$I_D = -300\text{mA}$, $V_{GS} = -4\text{V}$		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	$t_{d(\text{on})}$	See specified Test Circuit.		8.5		ns
Rise Time	t_r	See specified Test Circuit.		2.7		ns
Turn-OFF Delay Time	$t_{d(\text{off})}$	See specified Test Circuit.		36		ns
Fall Time	t_f	See specified Test Circuit.		16		ns

Marking : JX

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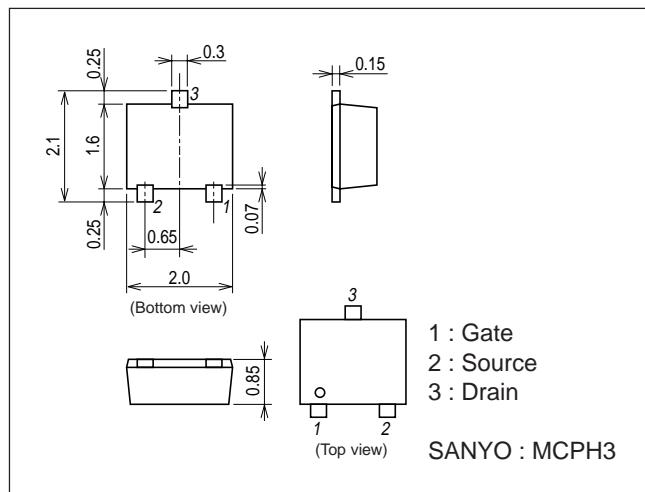
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Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Total Gate Charge	Qg	$V_{DS}=-50V, V_{GS}=-10V, I_D=-0.6A$			7.0	nC	
Gate-to-Source Charge	Qgs	$V_{DS}=-50V, V_{GS}=-10V, I_D=-0.6A$			1.0	nC	
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-50V,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

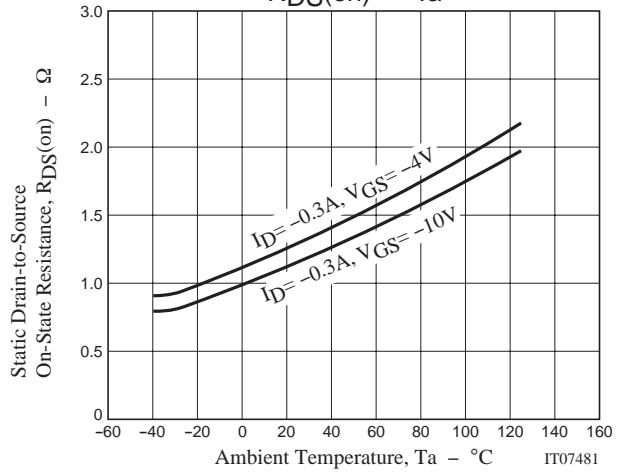
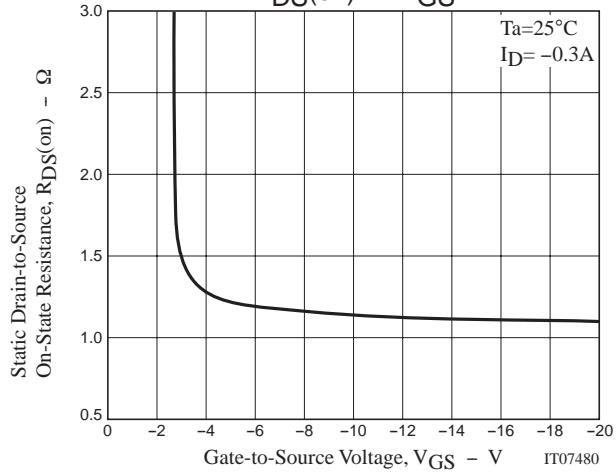
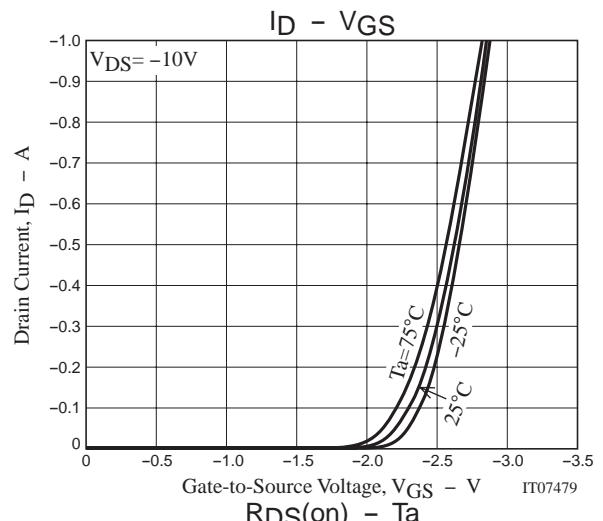
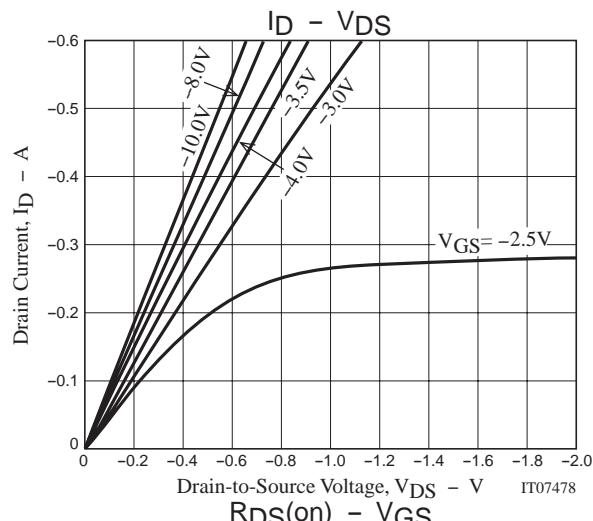
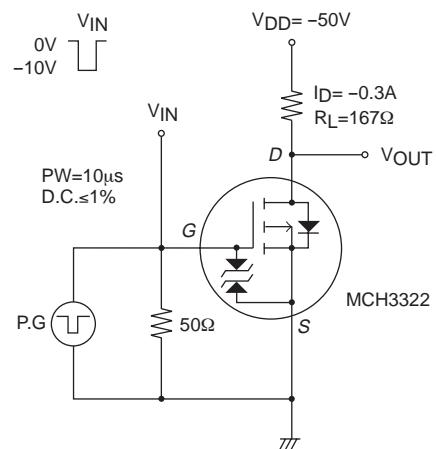
Package Dimensions

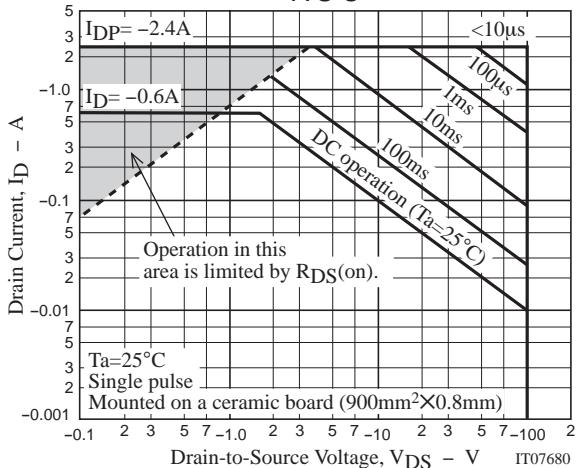
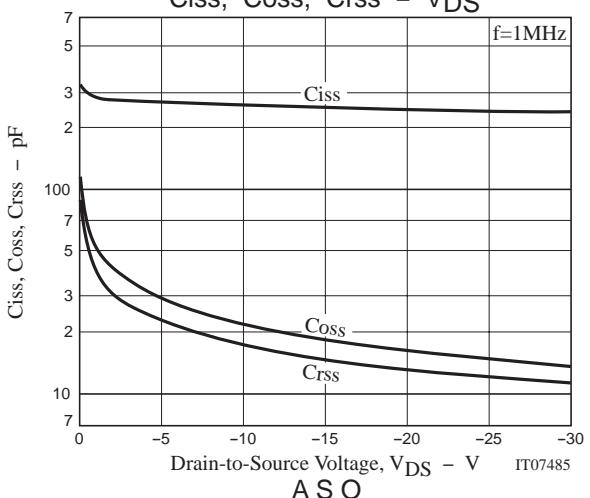
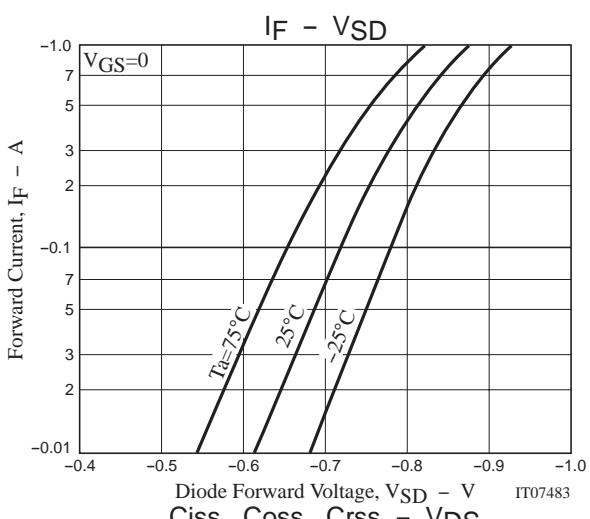
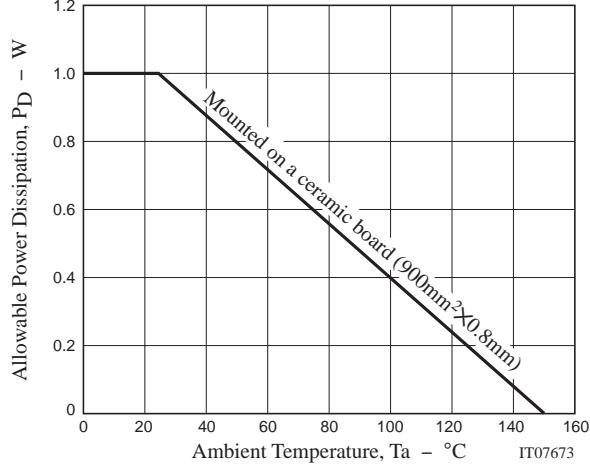
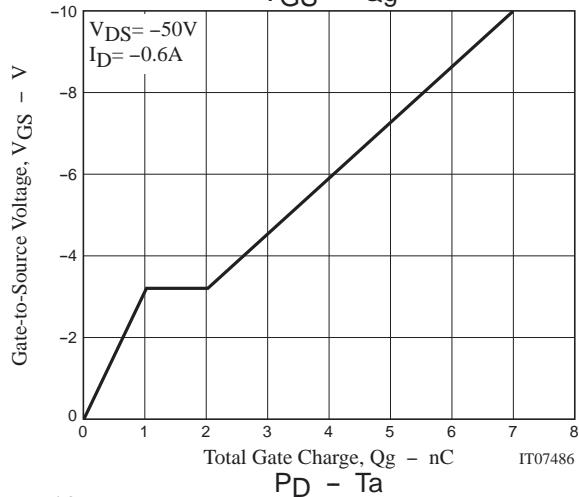
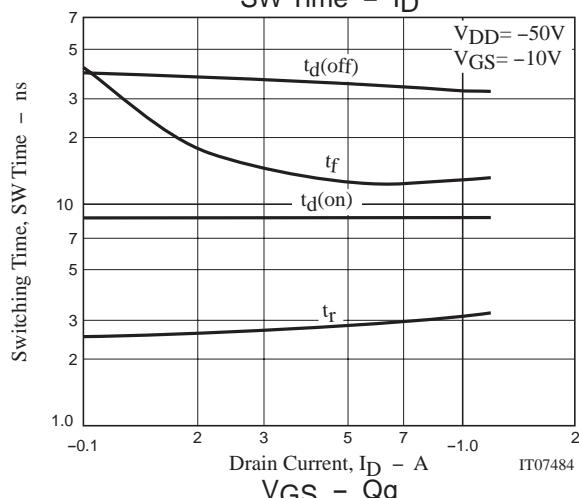
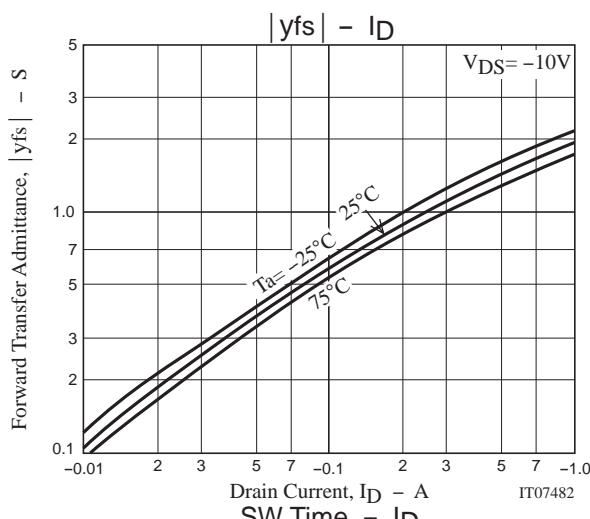
unit : mm

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Switching Time Test Circuit





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