



SANYO Semiconductors

DATA SHEET

P-Channel Silicon MOSFET

ECH8671 — General-Purpose Switching Device Applications

Features

- 1.8V drive.
- Composite type, facilitating high-density mounting.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-12	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-3.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-30	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (1200mm ² ×0.8mm) 1unit	1.3	W
Total Power Dissipation	P _T	When mounted on ceramic substrate (1200mm ² ×0.8mm)	1.5	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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) _{DSS}	I _D =-1mA, V _{GS} =0V	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0V			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-6V, I _D =-1mA	-0.4		-1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-6V, I _D =-1.5A	2.7	4.6		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-1.5A, V _{GS} =-4.5V		59	77	mΩ
	R _{DS(on)2}	I _D =-1A, V _{GS} =-2.5V		90	126	mΩ
	R _{DS(on)3}	I _D =-0.5A, V _{GS} =-1.8V		145	215	mΩ

Marking : TS

Continued on next page.

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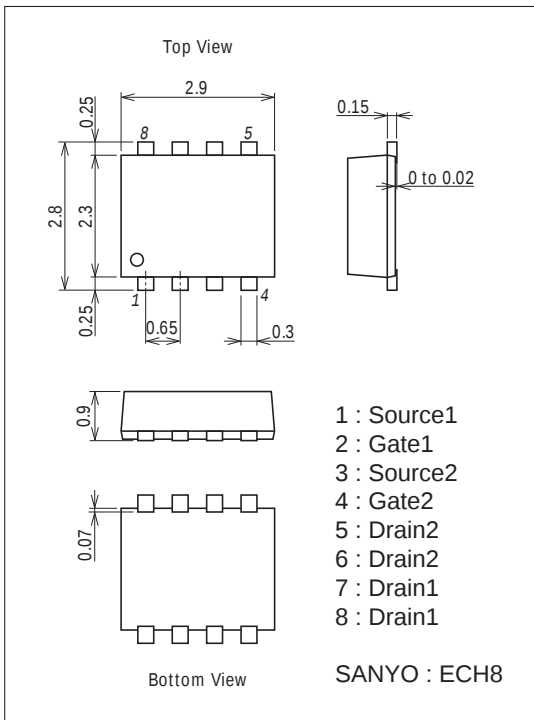
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Parameter	Symbol	Conditions	Ratings			Unit
Input Capacitance	Ciss	$V_{DS} = -6V, f = 1MHz$		330		pF
Output Capacitance	Coss	$V_{DS} = -6V, f = 1MHz$		110		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -6V, f = 1MHz$		88		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		7.1		ns
Rise Time	t_r	See specified Test Circuit.		30		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		31		ns
Fall Time	t_f	See specified Test Circuit.		32		ns
Total Gate Charge	Qg	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -3.5A$		3.9		nC
Gate-to-Source Charge	Qgs	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -3.5A$		0.6		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -3.5A$		1.1		nC
Diode Forward Voltage	V_{SD}	$I_S = -3.5A, V_{GS} = 0V$		-0.85	-1.2	V

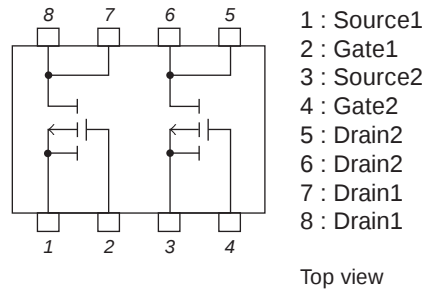
Package Dimensions

unit : mm (typ)

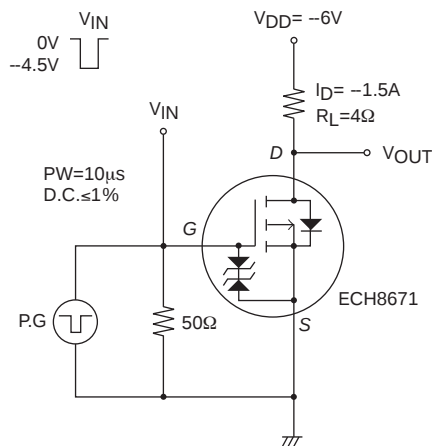
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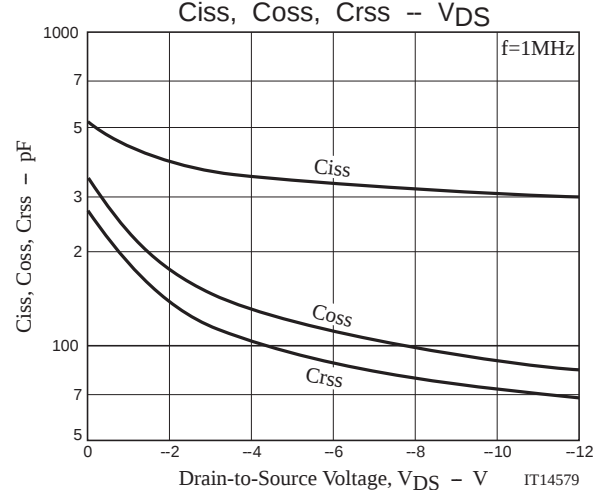
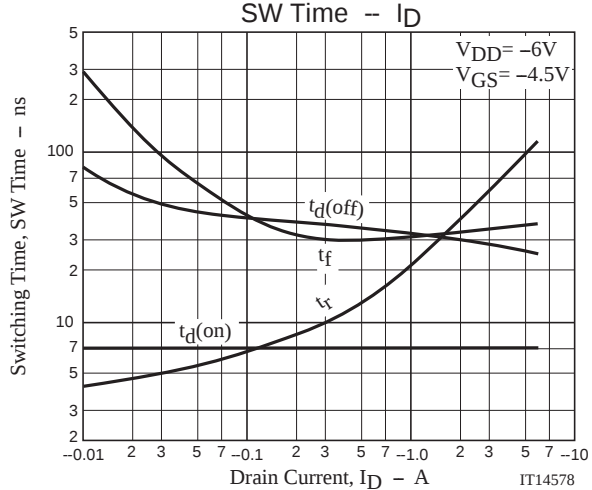
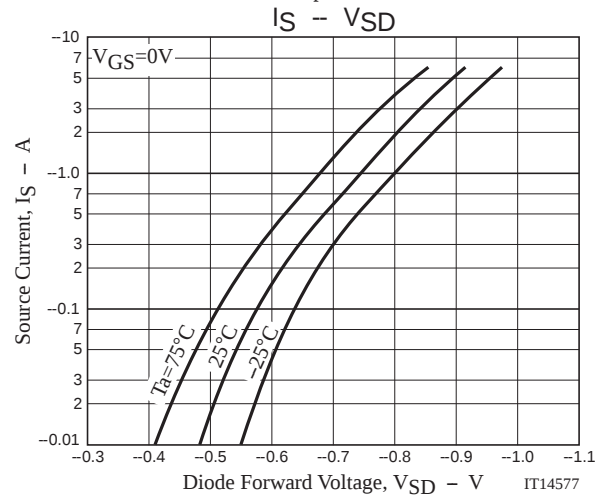
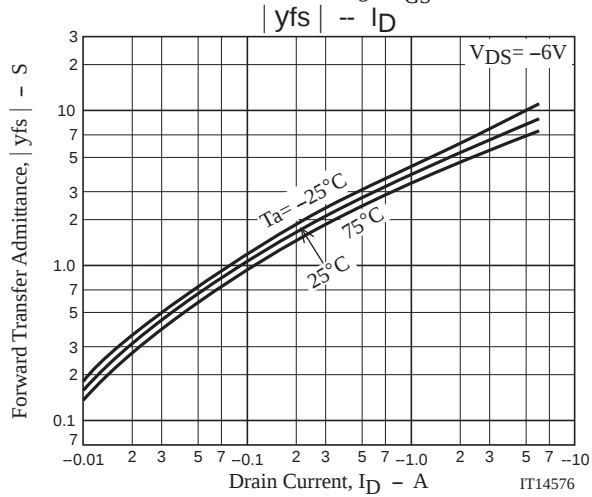
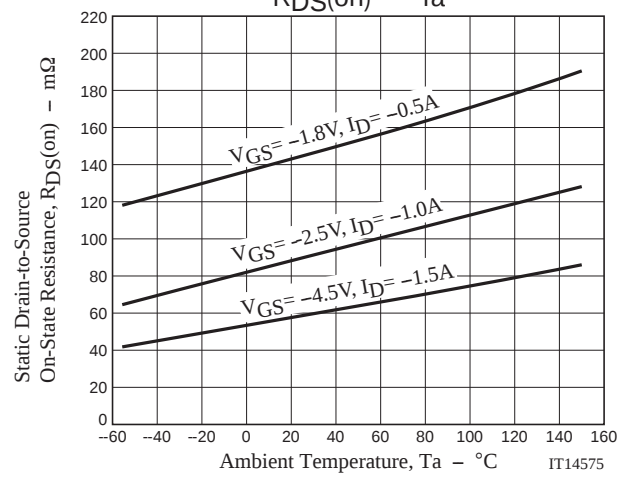
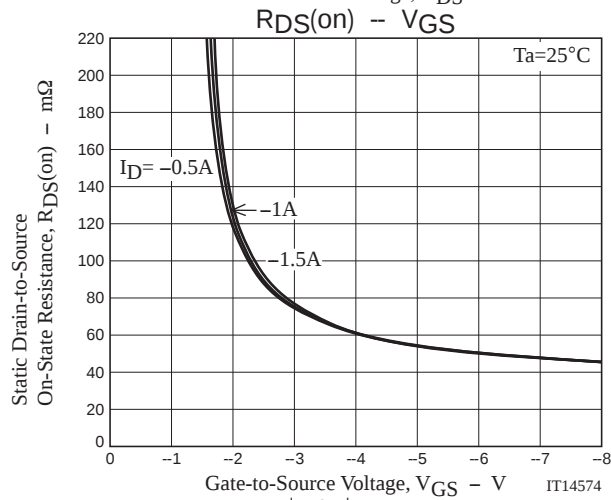
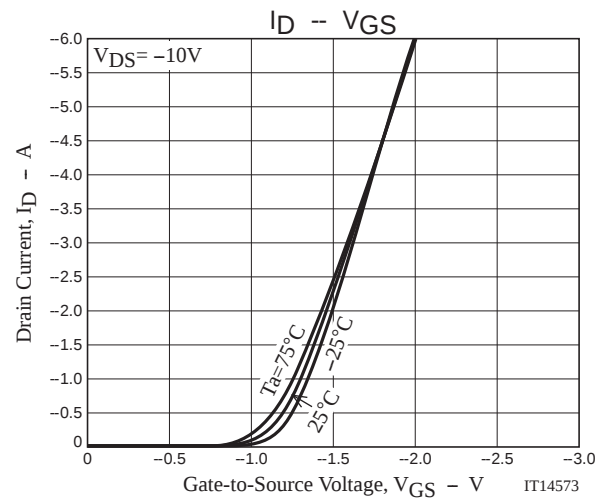
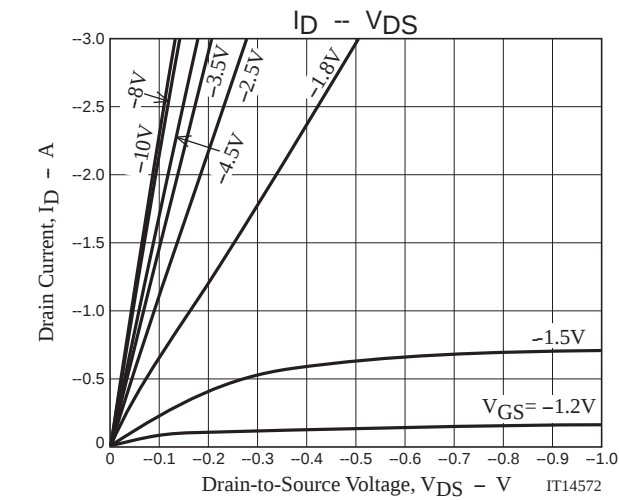


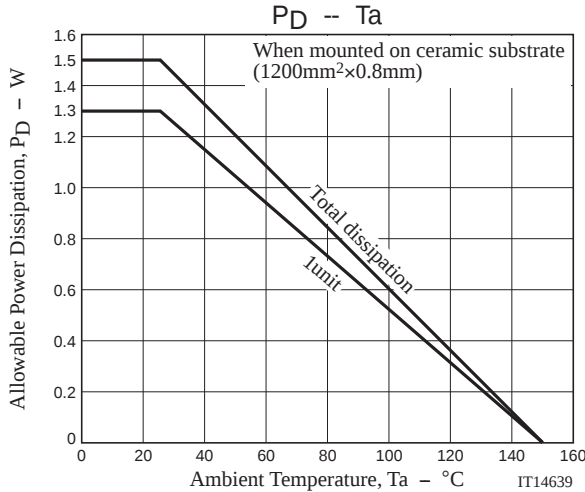
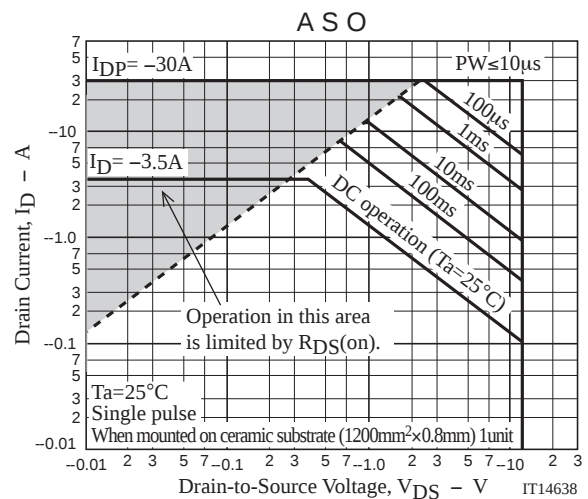
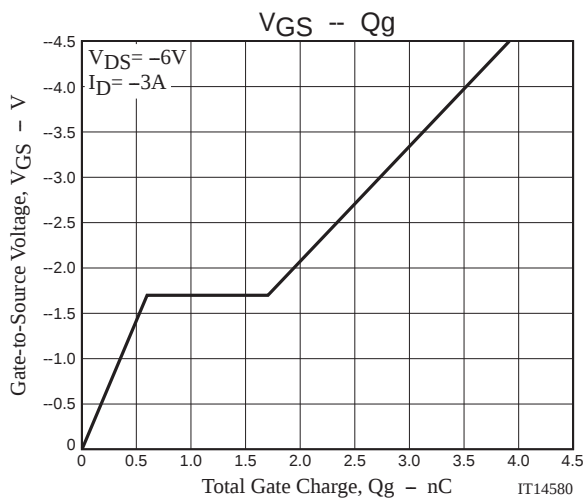
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the ECH8671 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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