



# MCH6629

P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.5V drive.
- High ESD voltage (TYP 300V)  
[Built-in one side diode for protection between Gate-to-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)	$I_D$		-0.4	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-1.6	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	$V_{(BR)DSS}$	$I_D=-1\text{mA}$ , $V_{GS}=0\text{V}$	-30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30\text{V}$ , $V_{GS}=0\text{V}$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=-8\text{V}$ , $V_{DS}=0\text{V}$			-1	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}$ , $I_D=-100\mu\text{A}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}$ , $I_D=-0.2\text{A}$	0.25	0.42		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-0.2\text{A}$ , $V_{GS}=-4\text{V}$		1.5	1.9	$\Omega$
	$R_{DS(on)2}$	$I_D=-0.1\text{A}$ , $V_{GS}=-2.5\text{V}$		2.0	2.8	$\Omega$
	$R_{DS(on)3}$	$I_D=-10\text{mA}$ , $V_{GS}=-1.5\text{V}$		4.0	8.0	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=-10\text{V}$ , $f=1\text{MHz}$		40		pF
Output Capacitance	$C_{oss}$	$V_{DS}=-10\text{V}$ , $f=1\text{MHz}$		8		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=-10\text{V}$ , $f=1\text{MHz}$		4.5		pF

Marking : YL

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**SANYO Semiconductor Co., Ltd.**

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# MCH6629

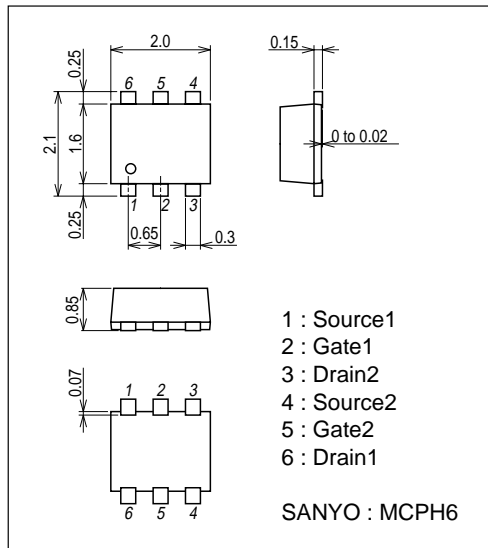
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	$t_r$	See specified Test Circuit.		5		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		10		ns
Fall Time	$t_f$	See specified Test Circuit.		5		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-4V, I_D=-0.4A$		0.83		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-4V, I_D=-0.4A$		0.25		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-4V, I_D=-0.4A$		0.17		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-0.4A, V_{GS}=0V$		-1.0	-1.5	V

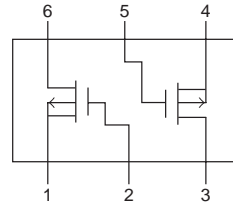
## Package Dimensions

unit : mm (typ)

7022A-006



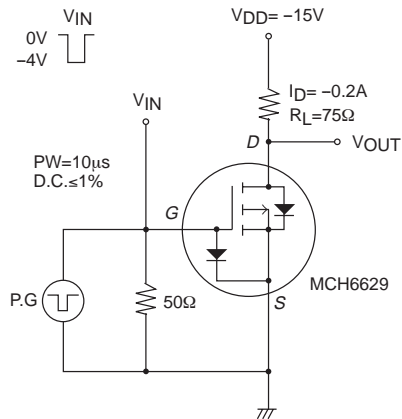
## Electrical Connection

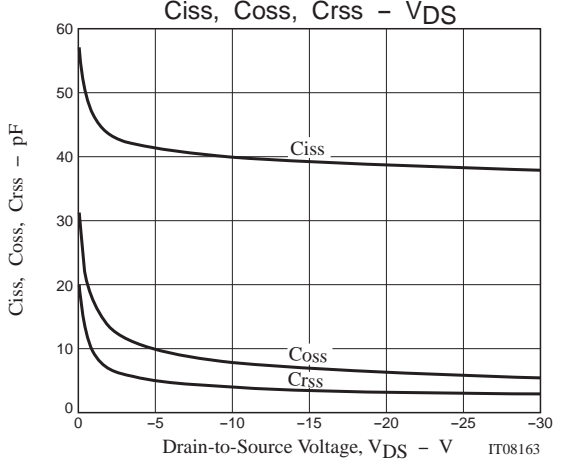
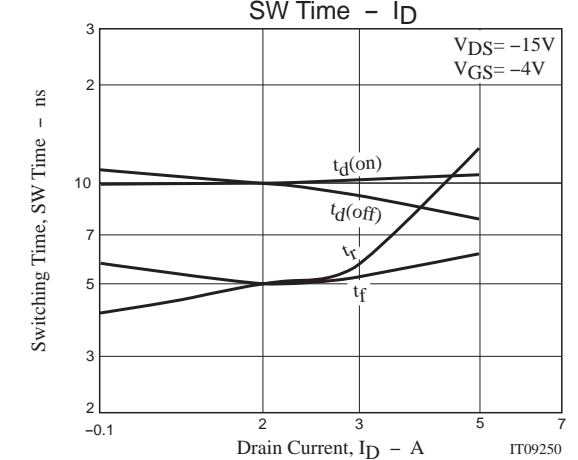
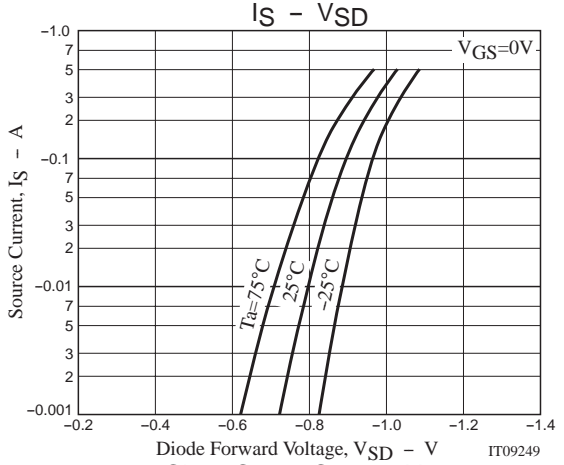
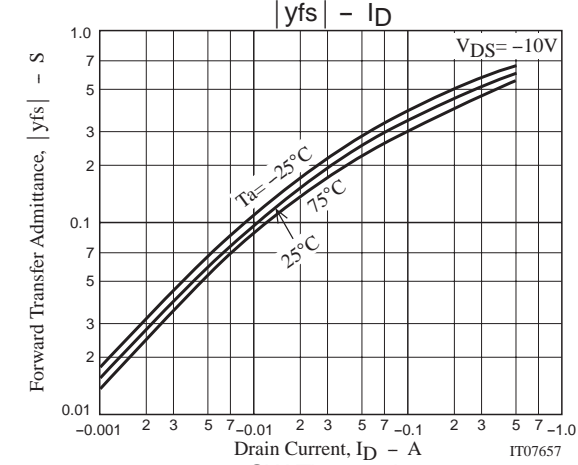
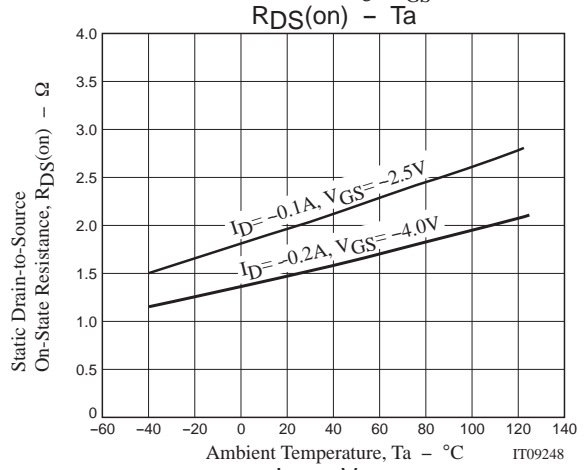
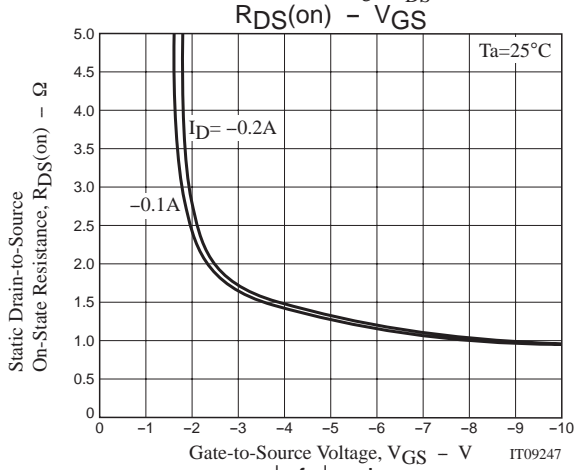
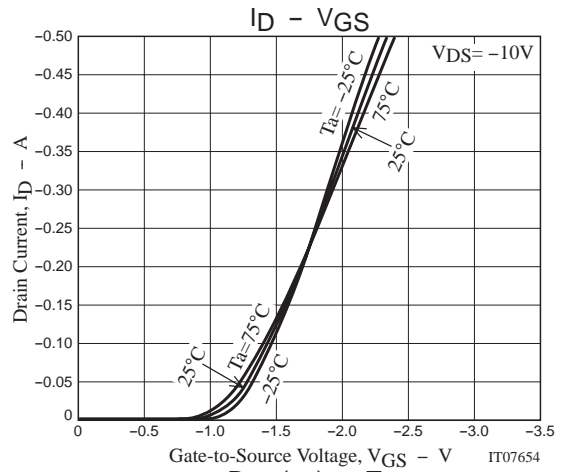
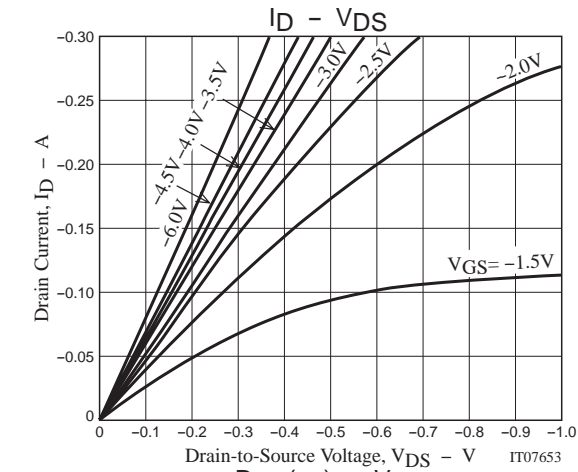


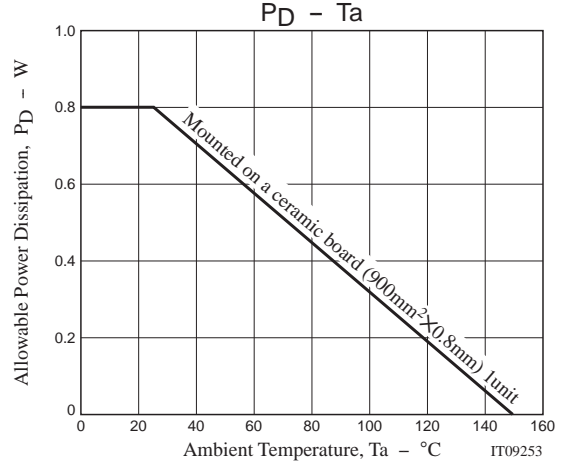
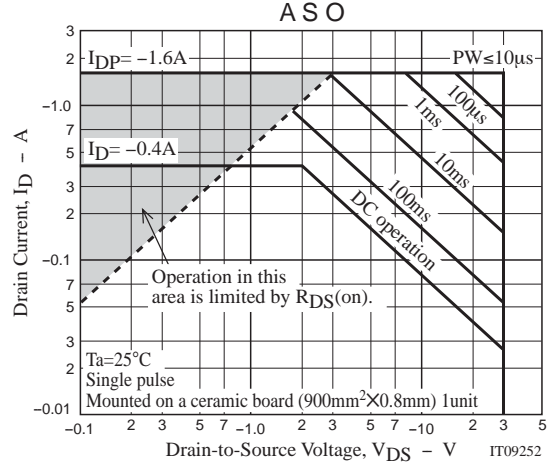
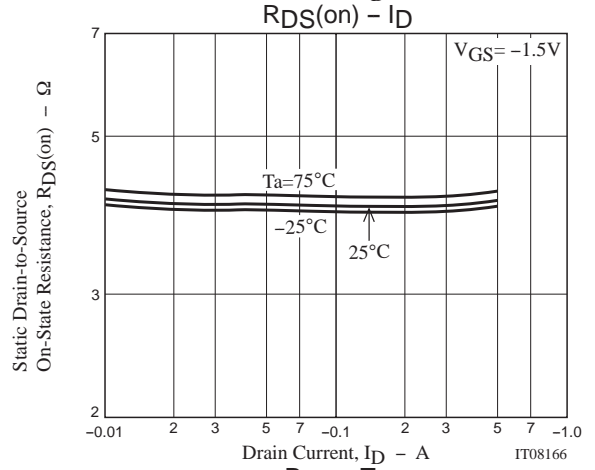
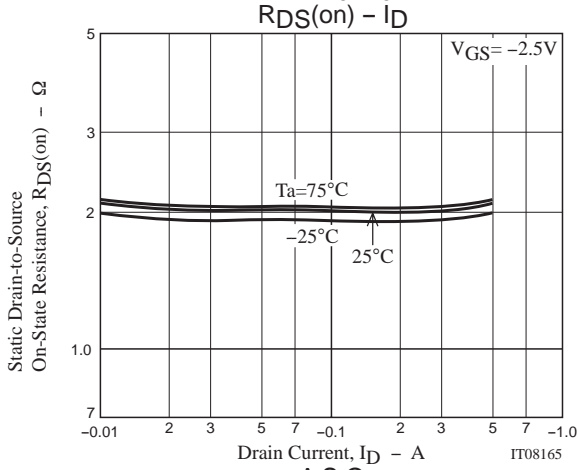
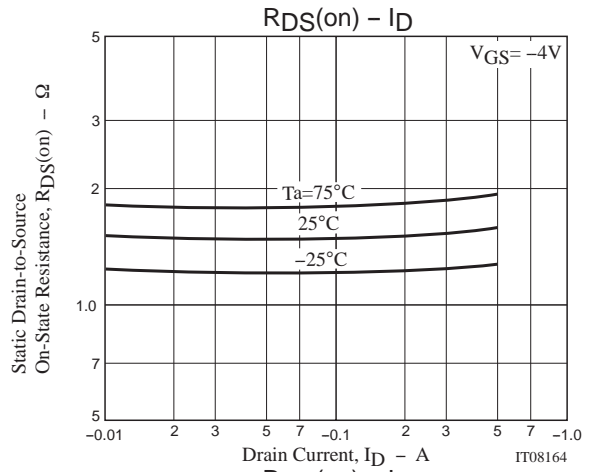
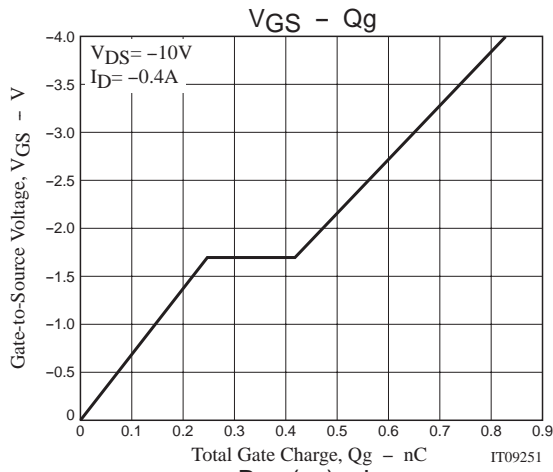
- 1 : Source1
- 2 : Gate1
- 3 : Drain2
- 4 : Source2
- 5 : Gate2
- 6 : Drain1

Top view

## Switching Time Test Circuit







Note on usage : Since the MCH6629 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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