



# MCH3318

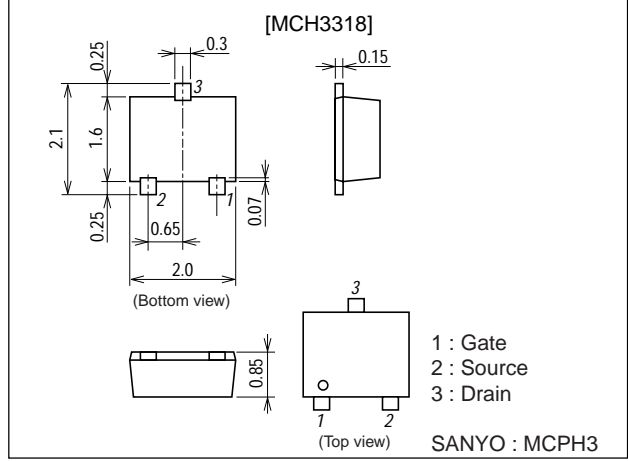
## Ultrahigh-Speed Switching Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V 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>		-12	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±8	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)	0.9	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(BR)DSS	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-12			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-12V, V <sub>GS</sub> =0			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±6.4V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1mA	-0.3		-1.0	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1A	2.0	2.9		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4.5V		110	145	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.5A, V <sub>GS</sub> =-2.5V		160	225	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-0.2A, V <sub>GS</sub> =-1.8V		220	330	mΩ

Marking : JT

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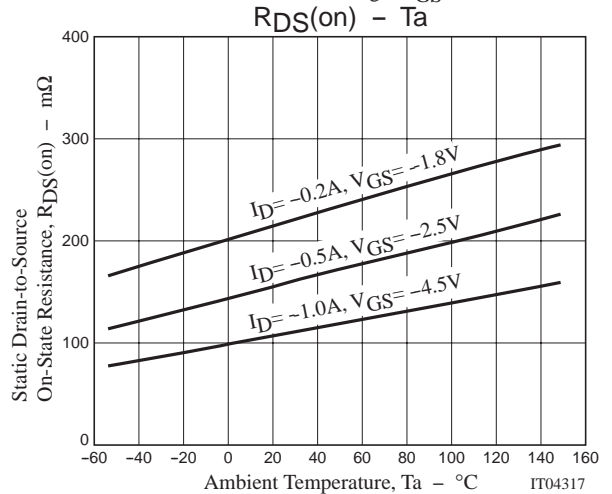
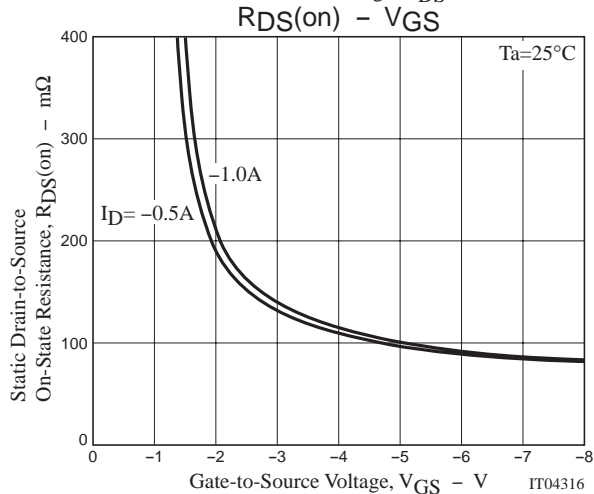
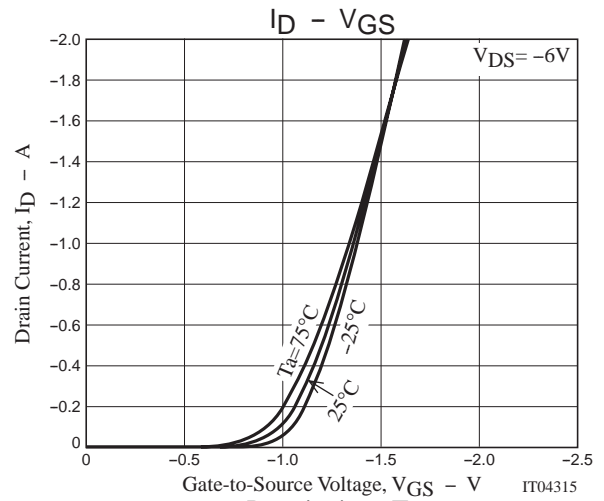
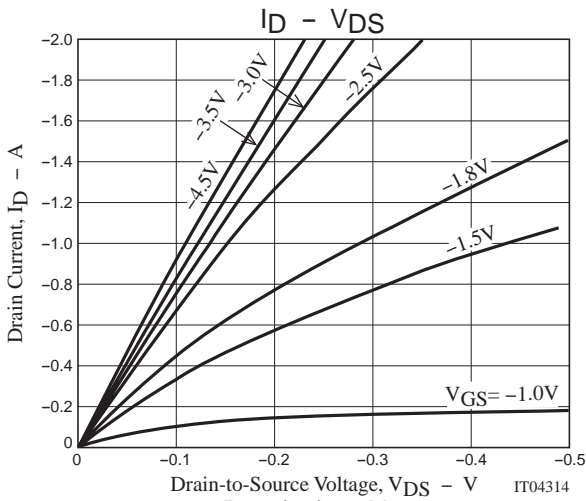
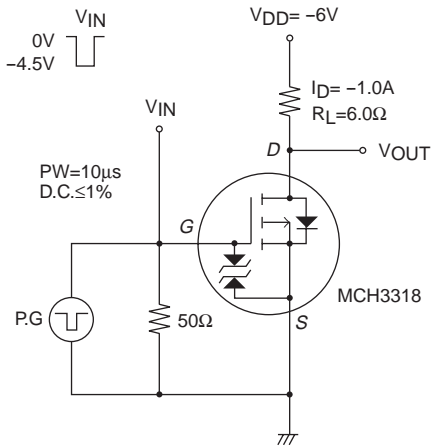
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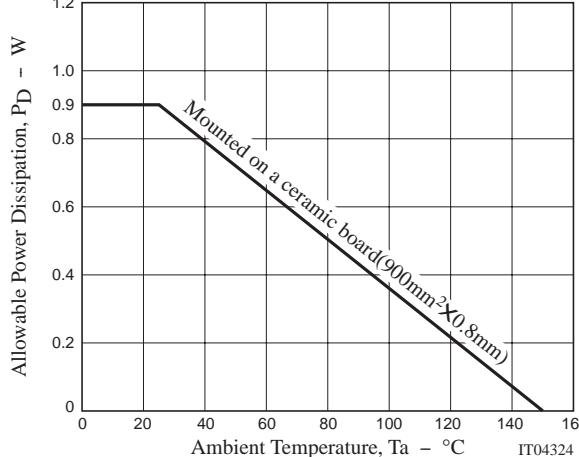
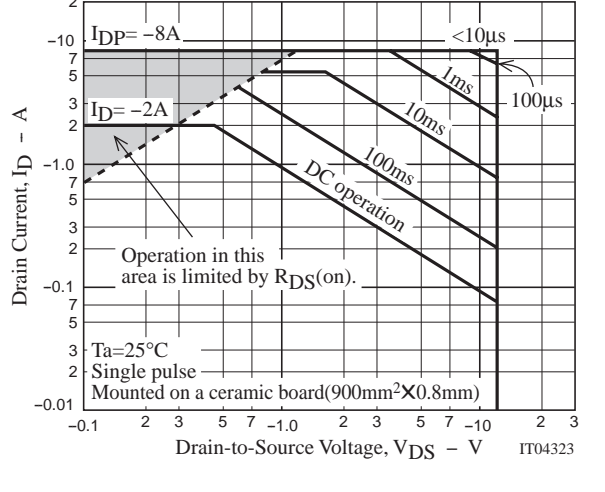
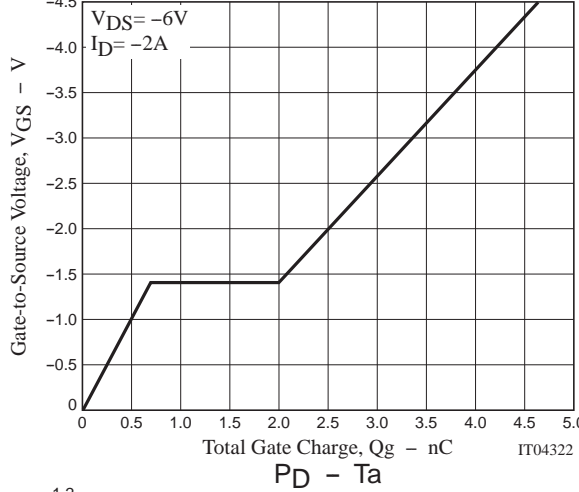
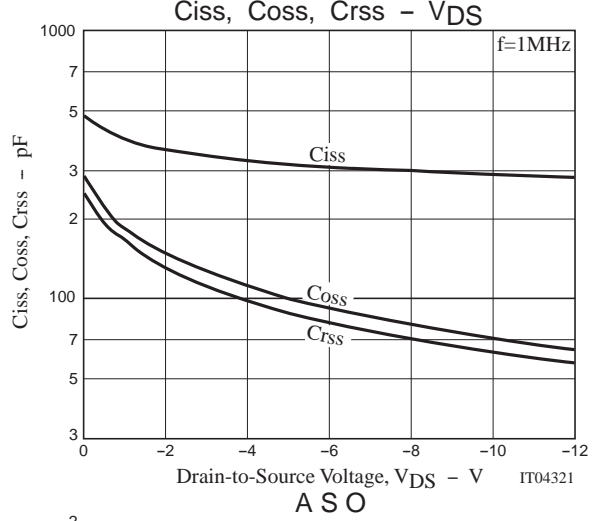
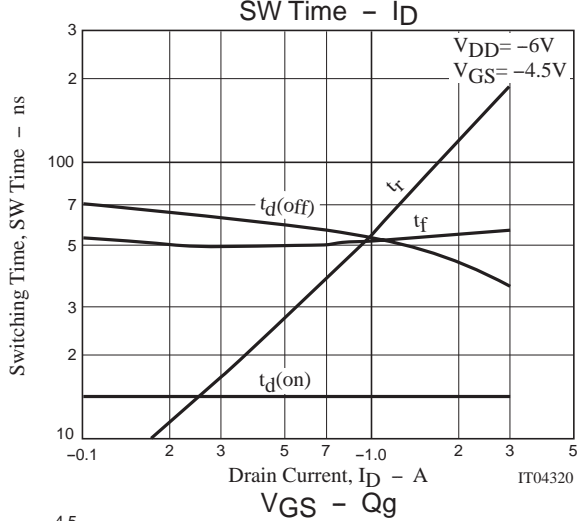
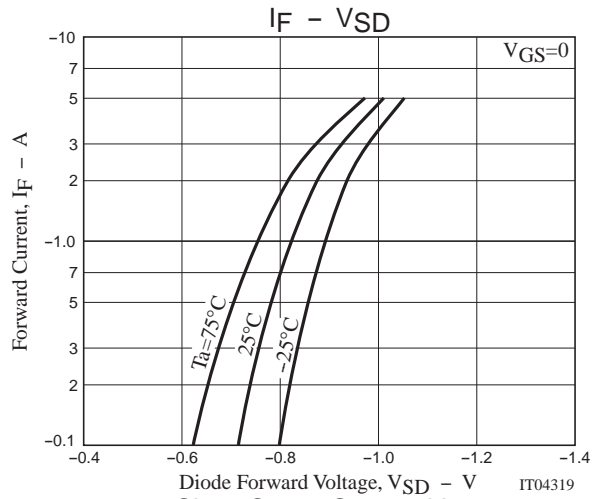
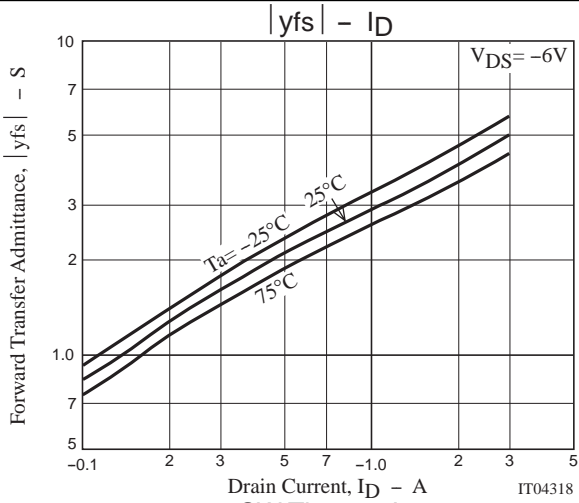
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-6V, f=1MHz		310		pF
Output Capacitance	Coss	V <sub>DS</sub> =-6V, f=1MHz		90		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-6V, f=1MHz		80		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		14		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		53		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		53		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		52		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.0A		4.6		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.0A		0.7		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.0A		1.3		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-2.0A, V <sub>GS</sub> =0	-0.89		-1.5	V

## Switching Time Test Circuit



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