



# MCH6630

N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.5V drive.
- High resistance to damage from ESD (TYP 300V).  
[with a protection diode connected between the gate and source]
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting.

### Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		30	V
Gate-to-Source Voltage (*1)	$V_{GSS}$		10	V
Drain Current (DC)	$I_D$		0.7	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	2.8	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm $\times$ 0.8mm) 1unit	0.8	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

(\*1) : Note, when designing a circuit using this product, that it has a gate (oxide film) protection diode connected only between its gate and source.

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30\text{V}$ , $V_{GS}=0$			1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=8\text{V}$ , $V_{DS}=0$			1	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=100\mu\text{A}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=350\text{mA}$	0.45	0.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=350\text{mA}$ , $V_{GS}=4\text{V}$		0.7	0.9	$\Omega$
	$R_{DS(on)2}$	$I_D=200\text{mA}$ , $V_{GS}=2.5\text{V}$		0.8	1.15	$\Omega$
	$R_{DS(on)3}$	$I_D=10\text{mA}$ , $V_{GS}=1.5\text{V}$		1.6	2.4	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10\text{V}$ , $f=1\text{MHz}$		30		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10\text{V}$ , $f=1\text{MHz}$		7		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10\text{V}$ , $f=1\text{MHz}$		3.5		pF

Marking : WE

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**SANYO Electric Co.,Ltd. Semiconductor Company**

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# MCH6630

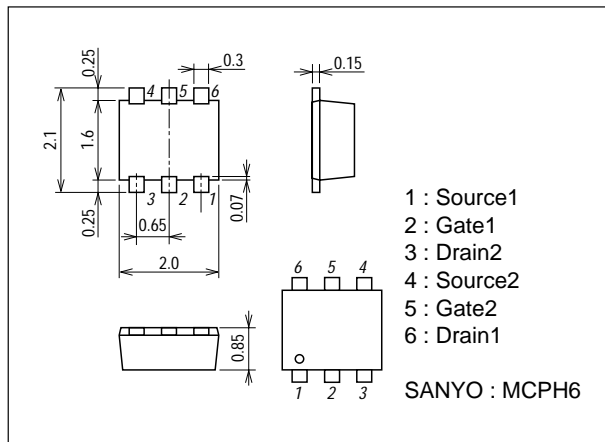
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8		ns
Rise Time	$t_r$	See specified Test Circuit.		6		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		10		ns
Fall Time	$t_f$	See specified Test Circuit.		8		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=700mA$		1		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=700mA$		0.4		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=700mA$		0.2		nC
Diode Forward Voltage	$V_{SD}$	$I_S=700mA, V_{GS}=0$		0.93	1.2	V

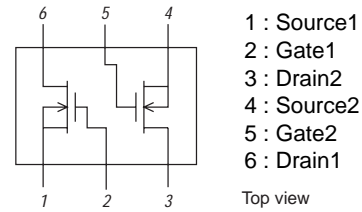
## Package Dimensions

unit : mm

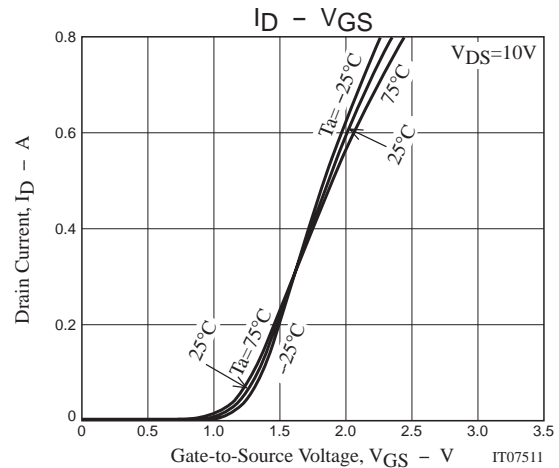
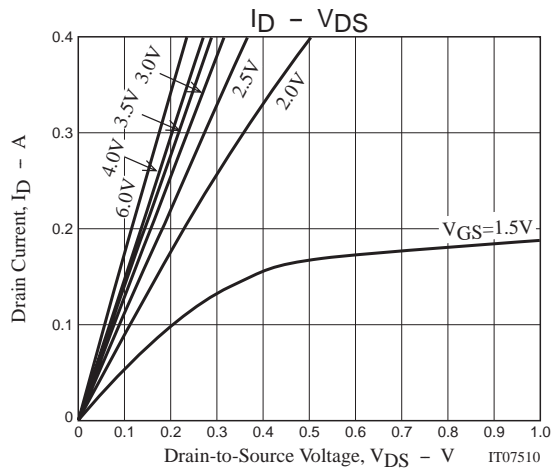
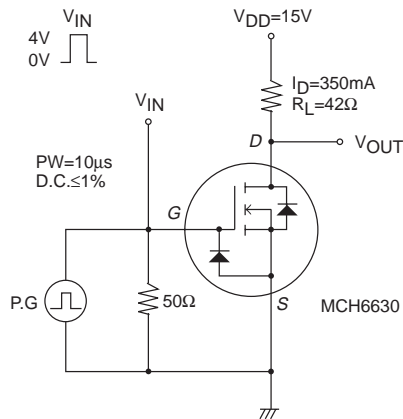
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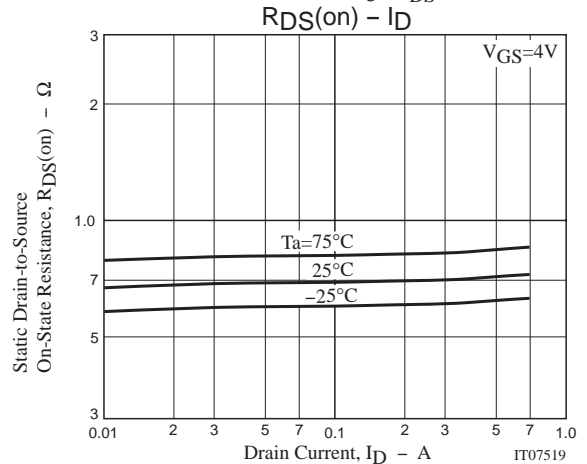
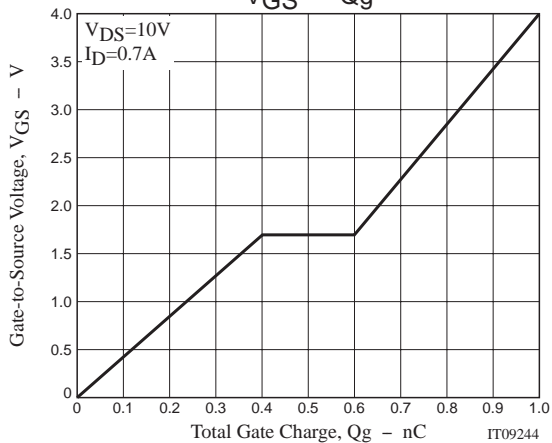
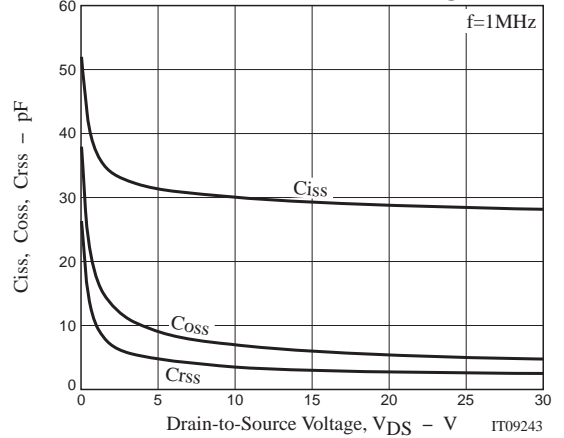
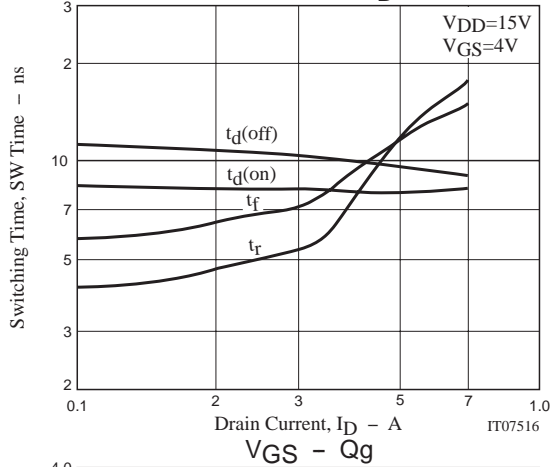
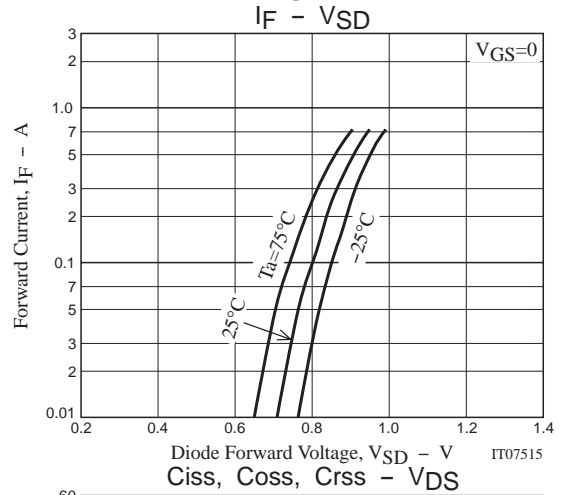
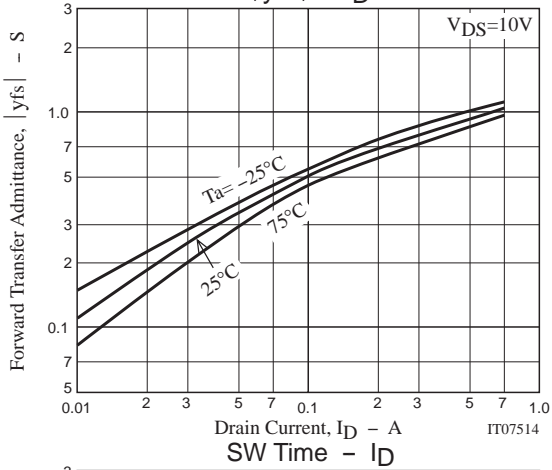
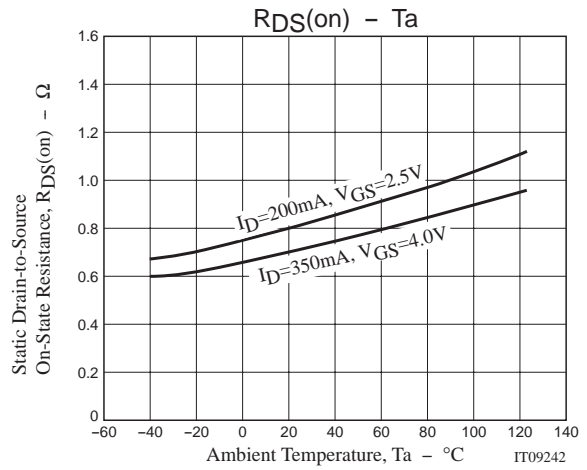
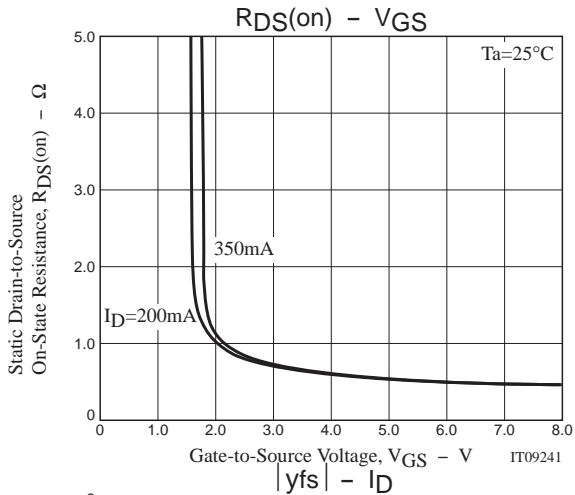
## Electrical Connection



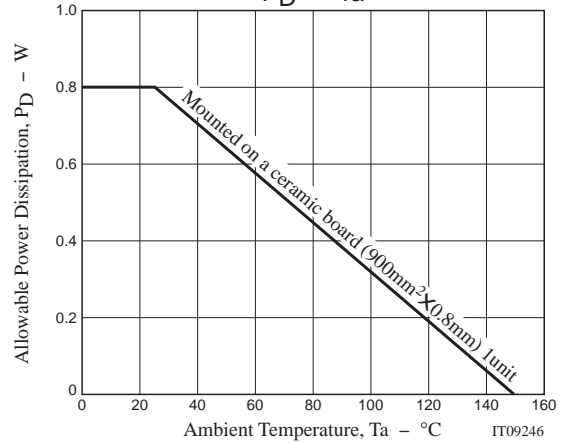
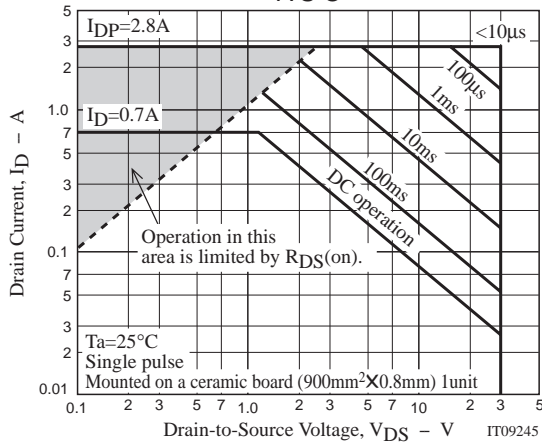
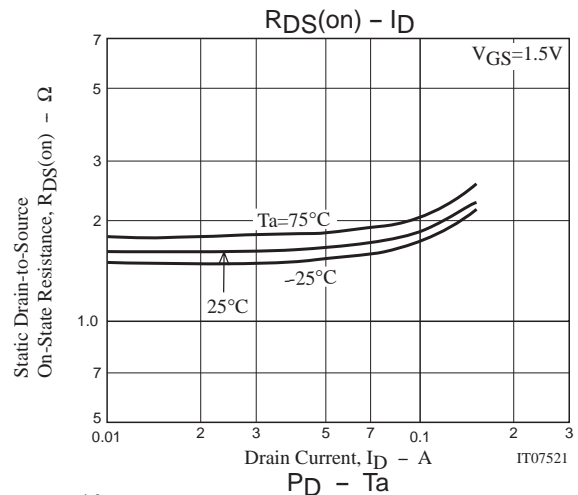
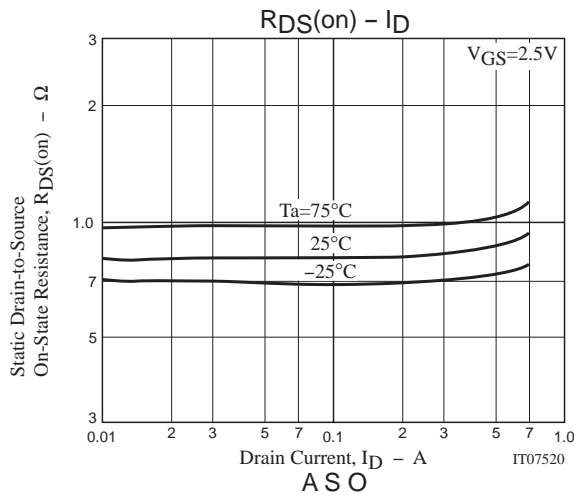
## Switching Time Test Circuit



# MCH6630



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Note on usage : Since the MCH6630 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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