

Ordering number:ENN6459

N-Channel Silicon MOSFET



**MCH6604**

**Ultrahigh-Speed Switching Applications**

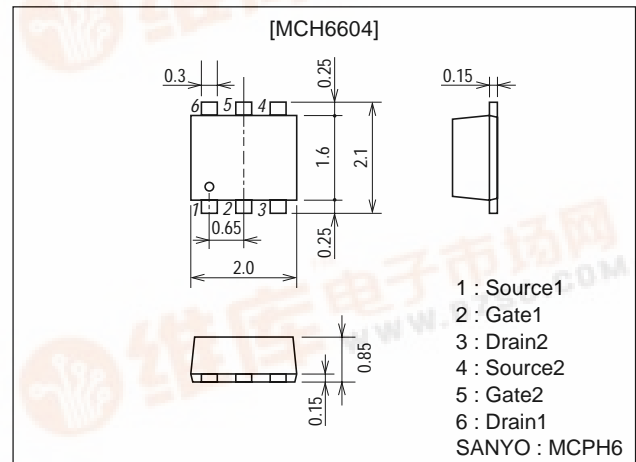
**Features**

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

**Package Dimensions**

unit:mm

2173



**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>		0.25	A
Drain Current (pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	1	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm) 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		1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =50mA	130	180		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =50mA, V <sub>GS</sub> =4V		6	7.8	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =30mA, V <sub>GS</sub> =2.5V		7.1	9.9	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =10mA, V <sub>GS</sub> =1.5V		10	20	Ω

Marking : FD

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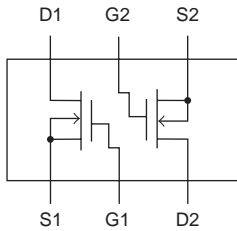


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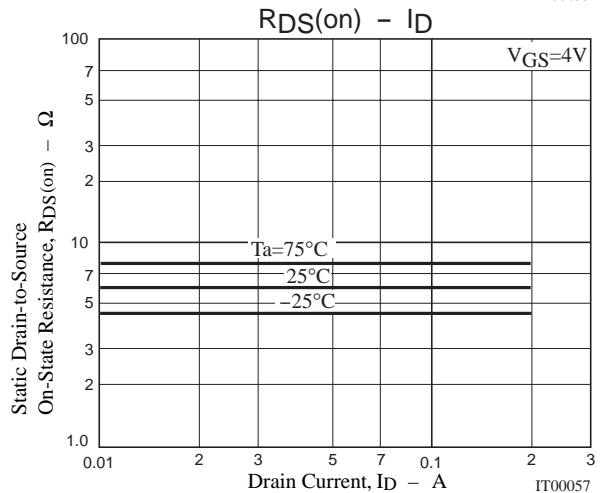
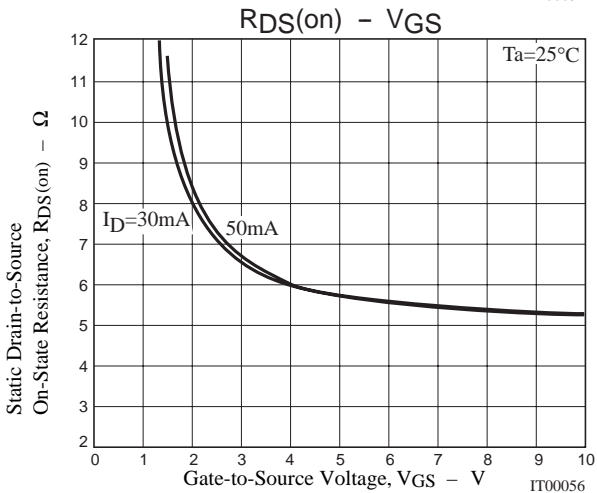
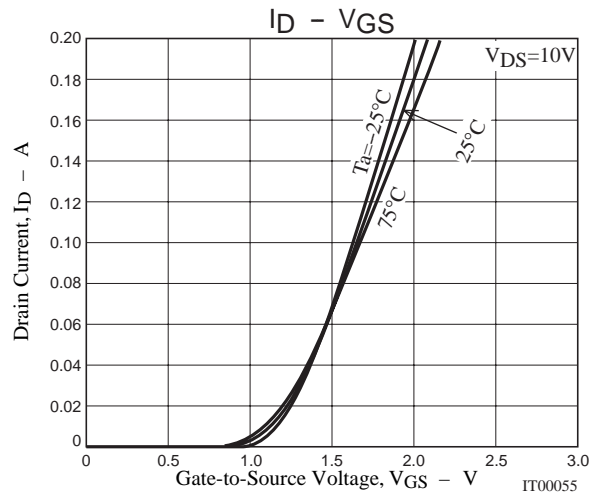
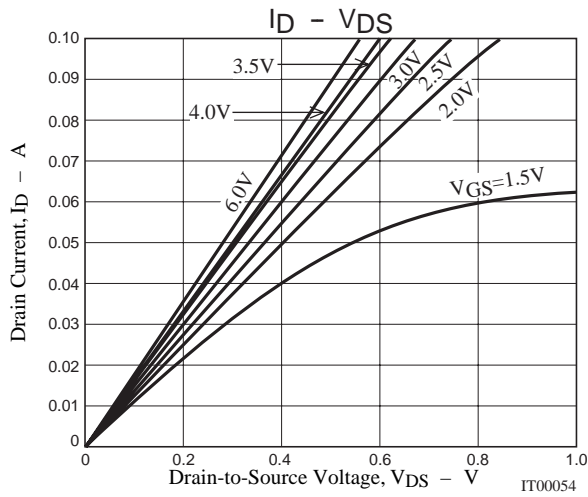
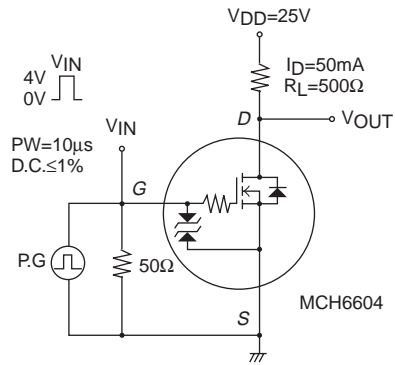
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		6.6		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		4.7		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		1.7		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		18		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		42		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		190		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		105		ns
Total Gate Charge	Qg	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =100mA		1.57		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =100mA		0.20		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =100mA		0.32		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =100mA, V <sub>GS</sub> =0		0.85	1.2	V

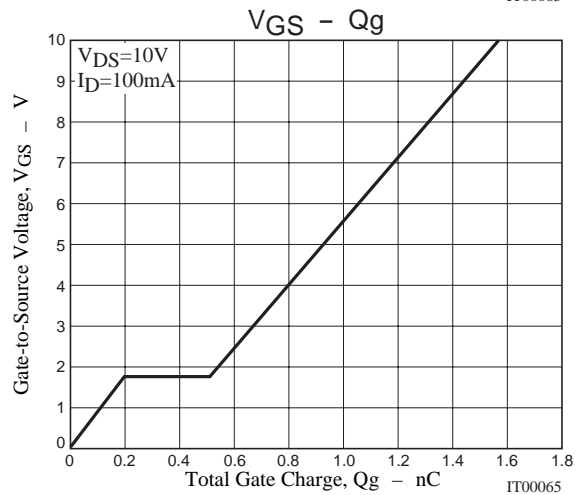
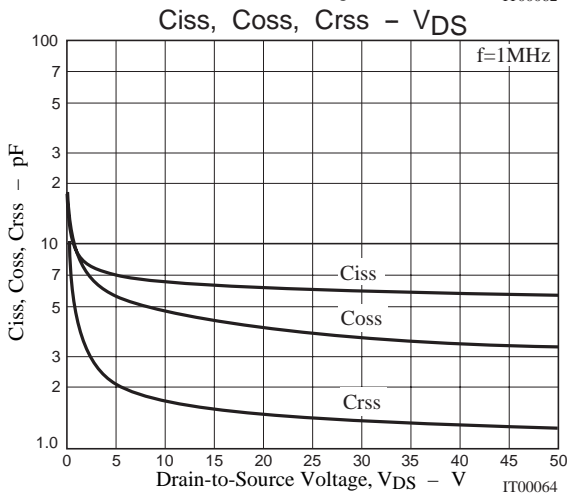
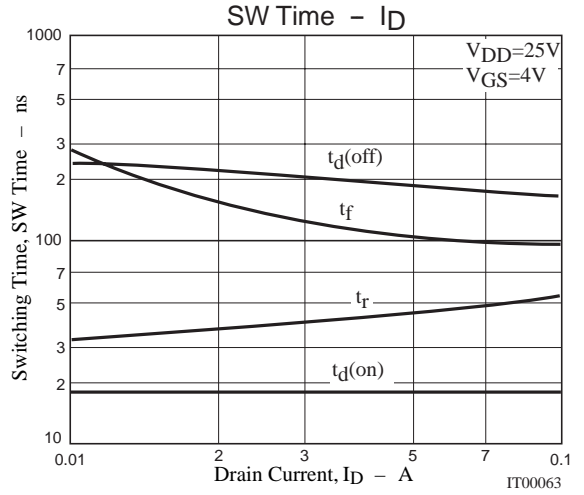
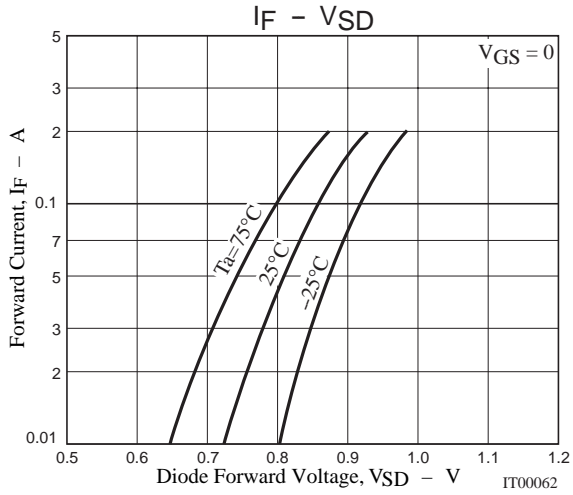
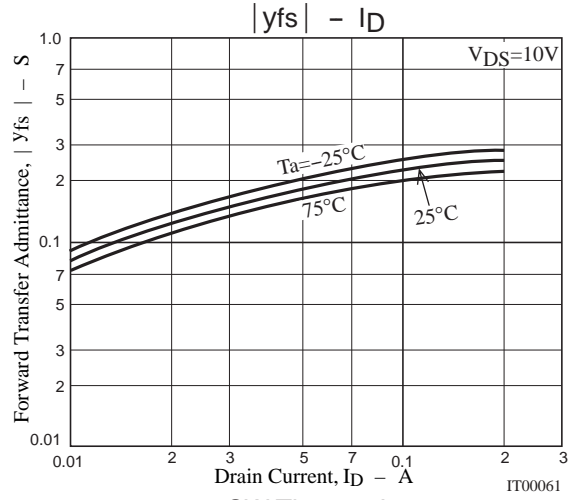
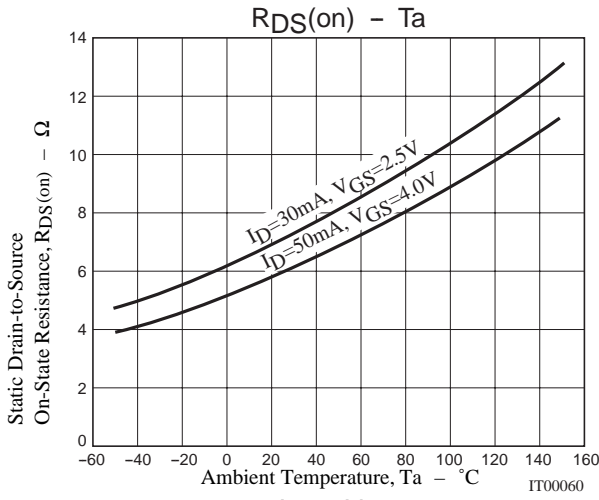
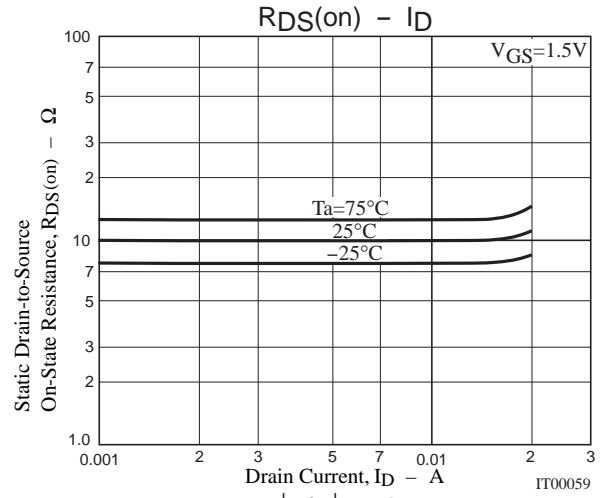
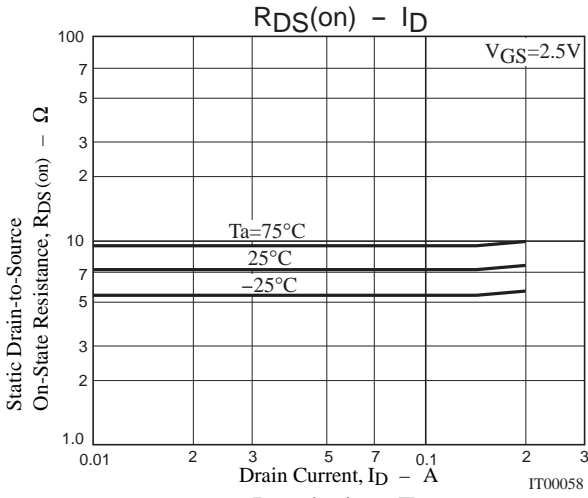
## Electrical Connection



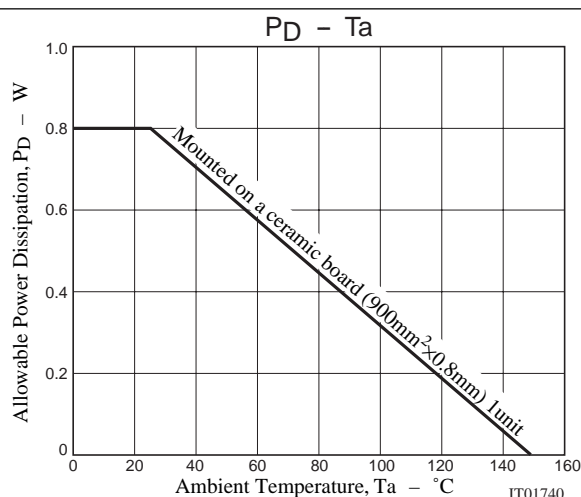
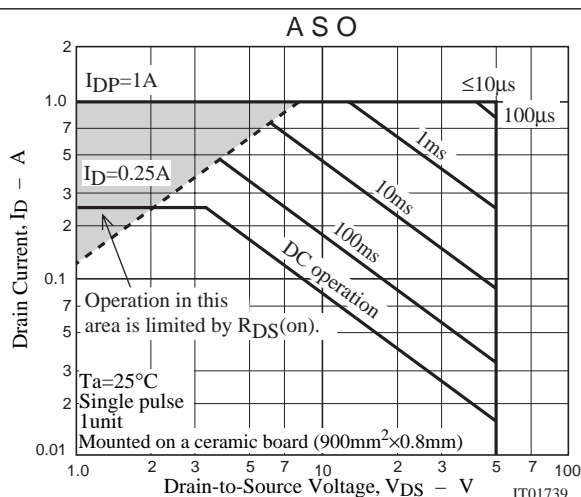
## Switching Time Test Circuit



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## MCH6604



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