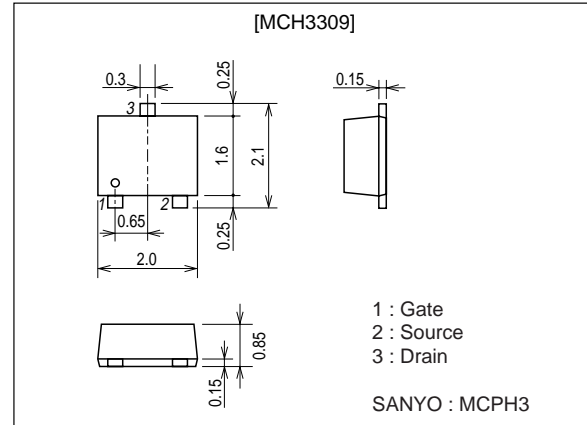


**MCH3309****Ultrahigh-Speed Switching Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensionsunit : mm
2167**Specifications****Absolute Maximum Ratings** at Ta=25°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≤10μs, duty cycles≤1%	-6.0	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²X0.8mm)	0.9	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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	-20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-0.4		-1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-0.8A	1.6	2.3		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-0.8A, V _{GS} =-4V		180	235	mΩ
	R _{DS(on)2}	I _D =-0.4A, V _{GS} =-2.5V		240	340	mΩ
Input Capacitance	C _{iss}	V _{DS} =-10V, f=1MHz		290		pF
Output Capacitance	C _{oss}	V _{DS} =-10V, f=1MHz		40		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-10V, f=1MHz		25		pF

Marking : JJ

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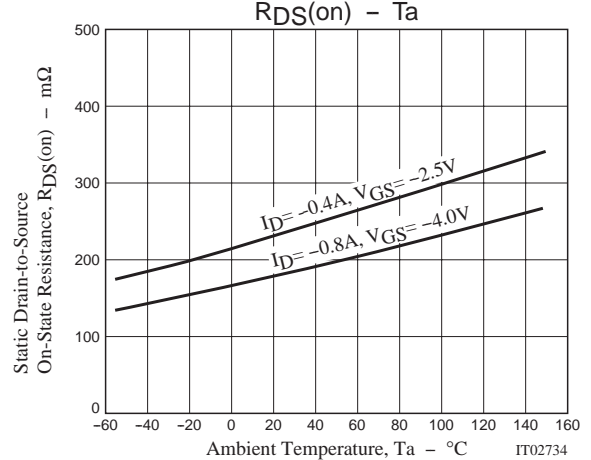
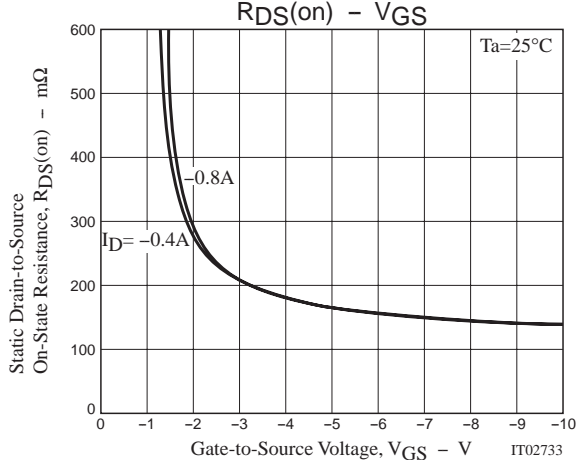
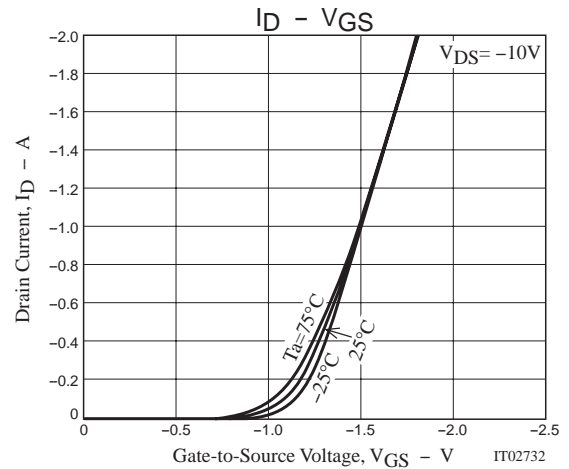
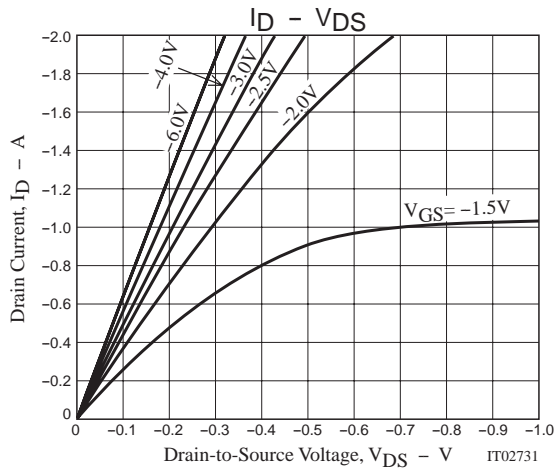
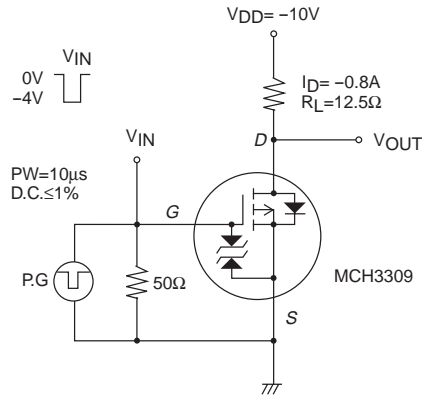
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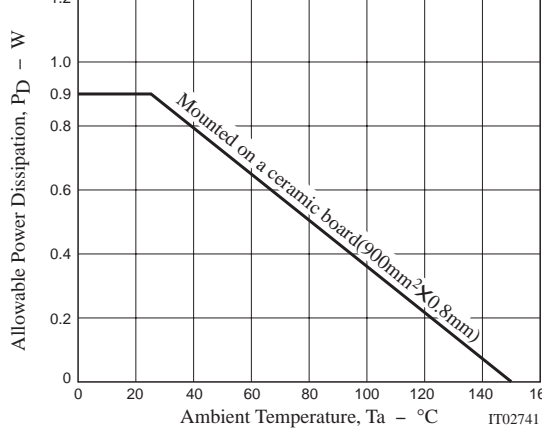
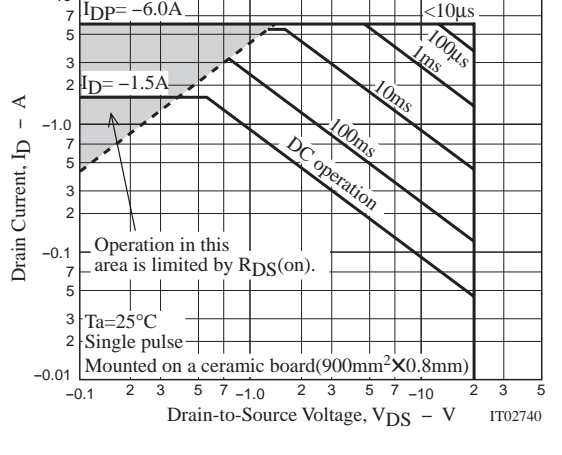
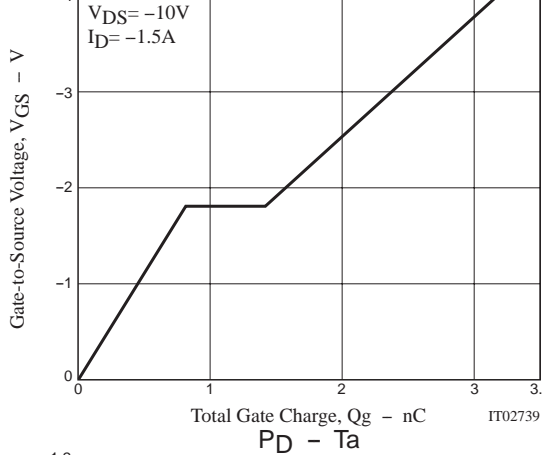
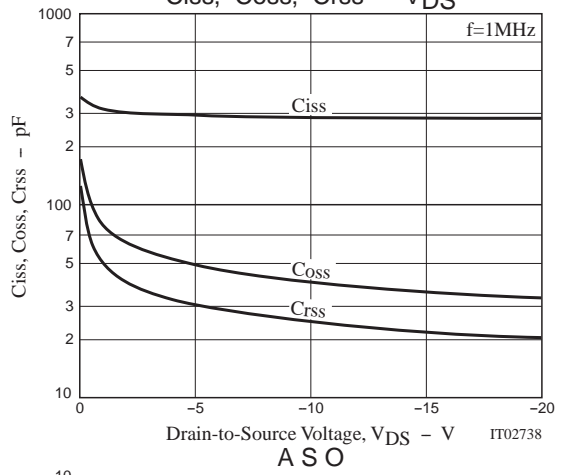
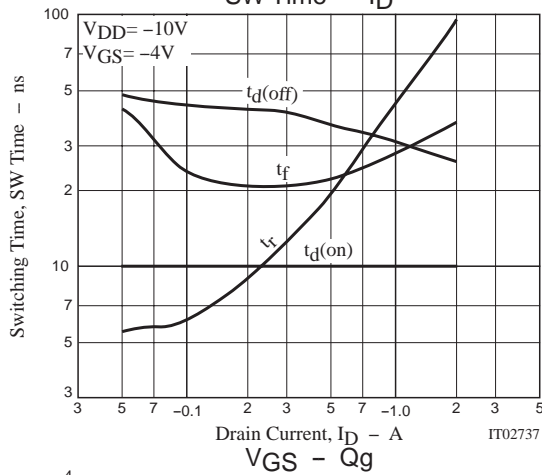
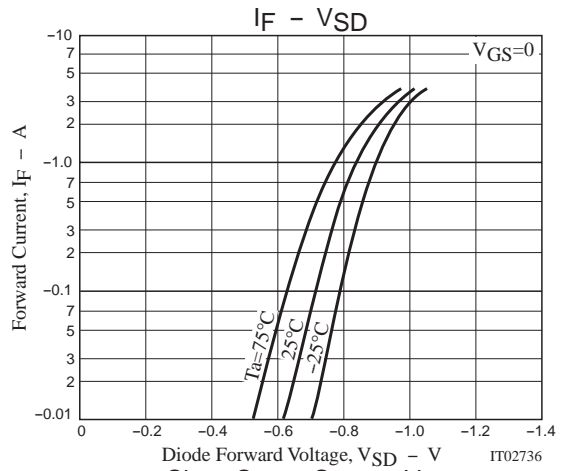
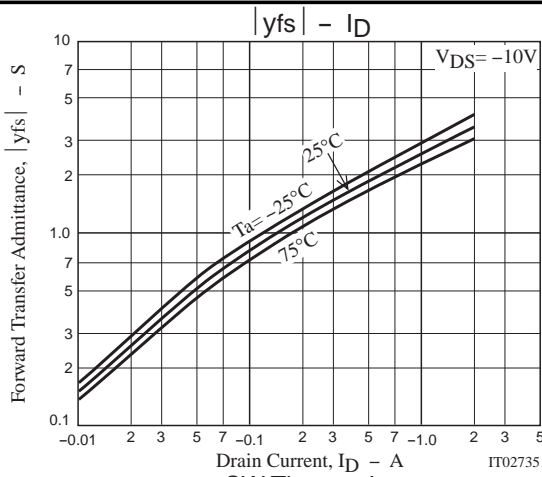
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		35		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		32		ns
Fall Time	t_f	See specified Test Circuit		27		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-4V, I_D=-1.5A$		3.2		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-4V, I_D=-1.5A$		0.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-4V, I_D=-1.5A$		0.6		nC
Diode Forward Voltage	V_{SD}	$I_S=-1.5A, V_{GS}=0$		-0.87	-1.5	V

Switching Time Test Circuit



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