

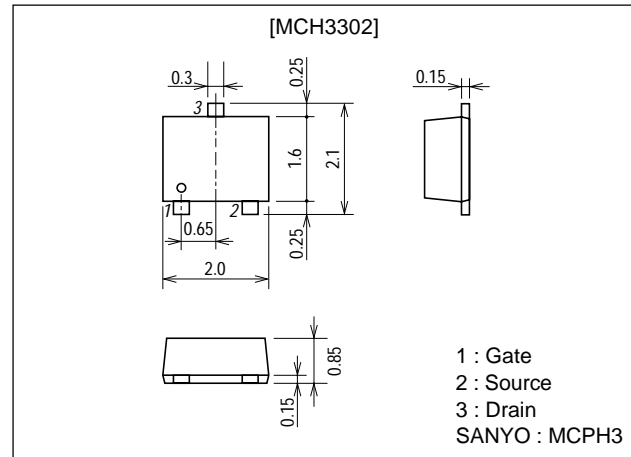
**MCH3302****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**

unit:mm

2167

**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)	$I_D$		-1	A
Drain Current (pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-4	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm <sup>2</sup> ×0.8mm)	1	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-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	$I_{DSS}$	$V_{DS} = -30V$ , $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$ , $I_D = -1mA$	-1.0		-2.5	V
Forward Transfer Admittance	yfs	$V_{DS} = -10V$ , $I_D = -500mA$	670	950		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -500mA$ , $V_{GS} = -10V$		350	460	mΩ
	$R_{DS(on)2}$	$I_D = -300mA$ , $V_{GS} = -4V$		680	950	mΩ
Input Capacitance	Ciss	$V_{DS} = -10V$ , f=1MHz		90		pF
Output Capacitance	Coss	$V_{DS} = -10V$ , f=1MHz		50		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -10V$ , f=1MHz		20		pF

Marking : JB

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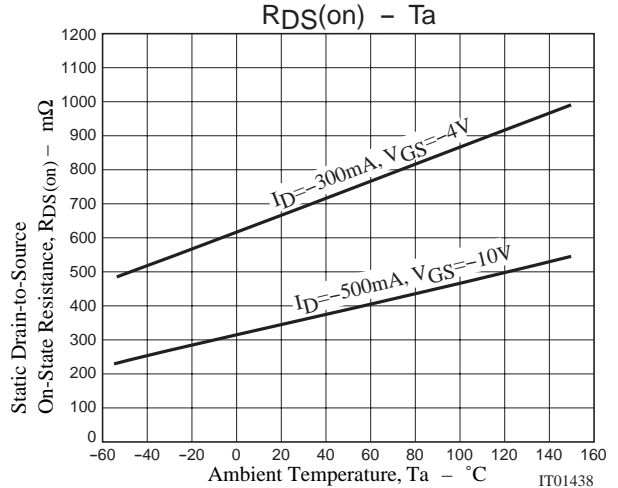
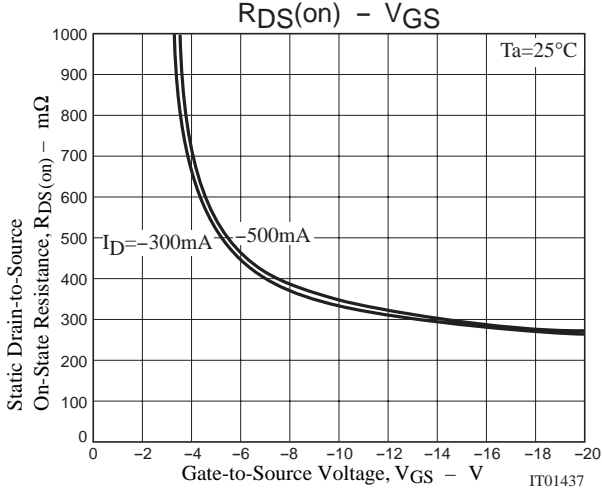
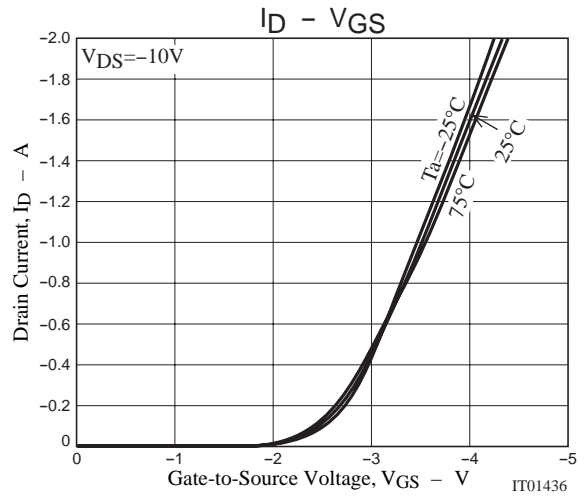
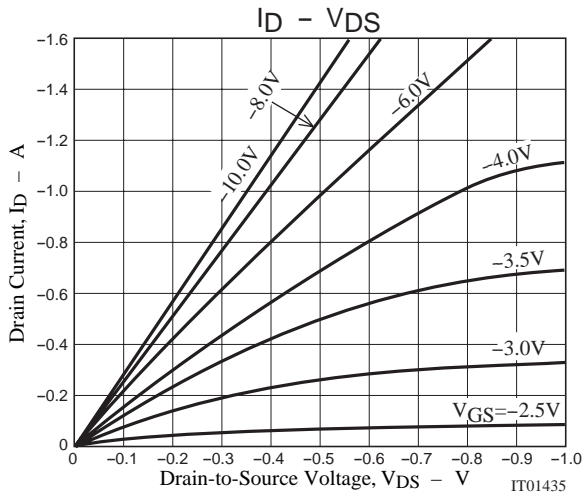
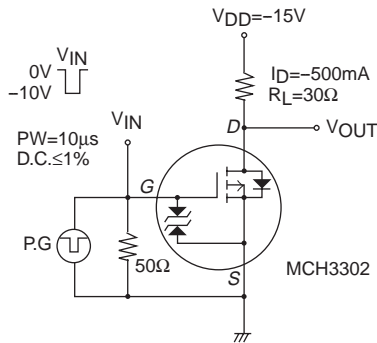
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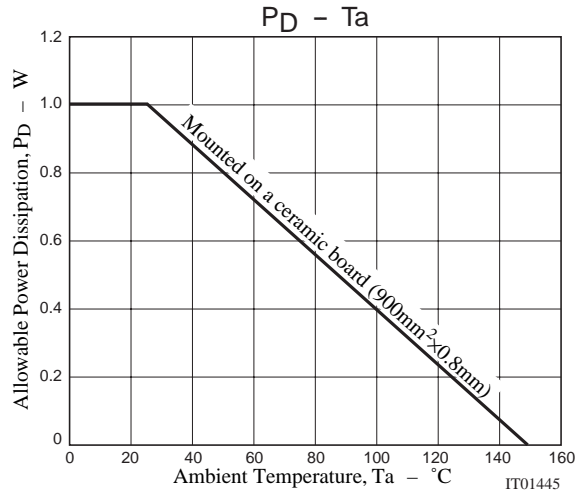
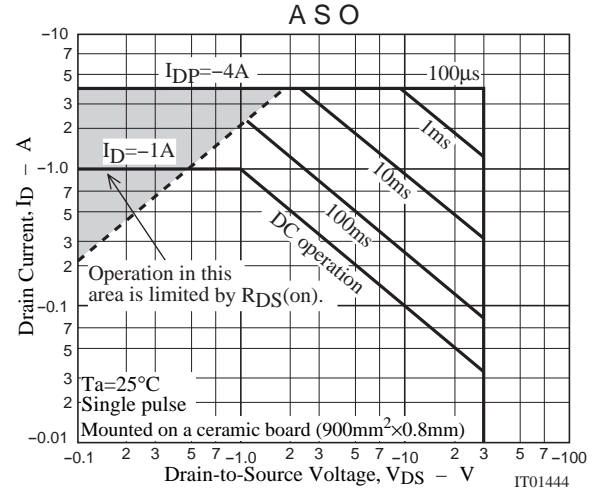
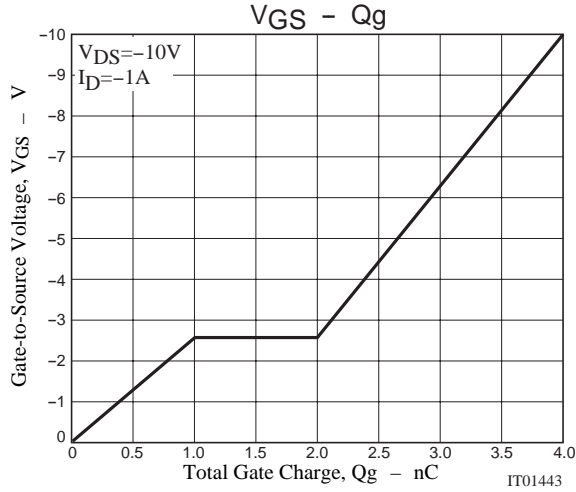
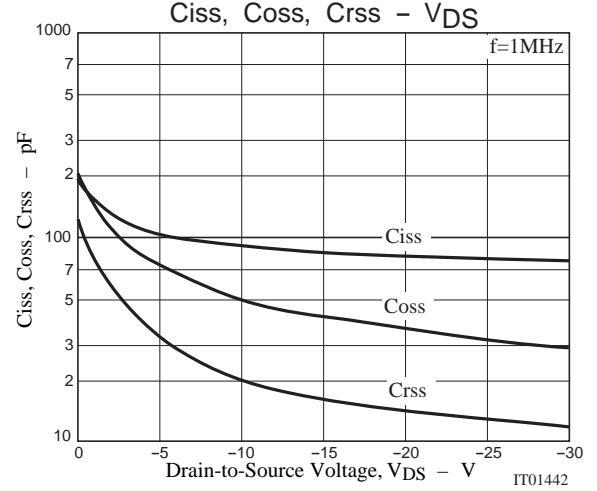
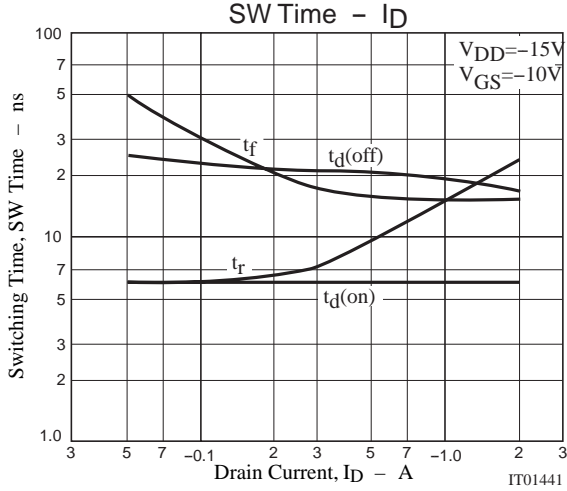
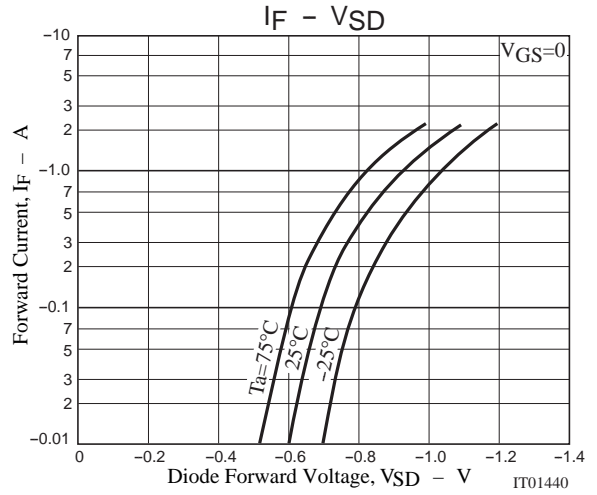
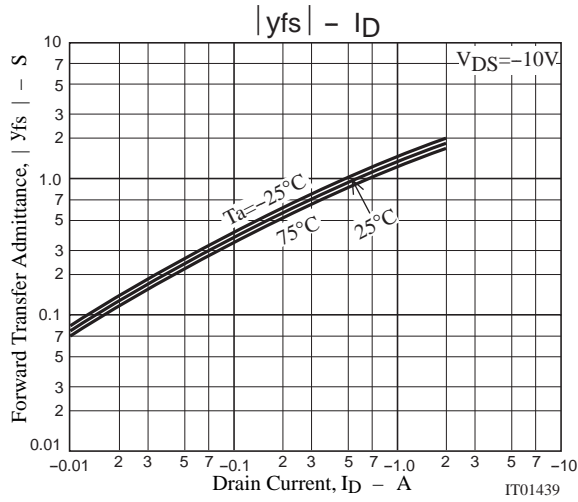
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		6		ns
Rise Time	$t_r$	See specified Test Circuit		9.5		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		20		ns
Fall Time	$t_f$	See specified Test Circuit		16		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		4		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		1		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1A$		1		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-1A, V_{GS}=0$		-0.9	-1.5	V

## Switching Time Test Circuit



# MCH3302



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