

Ordering number : ENN7078

N-Channel Silicon MOSFET

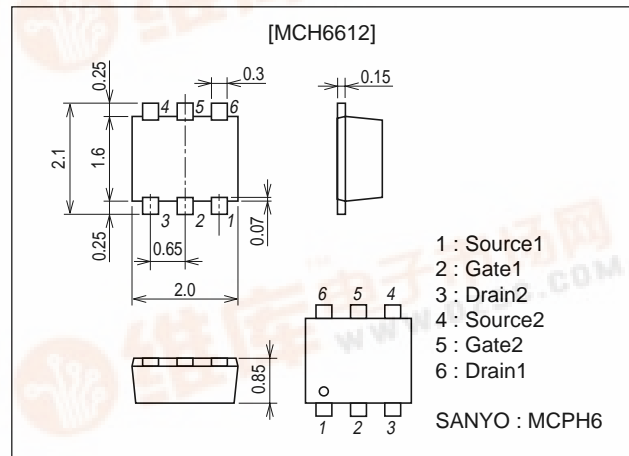
**SANYO****MCH6612****Ultrahigh-Speed Switching Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V 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	$V_{DS}$		50	V
Gate-to-Source Voltage	$V_{GS}$		±20	V
Drain Current (DC)	$I_D$		0.45	A
Drain Current (Pulse)	$I_{DP}$	PW≤10μs, duty cycle≤1%	1.8	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm²×0.8mm)1unit	0.8	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DS}$	$I_D=1mA, V_{GS}=0$	50			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=50V, V_{GS}=0$			10	μA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=±16V, V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=100μA$	1		2.4	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=100mA$	220	310		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=100mA, V_{GS}=10V$		1.8	2.3	Ω
	$R_{DS(on)2}$	$I_D=50mA, V_{GS}=4V$		2.3	3.2	Ω

Marking : FL

Continued on next page.

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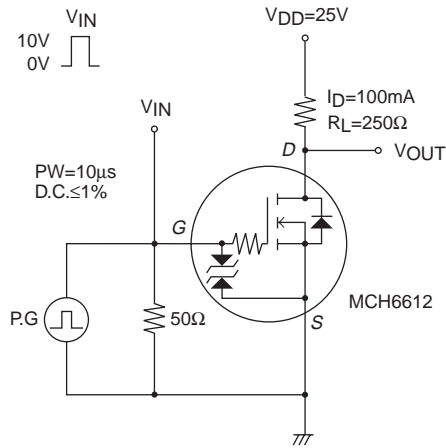
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# MCH6612

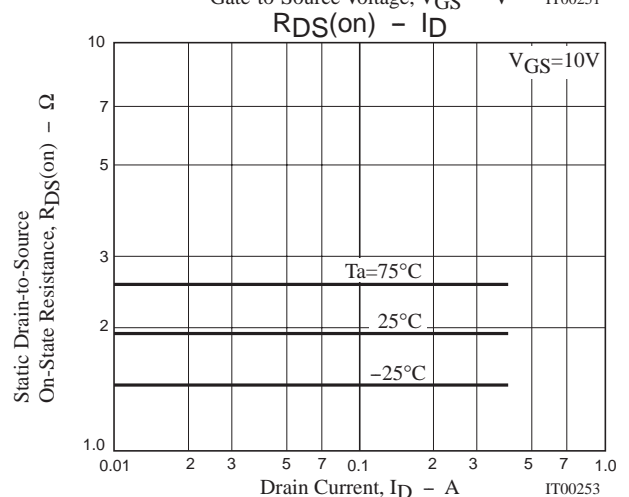
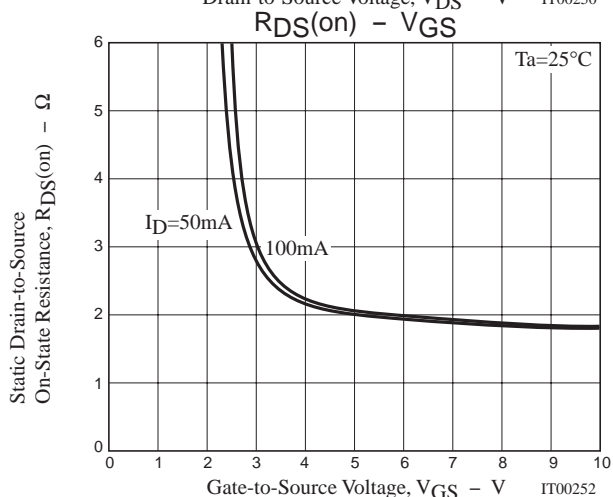
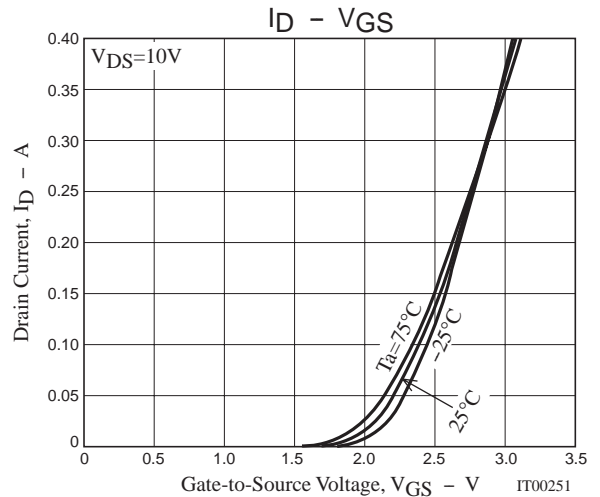
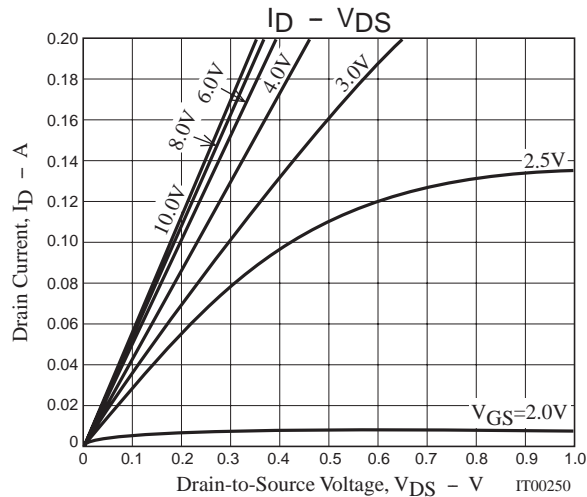
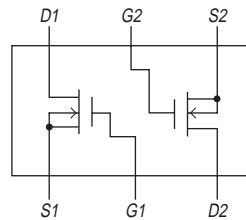
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		22		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		12		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		4.6		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		12		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		260		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		110		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =200mA		1.86		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =200mA		0.28		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =200mA		0.45		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =200mA, V <sub>GS</sub> =0		0.83	1.2	V

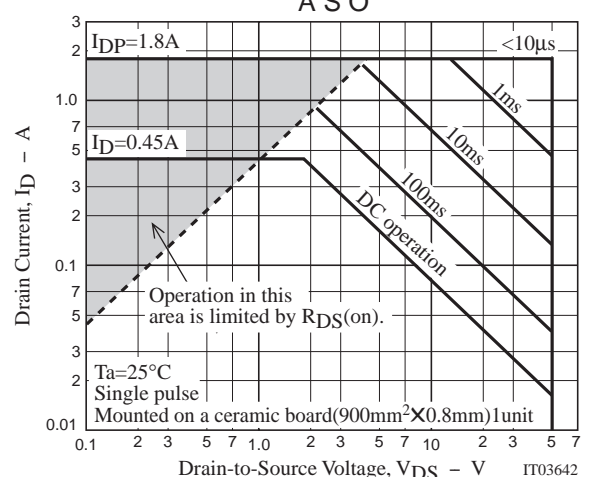
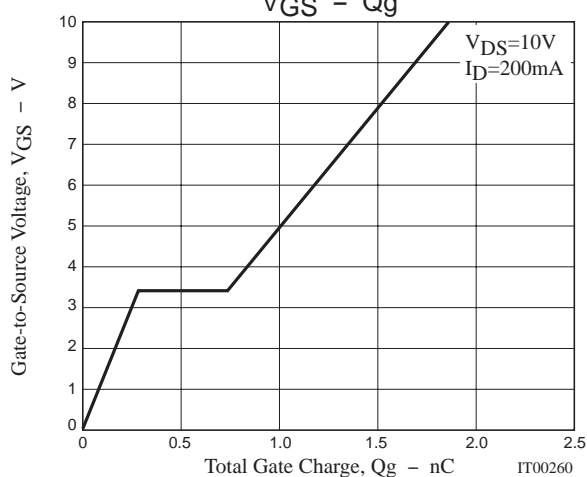
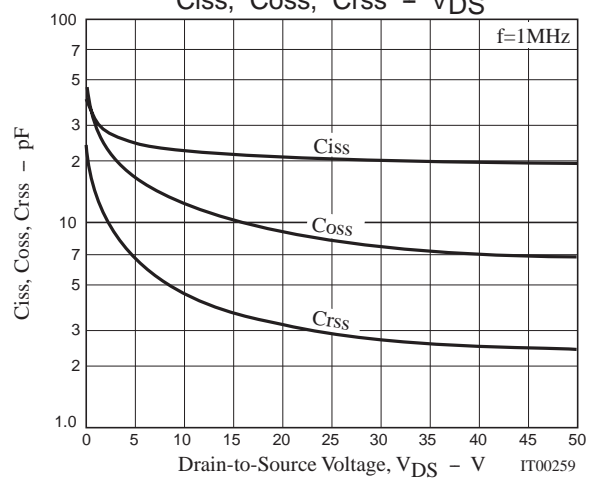
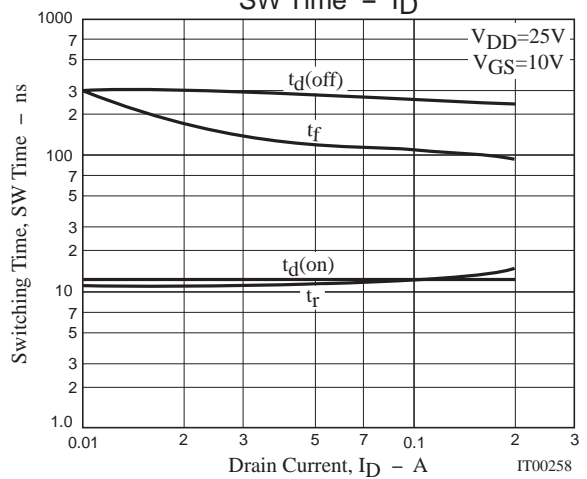
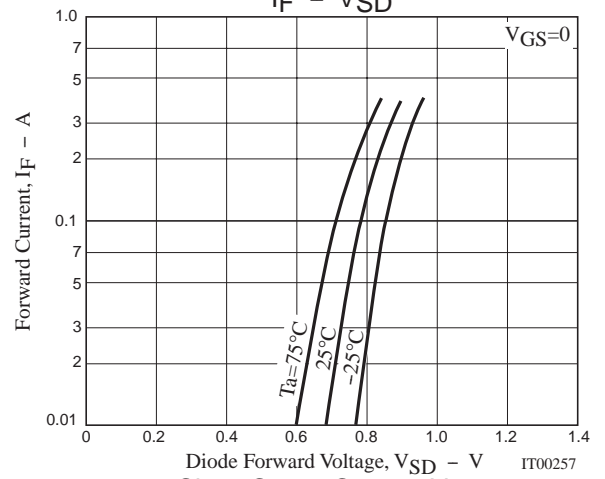
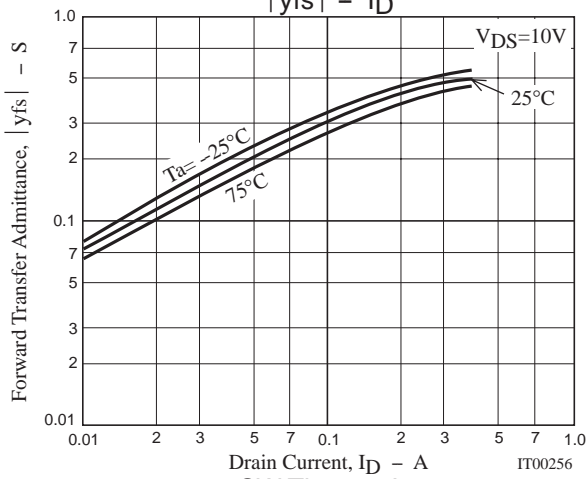
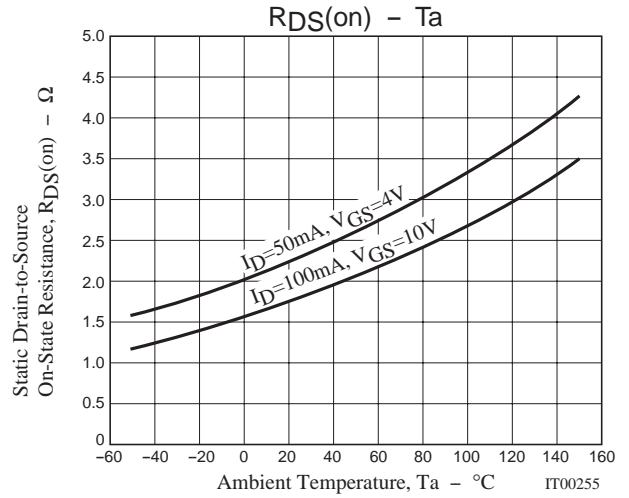
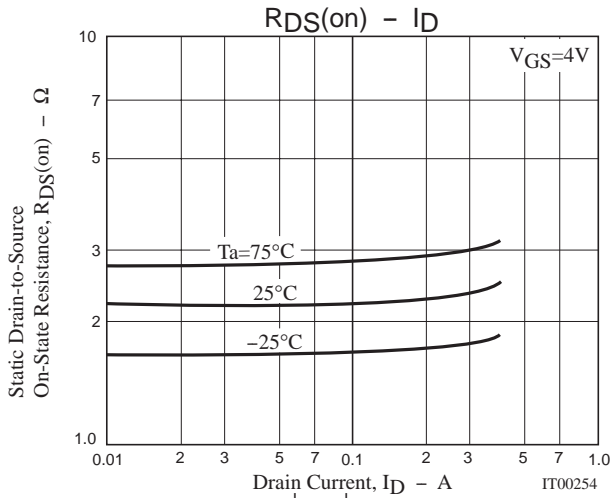
## Switching Time Test Circuit



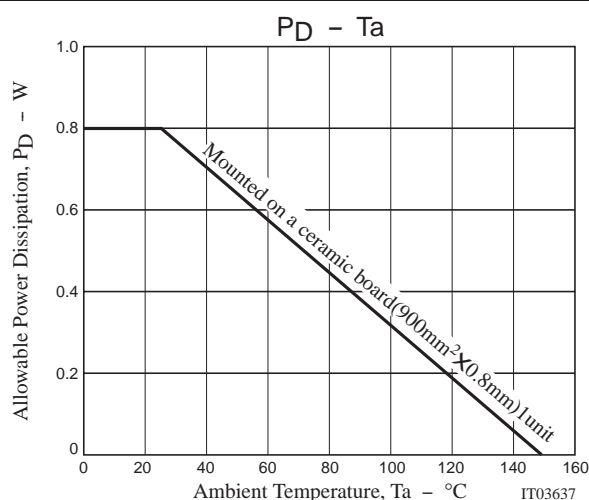
## Electrical Connection



# MCH6612



## MCH6612



Note on usage : Since the MCH6612 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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