Ordering number : EN8239A

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

MCH6629 — 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 Ta=25°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≤10μs, duty cycle≤1%	−1.6	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

(*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 Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=-1mA, V_{GS}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=−8V, V_{DS}=0V			−1	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−100μA	−0.4		−1.4	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=−10V, I_D=−0.2A	0.25	0.42		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=-0.2A, V_{GS}=-4V		1.5	1.9	Ω
	R_{DS}(on)2	I_D=-0.1A, V_{GS}=-2.5V		2.0	2.8	Ω
	R_{DS}(on)3	I_D=-10mA, V_{GS}=-1.5V		4.0	8.0	Ω
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		40		pF
Output Capacitance	Coss	V_{DS}=−10V, f=1MHz		8		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−10V, f=1MHz		4.5		pF

Marking : YL

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SANYO Semiconductor Co., Ltd.
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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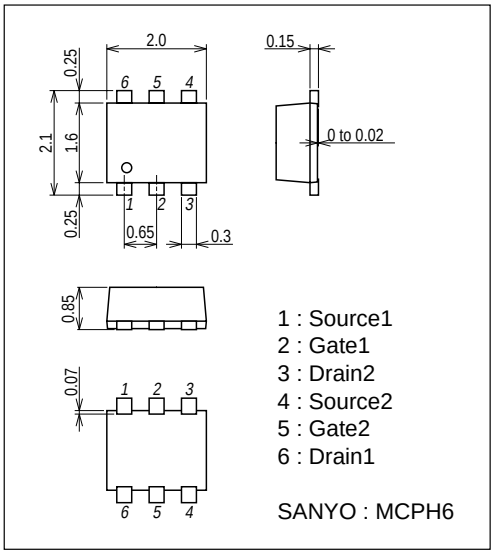
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		10		ns
Rise Time	t_{r}	See specified Test Circuit.		5		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		10		ns
Fall Time	t_{f}	See specified Test Circuit.		5		ns
Total Gate 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)

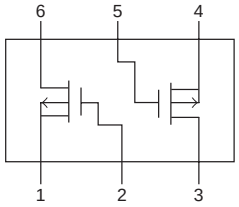
7022A-006



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

SANYO : MCPH6

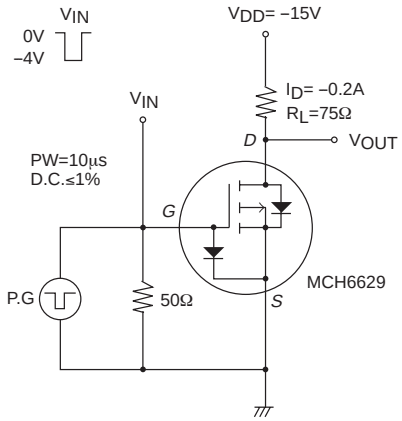
Electrical Connection

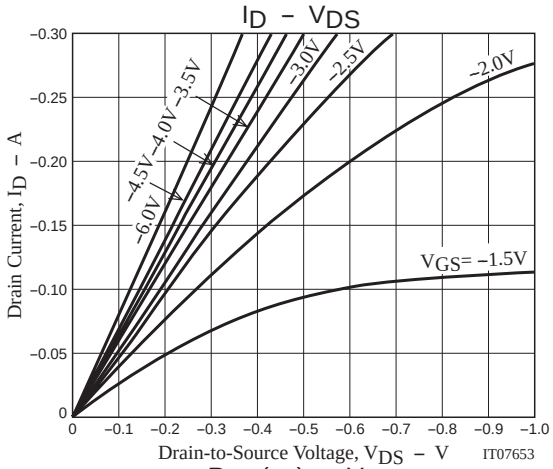


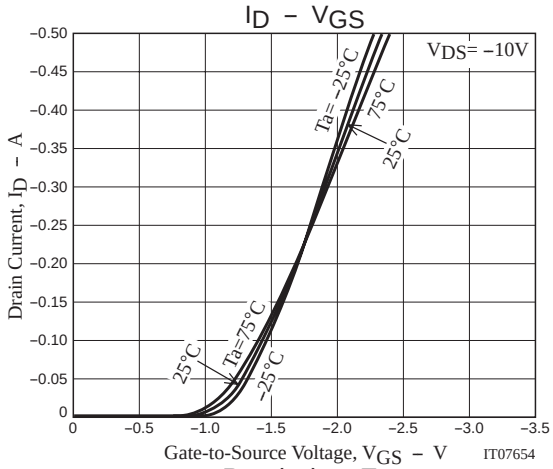
1 : Source1
2 : Gate1
3 : Drain2
4 : Source2
5 : Gate2
6 : Drain1

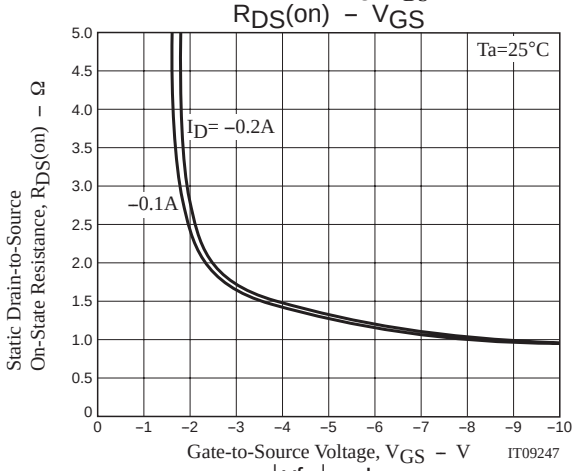
Top view

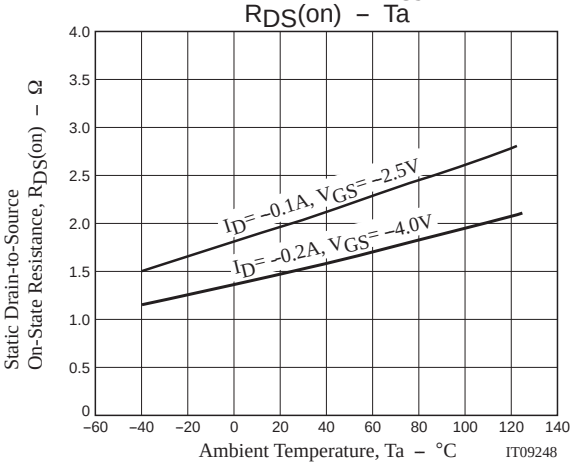
Switching Time Test Circuit

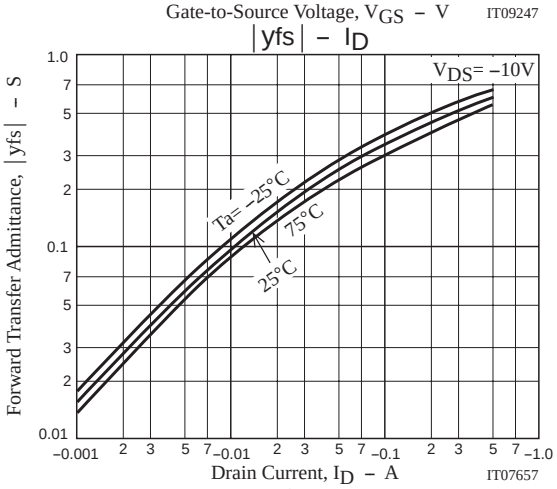


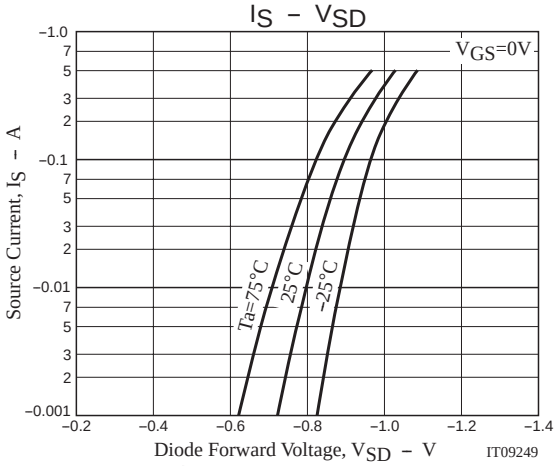


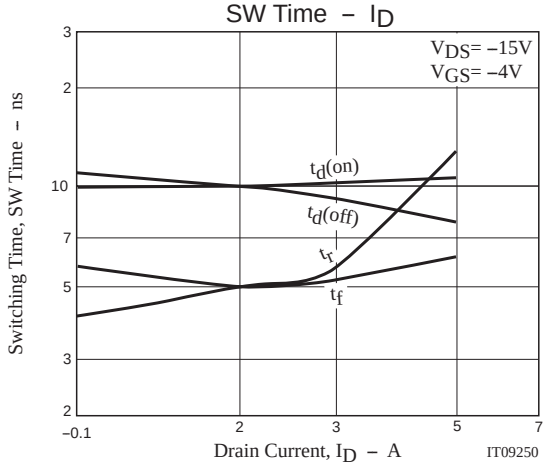


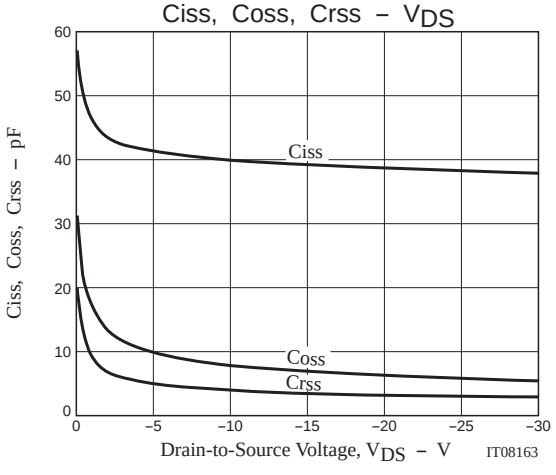


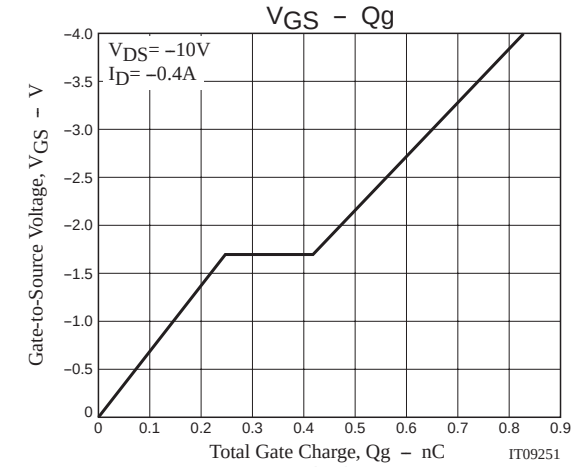


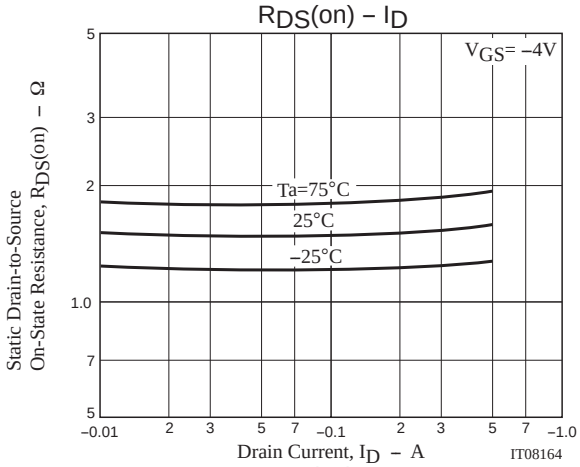


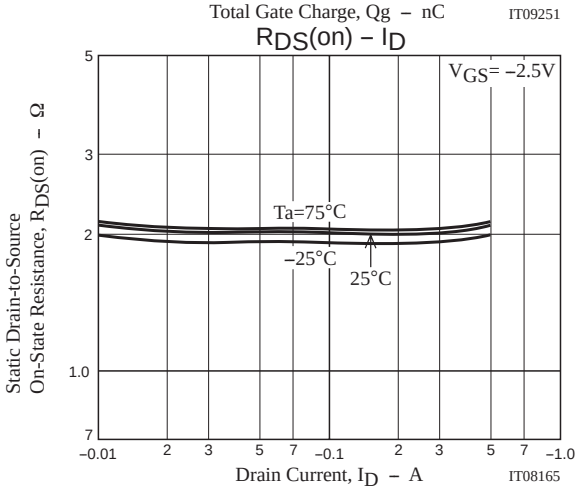


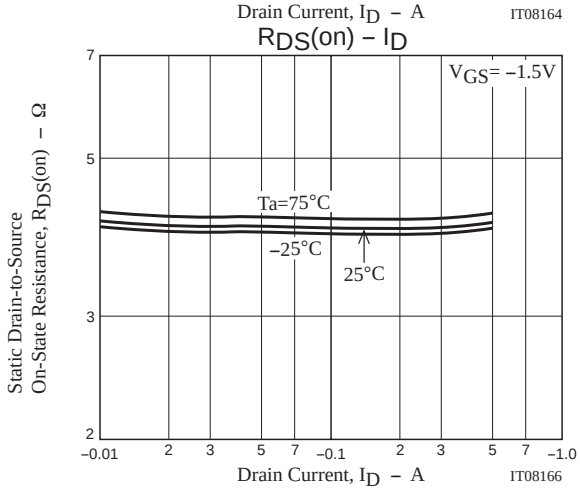


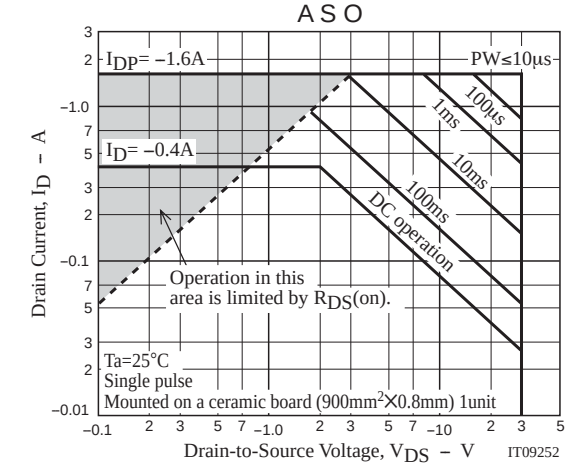


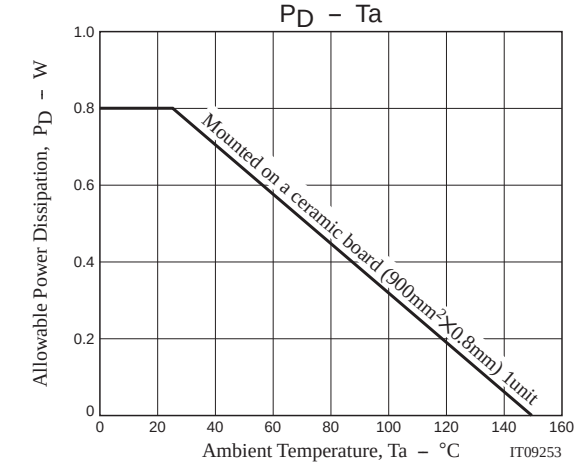












Note on usage : Since the MCH6629 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.