



# SANYO Semiconductors

## DATA SHEET

P-Channel Silicon MOSFET

# ECH8305 — General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- 4V drive.

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings		Unit
Drain-to-Source Voltage	V <sub>DSS</sub>			-60	V
Gate-to-Source Voltage	V <sub>GSS</sub>			±20	V
Drain Current (DC)	I <sub>D</sub>			-4	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%		-20	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> ×0.8mm)		1.6	W
Channel Temperature	T <sub>ch</sub>			150	°C
Storage Temperature	T <sub>stg</sub>			-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>D</sub> =-60V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>D</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>D</sub> =-10V, I <sub>D</sub> =-1mA	-1.0		-2.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>D</sub> =-10V, I <sub>D</sub> =-2A	4.3	7.3		S
Static Drain-to-Source On-State Resistance	R <sub>D(on)1</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-10V		62	85	mΩ
	R <sub>D(on)2</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4V		82	115	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>D</sub> =-20V, f=1MHz		1680		pF
Output Capacitance	C <sub>oss</sub>	V <sub>D</sub> =-20V, f=1MHz		122		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>D</sub> =-20V, f=1MHz		102		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		15		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		17		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		185		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		65		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>D</sub> =-30V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-4A		34		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>D</sub> =-30V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-4A		4.5		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>D</sub> =-30V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-4A		5.8		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-4A, V <sub>GS</sub> =0		-0.81	-1.2	V

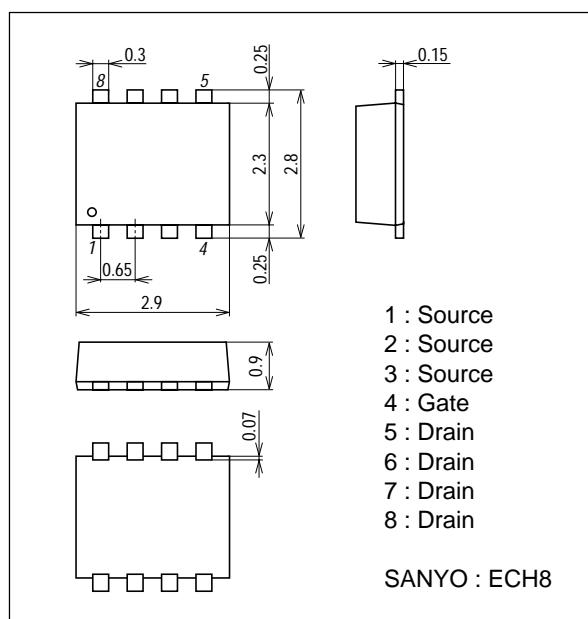
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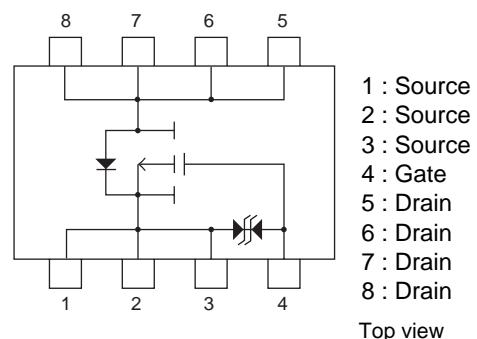
## Package Dimensions

unit : mm

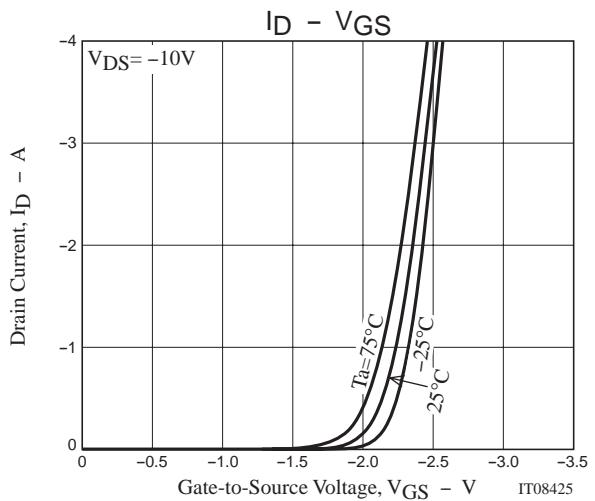
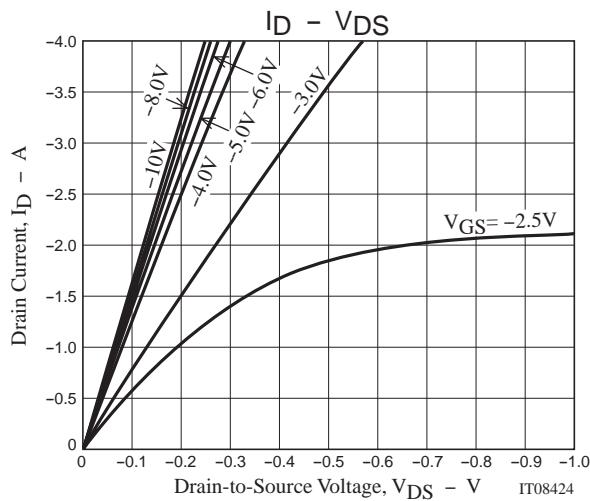
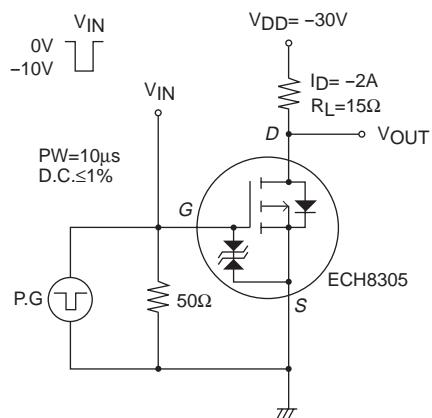
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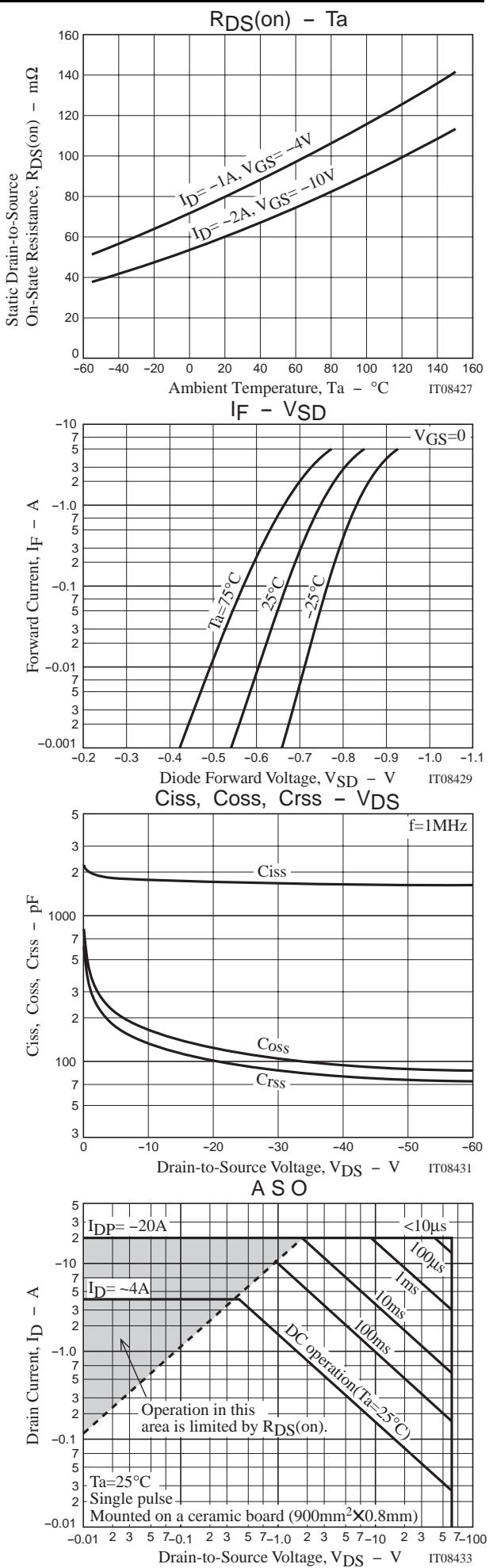
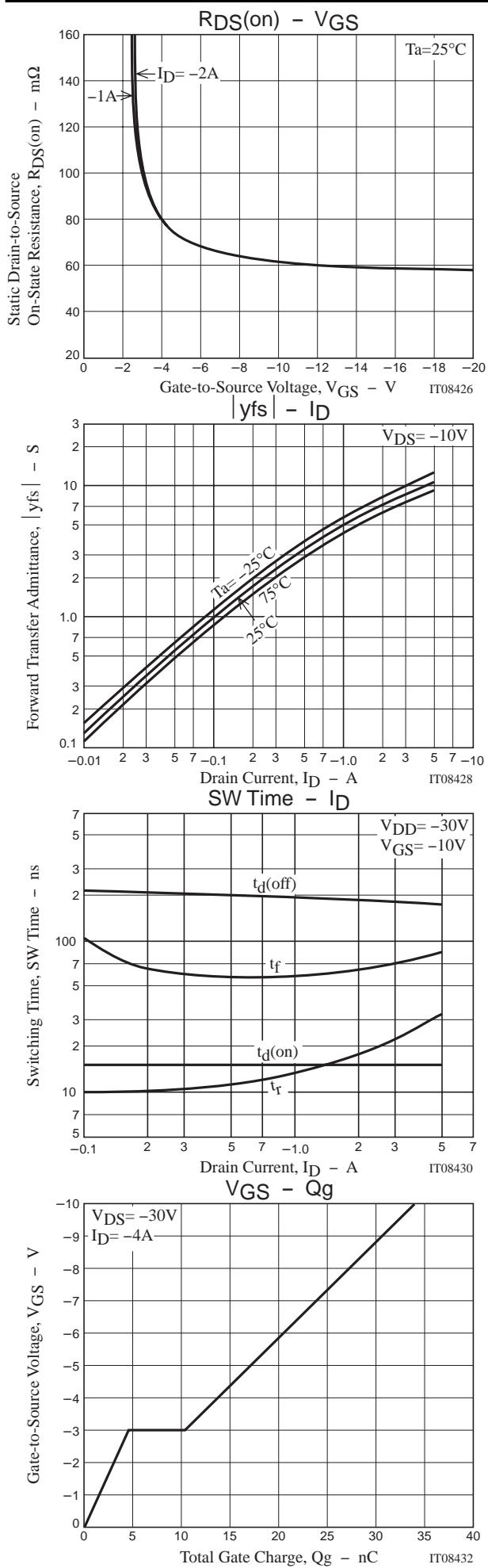


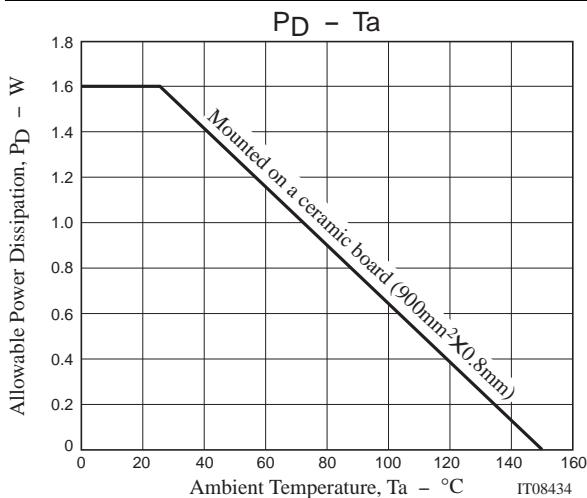
## Electrical Connection



## Switching Time Test Circuit







Note on usage : Since the ECH8305 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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