

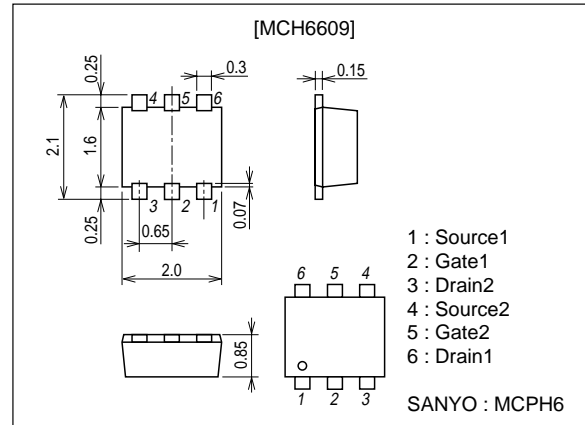
**MCH6609****Ultrahigh-Speed Switching Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting.

**Package Dimensions**

unit : mm

2173A

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-50	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-0.28	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-1.1	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> ×0.8mm)1unit	0.8	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	-50			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-50V, V <sub>GS</sub> =0			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-70mA	170	240		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-70mA, V <sub>GS</sub> =-4V		5.1	6.6	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-40mA, V <sub>GS</sub> =-2.5V		6	8.4	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-10mA, V <sub>GS</sub> =-1.5V		10	20	Ω

Marking : FI

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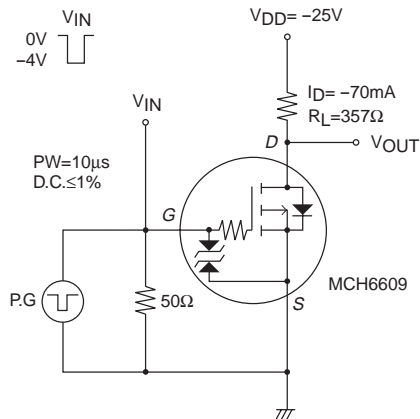
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# MCH6609

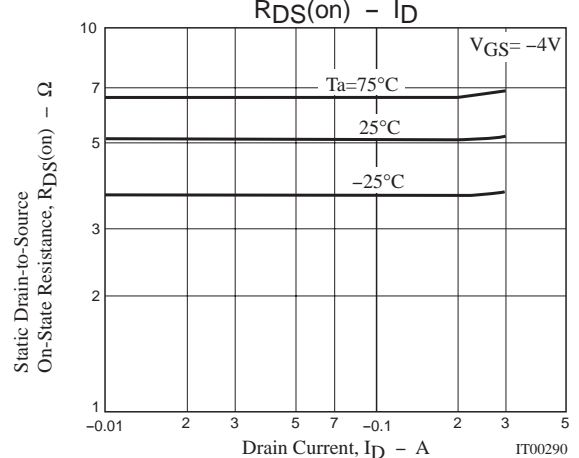
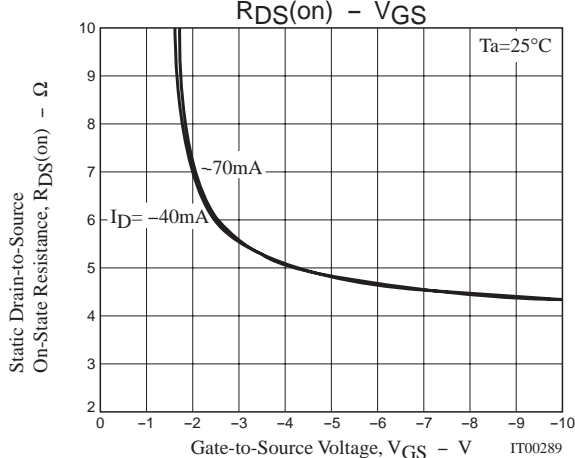
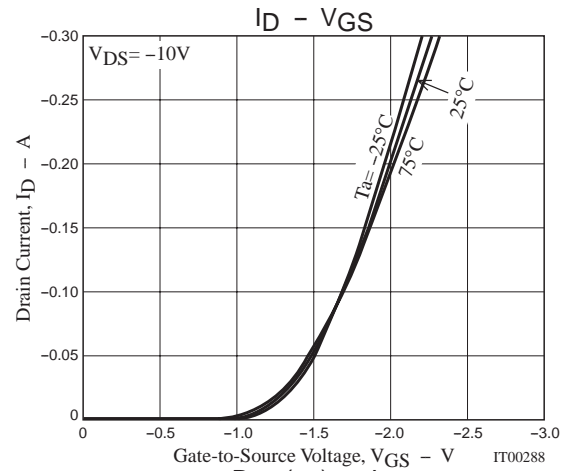
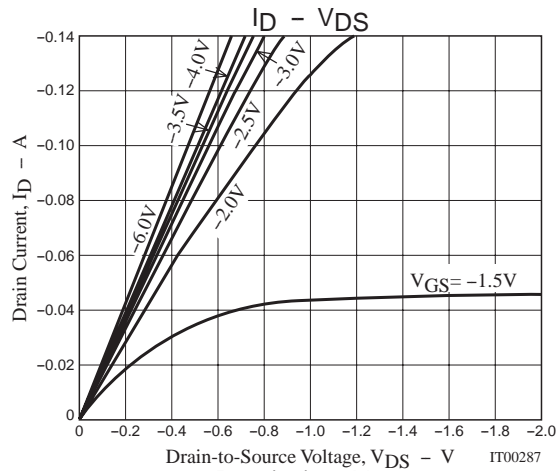
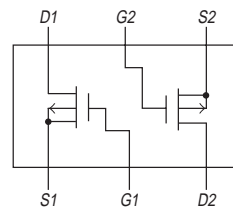
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		28		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		11		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		3.5		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		20		ns
Rise Time	$t_r$	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		250		ns
Fall Time	$t_f$	See specified Test Circuit.		120		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-140mA$		1.98		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-140mA$		0.22		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-140mA$		0.33		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-140mA, V_{GS}=0$		0.83	1.2	V

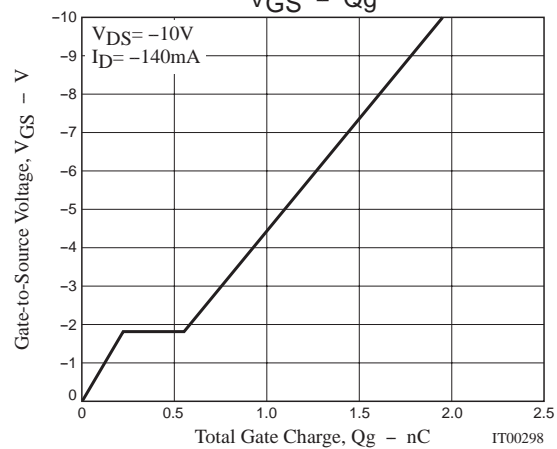
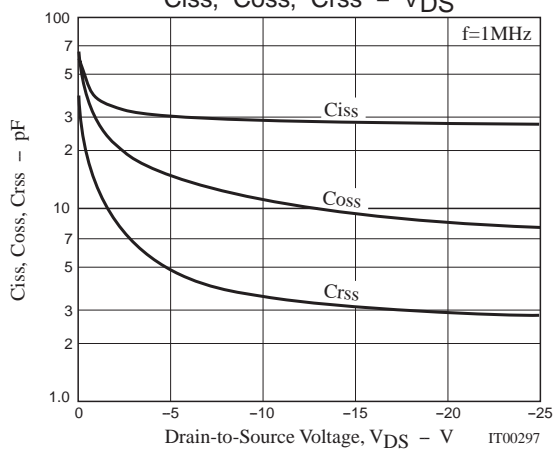
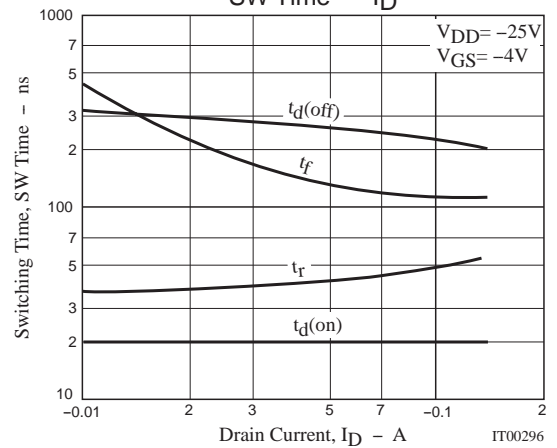
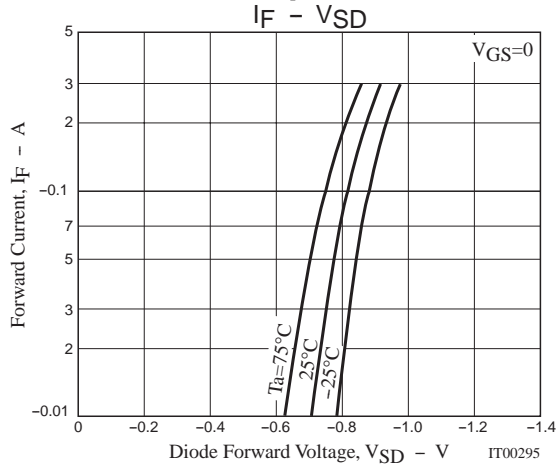
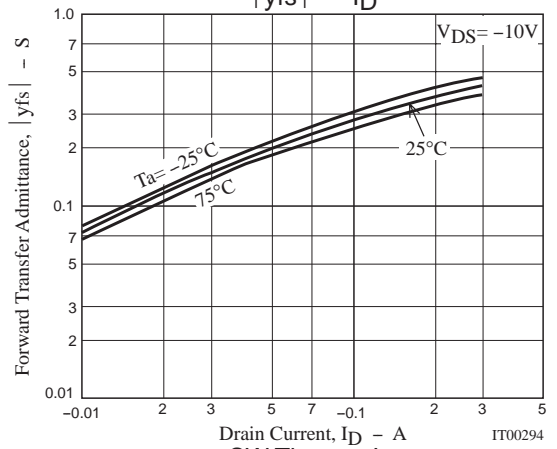
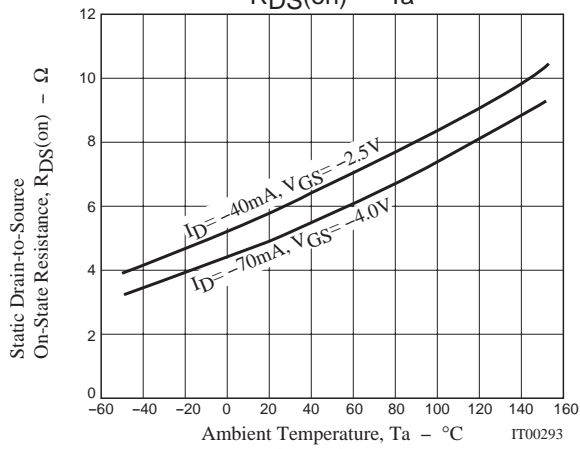
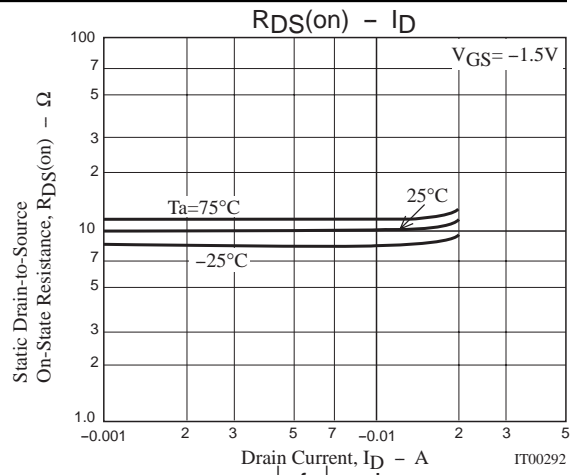
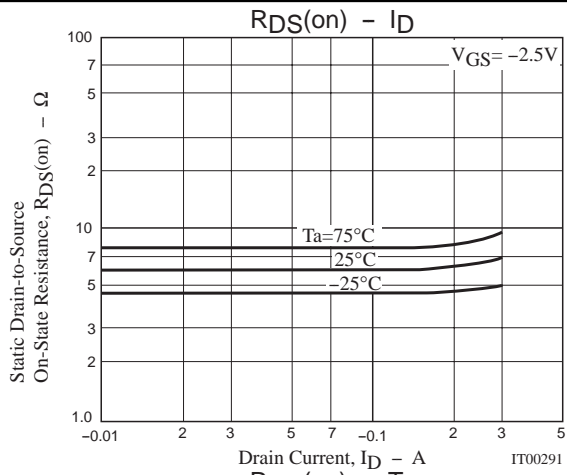
## Switching Time Test Circuit



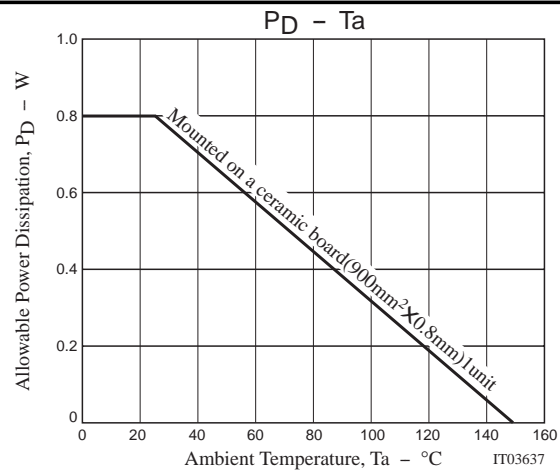
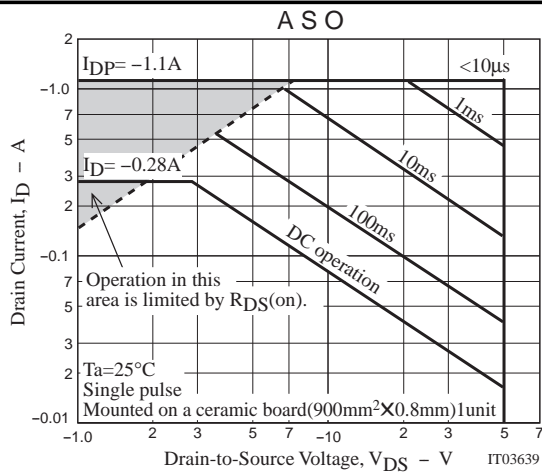
## Electrical Connection



# MCH6609



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Note on usage : Since the MCH6609 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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