

Ordering number : ENN7078

**SANYO**

N-Channel Silicon MOSFET

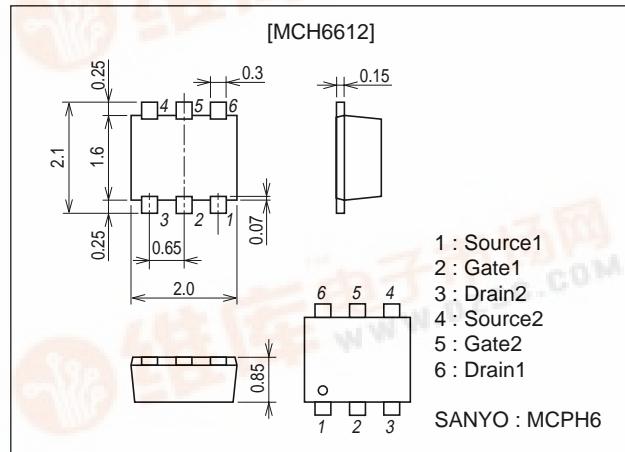
**MCH6612****Ultrahigh-Speed Switching Applications****Features**

- 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  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings		Unit
Drain-to-Source Voltage	$V_{DSS}$			50	V
Gate-to-Source Voltage	$V_{GSS}$			$\pm 20$	V
Drain Current (DC)	$I_D$			0.45	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$		1.8	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm $^2$ × 0.8mm) 1unit		0.8	W
Channel Temperature	$T_{ch}$			150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$			-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

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

Marking : FL

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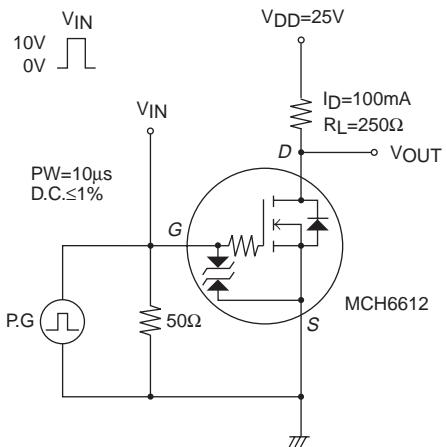
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# MCH6612

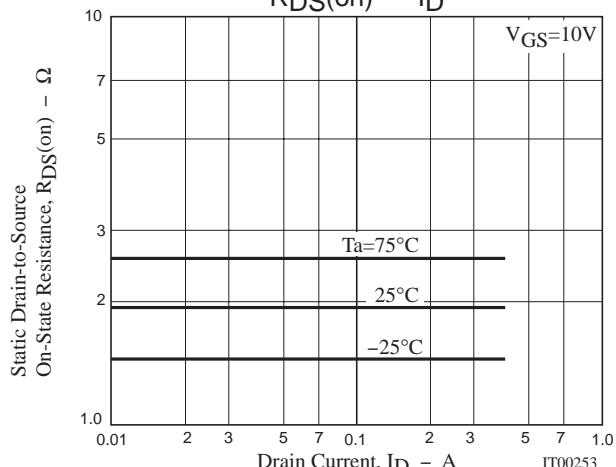
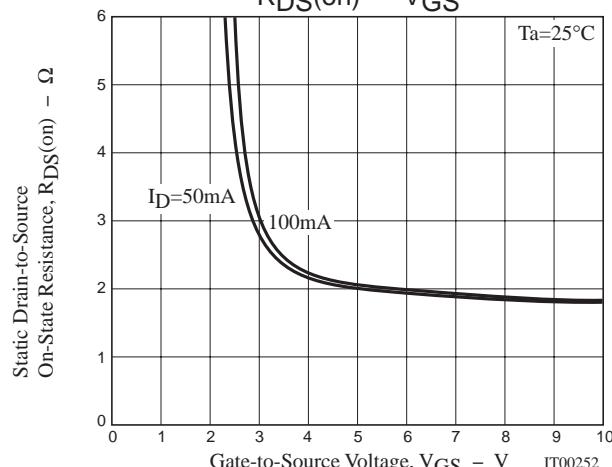
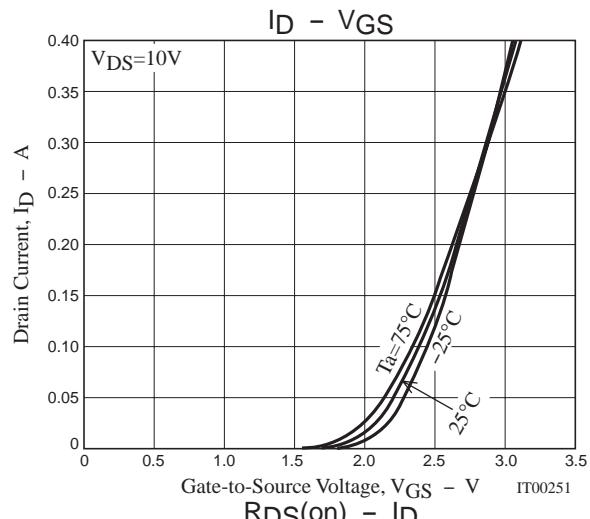
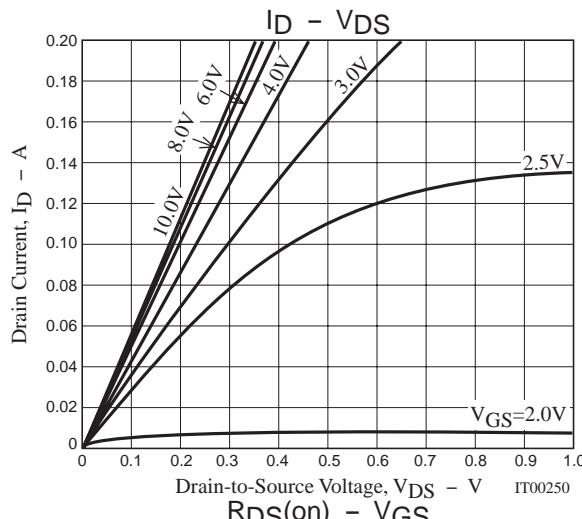
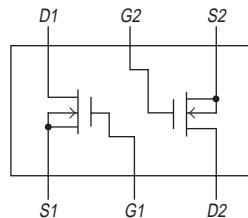
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		22		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V, f=1MHz$		12		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V, f=1MHz$		4.6		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		12		ns
Rise Time	$t_r$	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		260		ns
Fall Time	$t_f$	See specified Test Circuit.		110		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=200mA$		1.86		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10V, V_{GS}=10V, I_D=200mA$		0.28		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=10V, V_{GS}=10V, I_D=200mA$		0.45		nC
Diode Forward Voltage	$V_{SD}$	$I_S=200mA, V_{GS}=0$		0.83	1.2	V

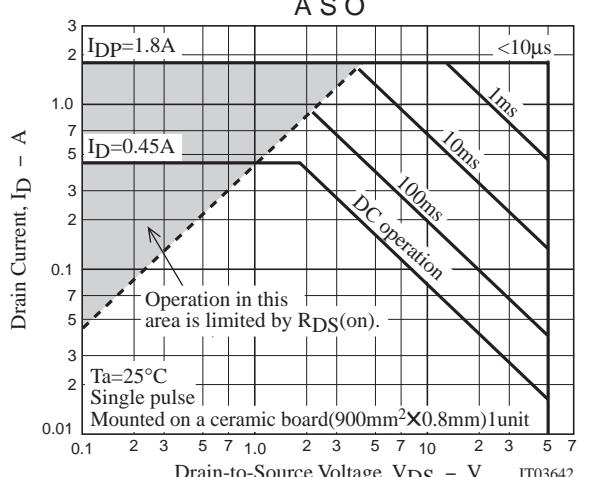
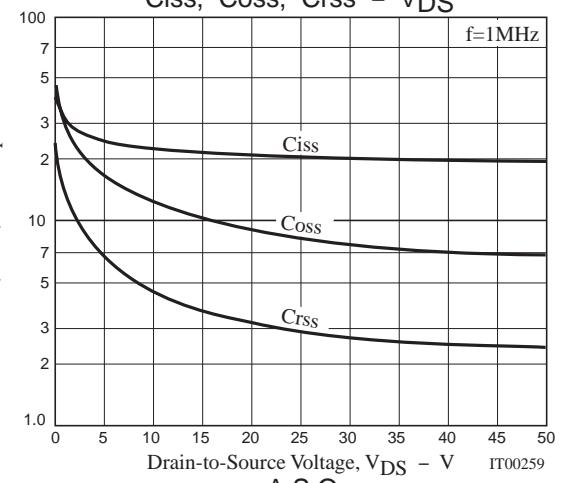
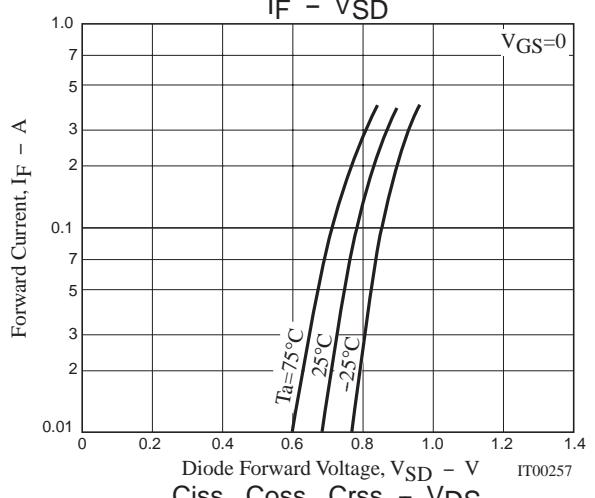
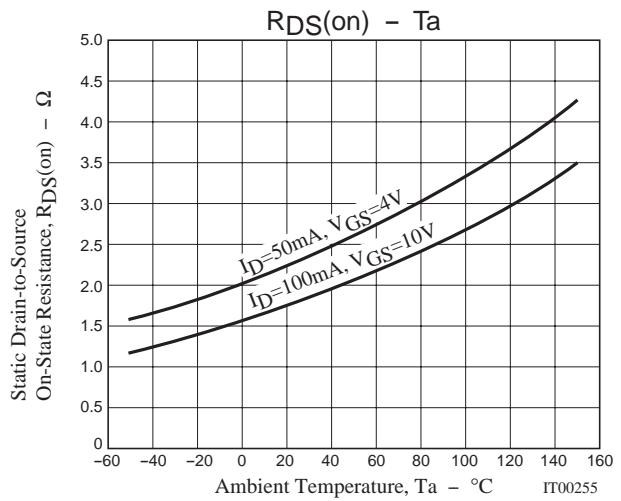
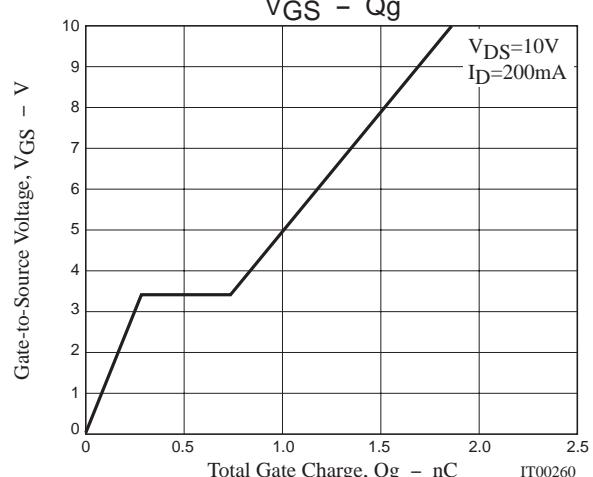
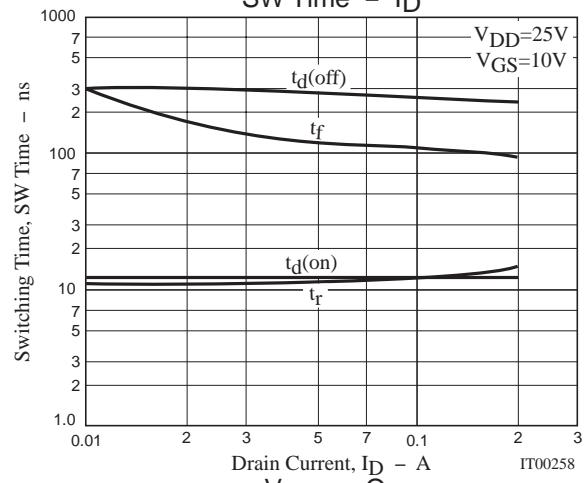
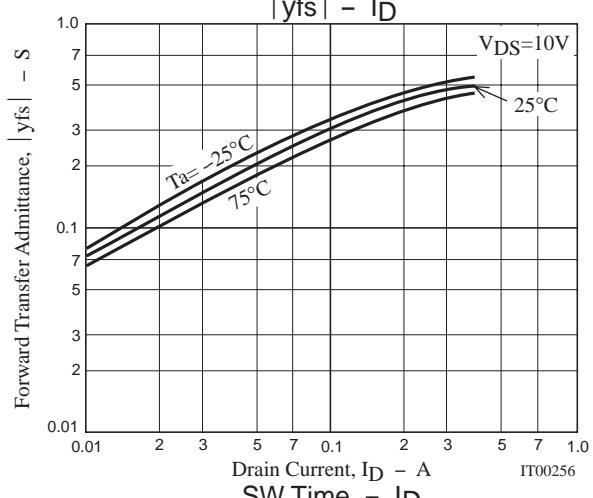
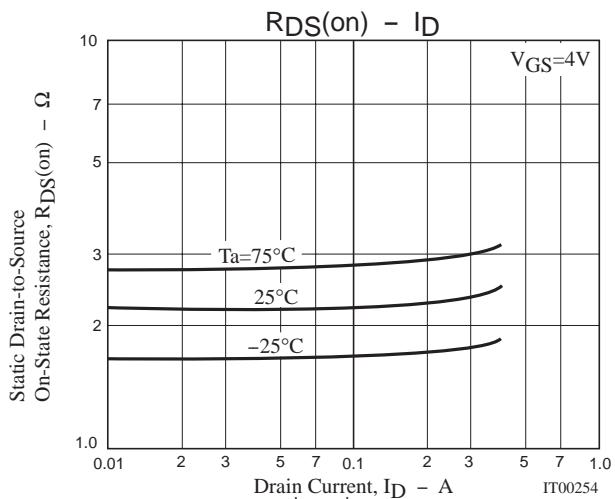
## Switching Time Test Circuit



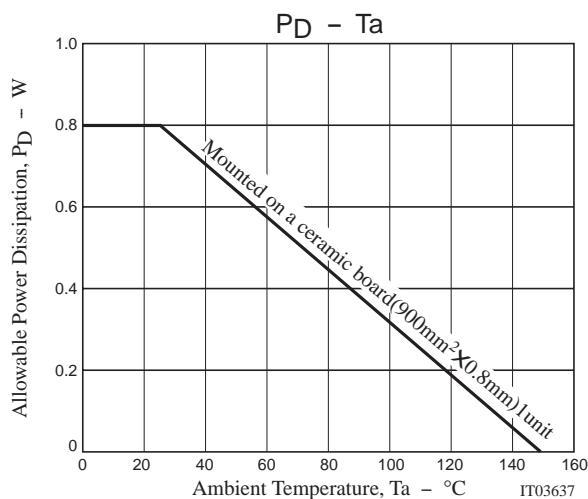
## Electrical Connection



## MCH6612



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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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