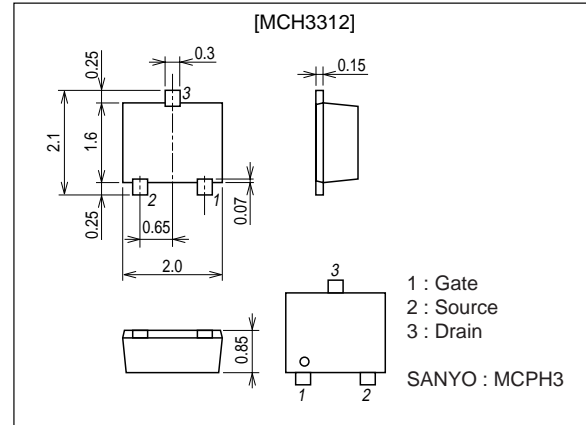


**MCH3312****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**
 unit : mm  
 2167A
**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-2	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-8	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm)	1	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1A	1.4	2.0		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-10V		110	145	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.5A, V <sub>GS</sub> =-4V		205	290	mΩ

Marking : JM

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**SANYO Electric Co.,Ltd. Semiconductor Company**  
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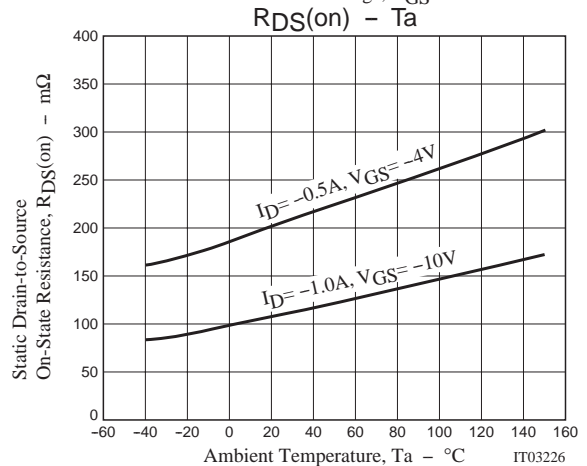
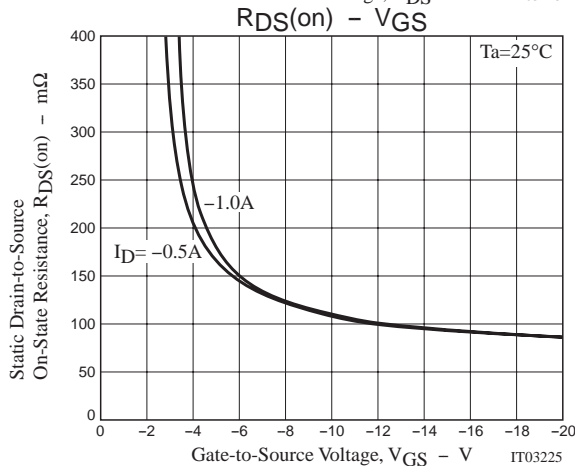
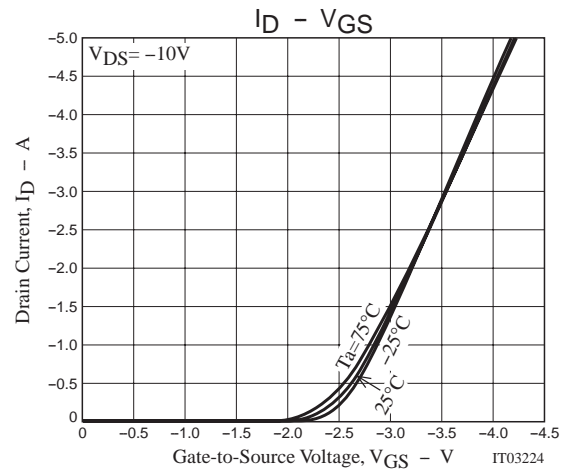
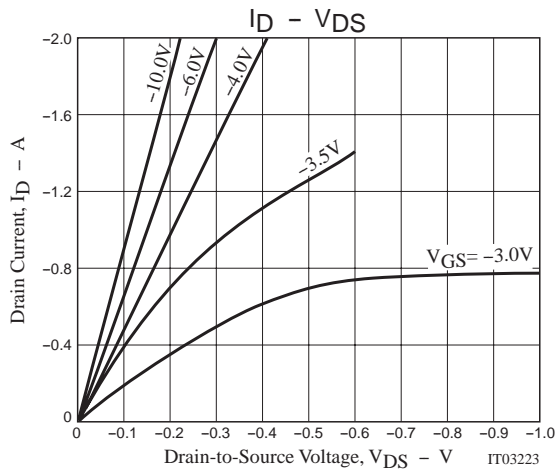
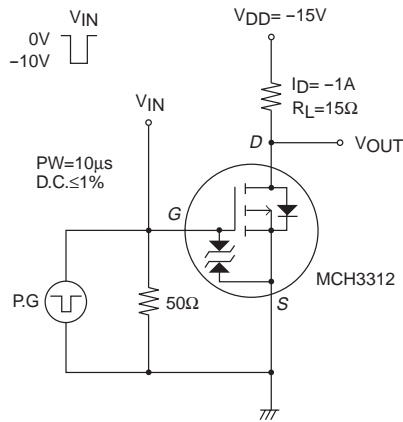
71801 TS IM TA-3098 No.7009-1/4

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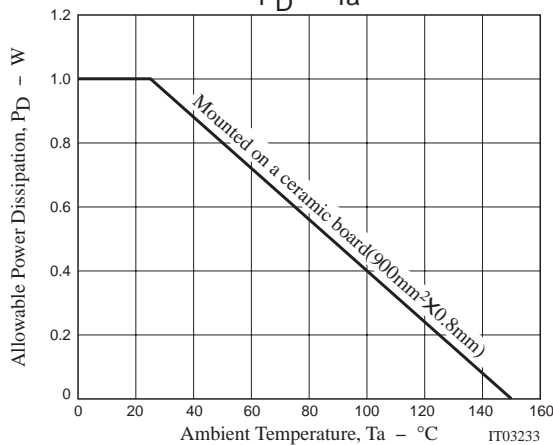
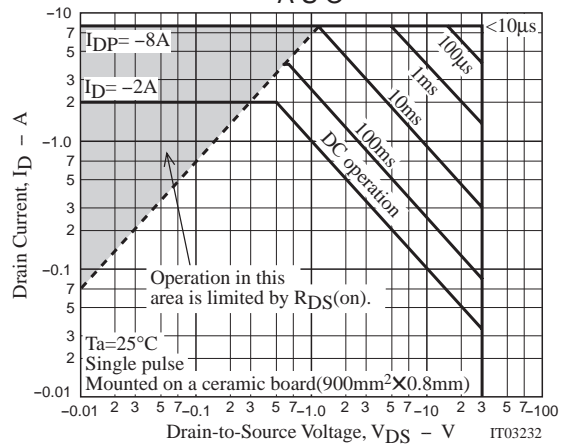
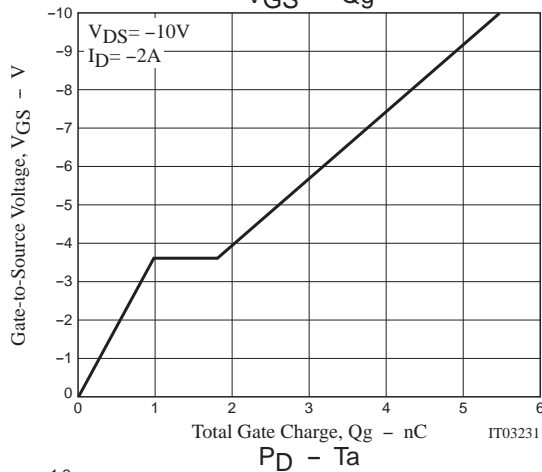
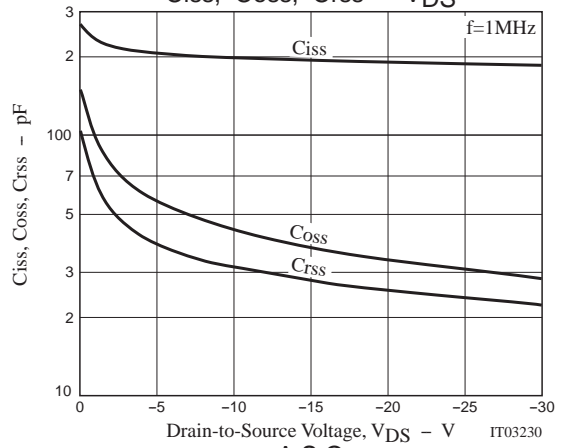
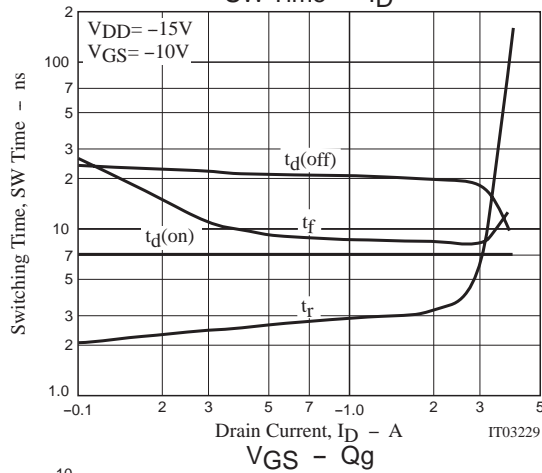
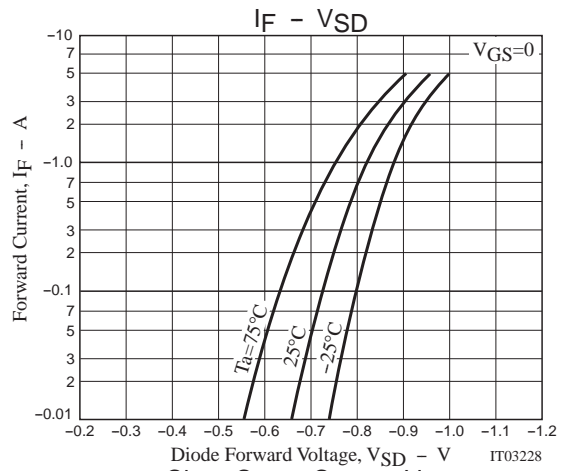
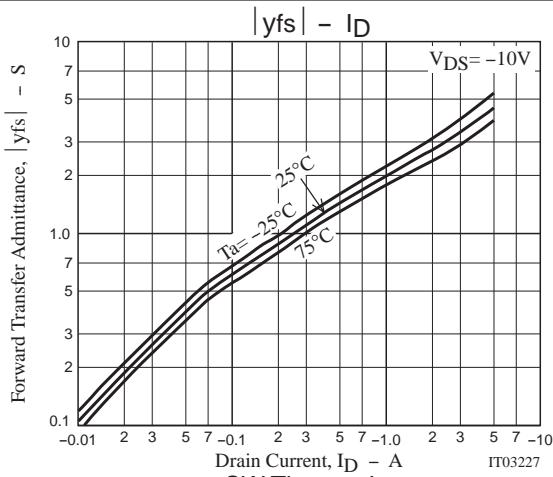
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-10V, f=1MHz		200		pF
Output Capacitance	Coss	V <sub>DS</sub> =-10V, f=1MHz		47		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-10V, f=1MHz		32		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		7.2		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		2.9		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		21		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		8.7		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2A		5.5		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2A		0.98		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2A		0.82		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-2A, V <sub>GS</sub> =0		-0.85	-1.5	V

## Switching Time Test Circuit



No.7009-2/4

# MCH3312



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