

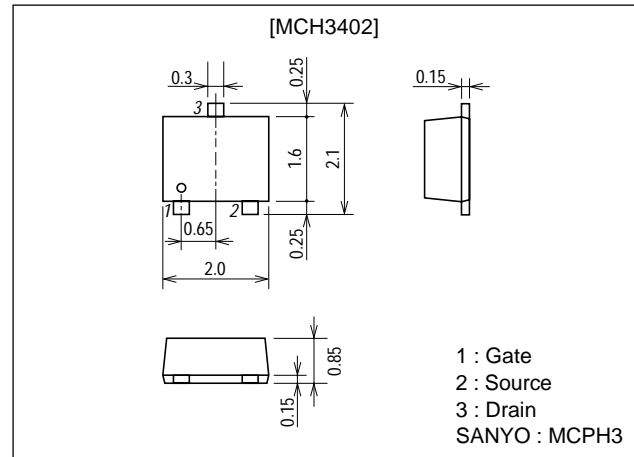
**MCH3402****Ultrahigh-Speed Switching Applications****Features**

- 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_{DS}		30	V
Gate-to-Source Voltage	V_{GS}		±20	V
Drain Current (DC)	I_D		1.4	A
Drain Current (pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	5.6	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm ² ×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}	$V_{GS}=±16V, V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.0		2.4	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=700mA$	1.1	1.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=700mA, V_{GS}=10V$		220	280	mΩ
	$R_{DS(on)2}$	$I_D=400mA, V_{GS}=4V$		340	480	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	$V_{DS}=10V, f=1MHz$		22		pF

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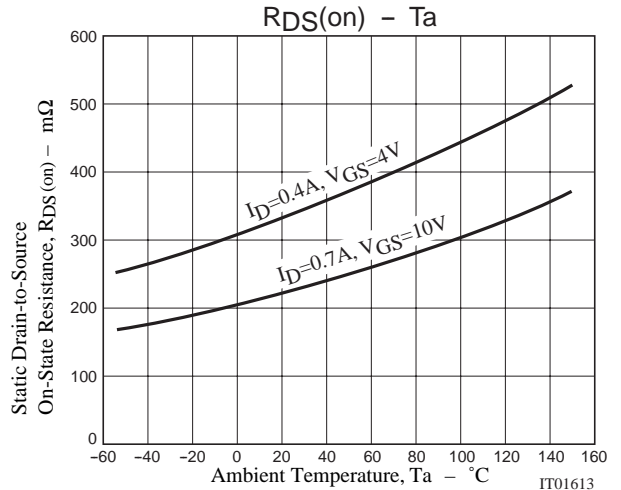
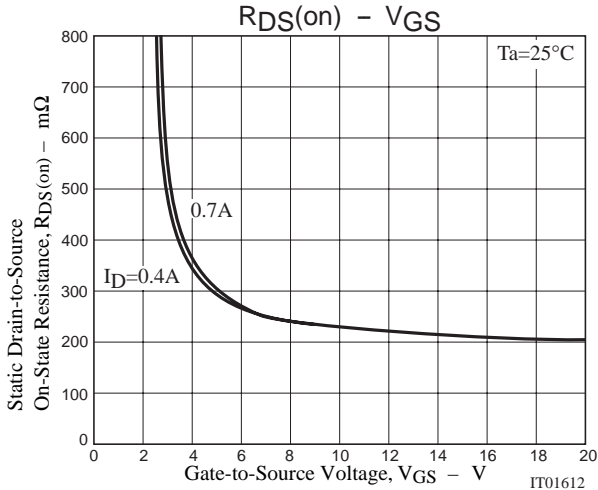
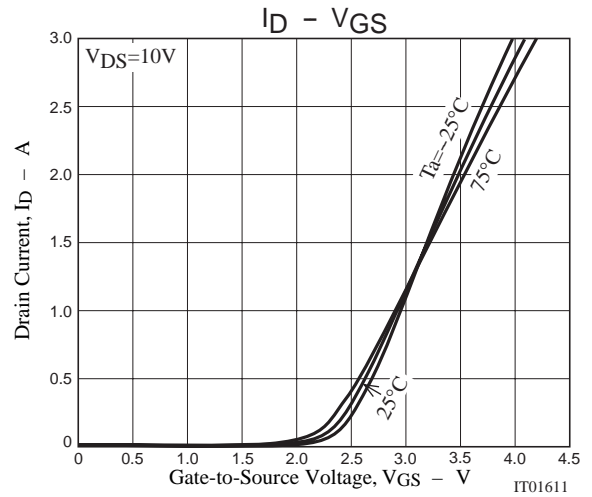
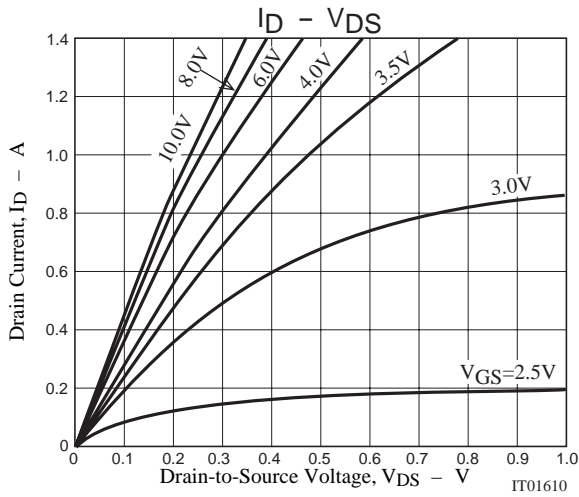
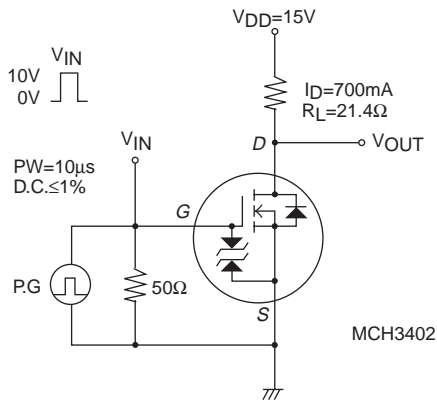
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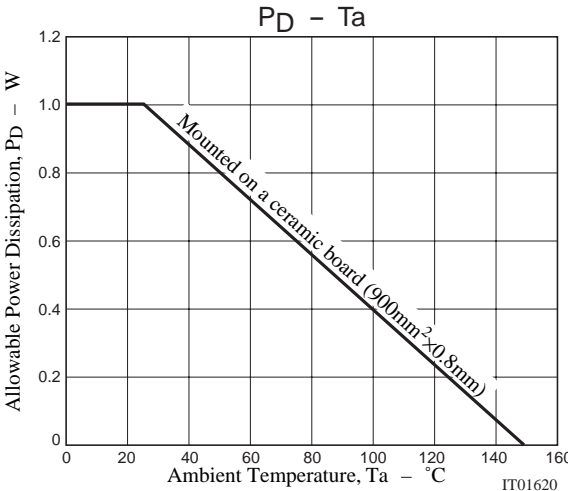
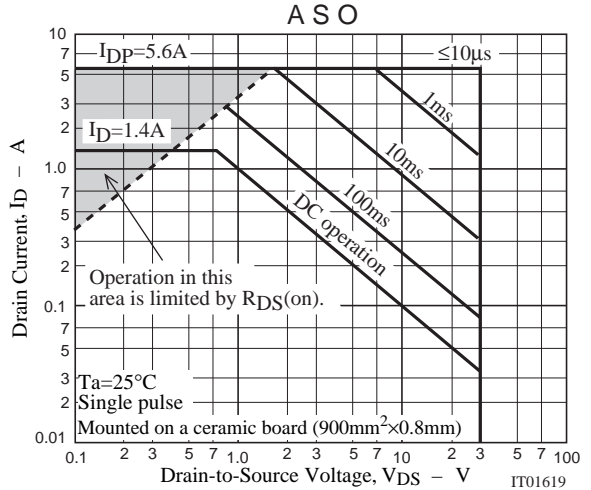
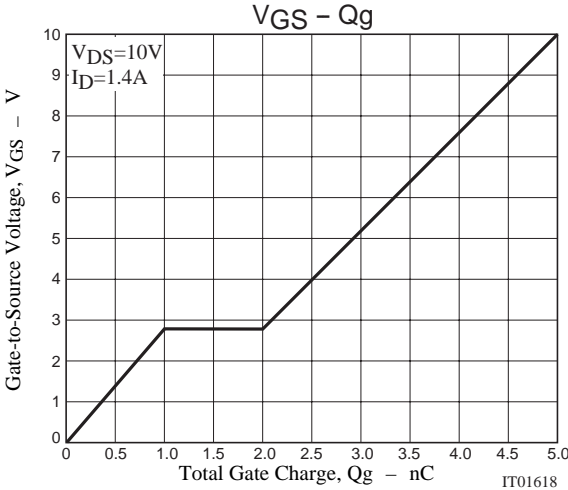
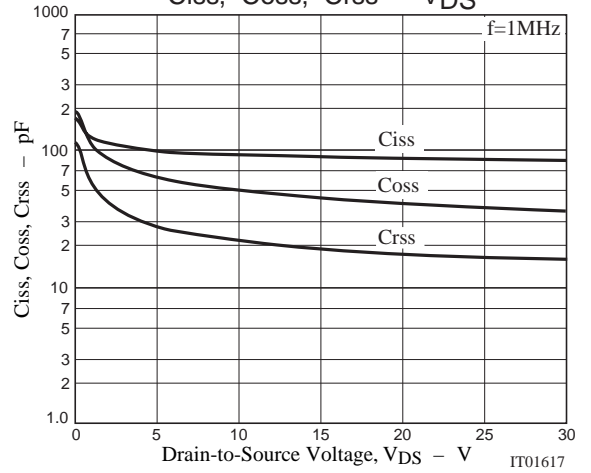
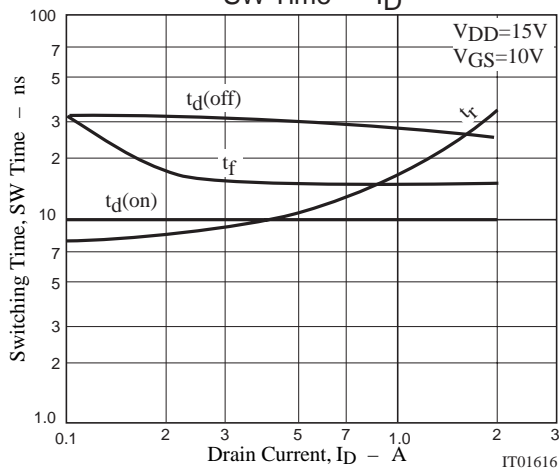
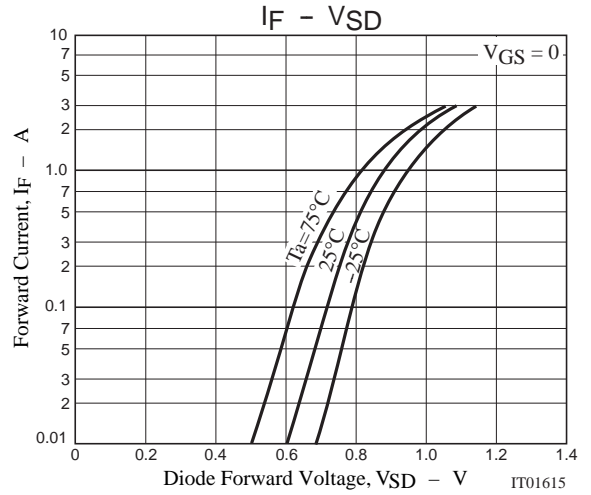
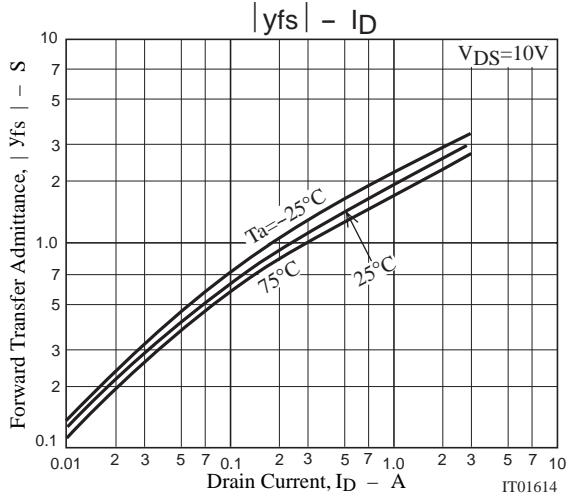
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		13		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		29		ns
Fall Time	t_f	See specified Test Circuit		15		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=1.4A$		5		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=1.4A$		1		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=1.4A$		1		nC
Diode Forward Voltage	V_{SD}	$I_S=1.4A, V_{GS}=0$		0.9	1.2	V

Switching Time Test Circuit



MCH3402



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