



SANYO Semiconductors

## DATA SHEET

# ECH8315 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- 4V drive.
- Halogen free compliance.

### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-7.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycles≤1%	-40	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.5	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> =0V	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>D</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>D</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>D</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>D</sub> =-10V, I <sub>D</sub> =-3.5A	5	8.4		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-3.5A, V <sub>GS</sub> =-10V		19	25	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-4.5V		31	44	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-4V		35	49	mΩ

Marking : JS

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# ECH8315

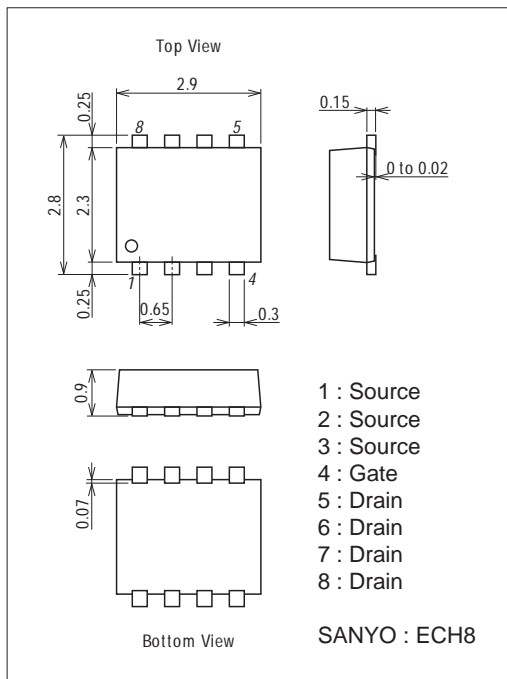
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS} = -10V, f = 1MHz$		875		pF
Output Capacitance	Coss	$V_{DS} = -10V, f = 1MHz$		200		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = -10V, f = 1MHz$		150		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		8.1		ns
Rise Time	$t_r$	See specified Test Circuit.		33		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		92		ns
Fall Time	$t_f$	See specified Test Circuit.		60		ns
Total Gate Charge	Qg	$V_{DS} = -15V, V_{GS} = -10V, I_D = -7.5A$		18		nC
Gate-to-Source Charge	Qgs	$V_{DS} = -15V, V_{GS} = -10V, I_D = -7.5A$		2.1		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS} = -15V, V_{GS} = -10V, I_D = -7.5A$		4.7		nC
Diode Forward Voltage	VSD	$I_S = -7.5A, V_{GS} = 0V$		-0.82	-1.2	V

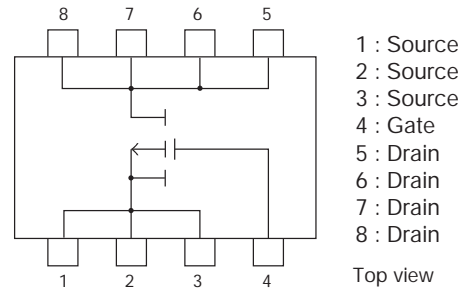
## Package Dimensions

unit : mm (typ)

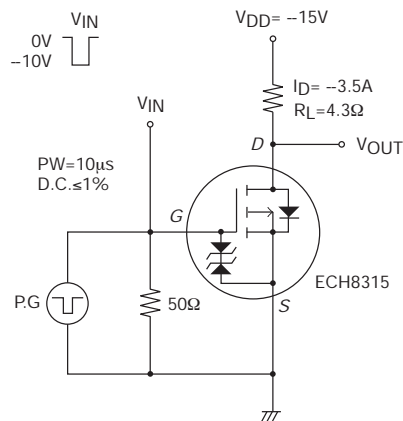
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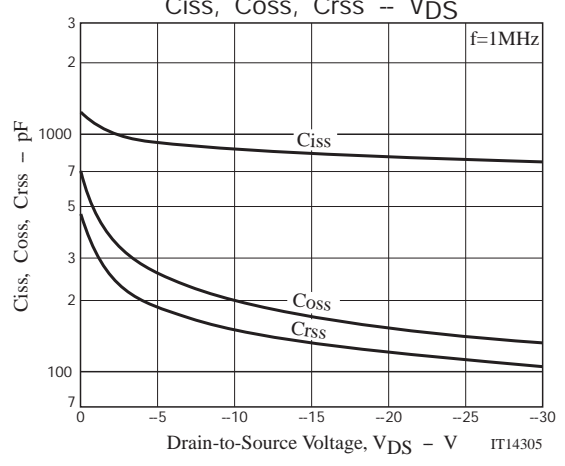
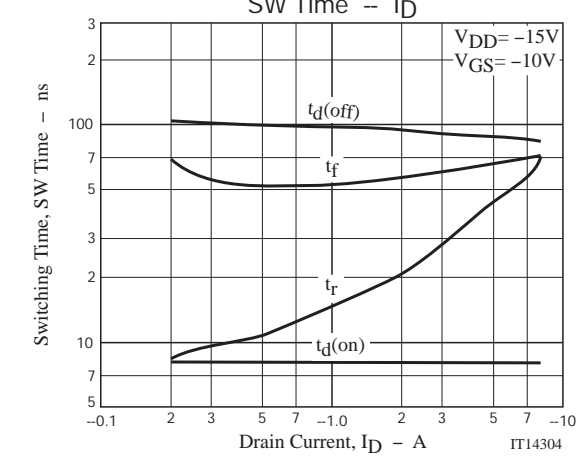
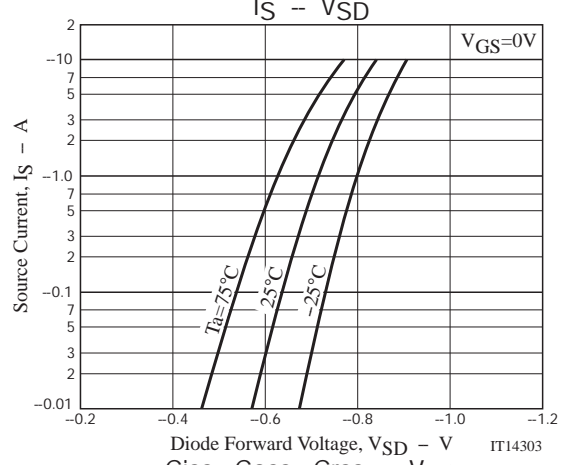
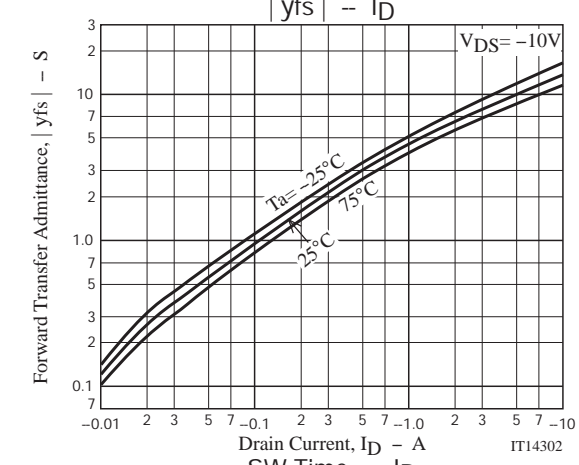
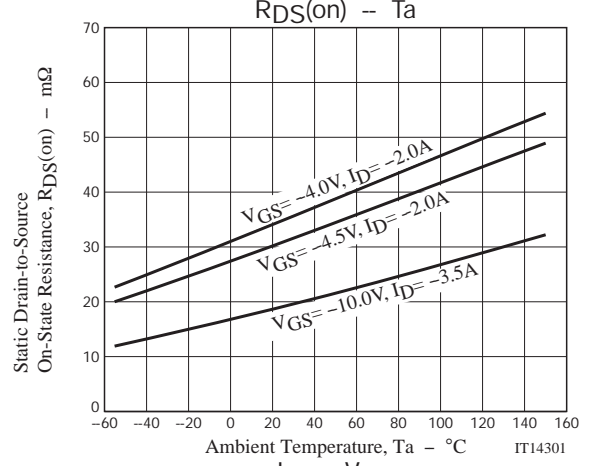
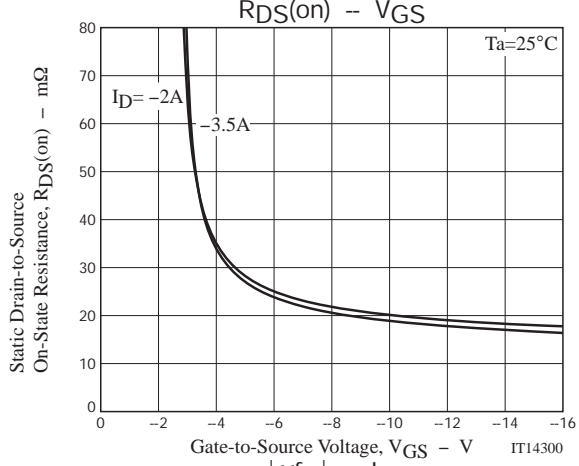
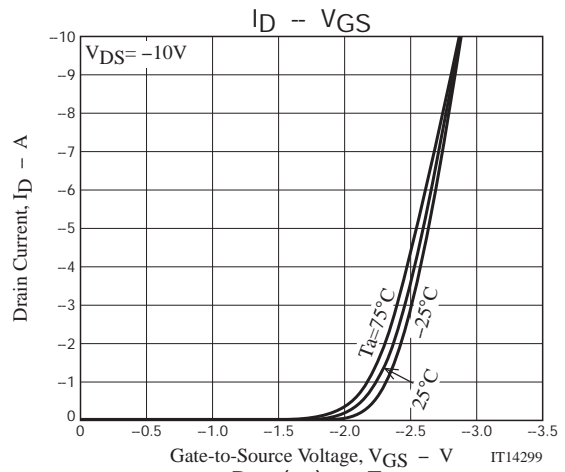
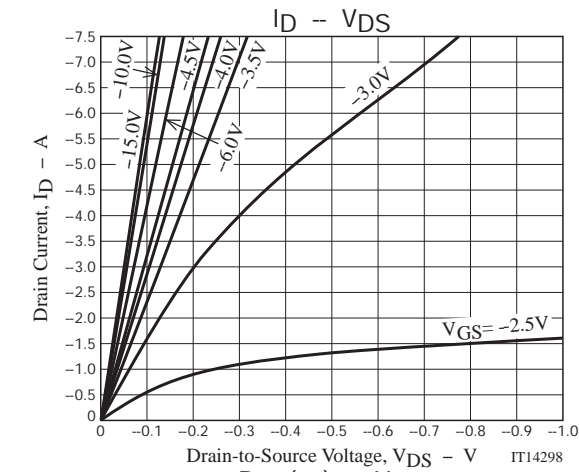


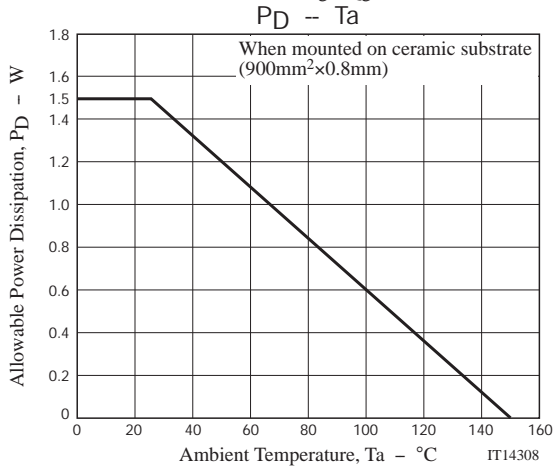
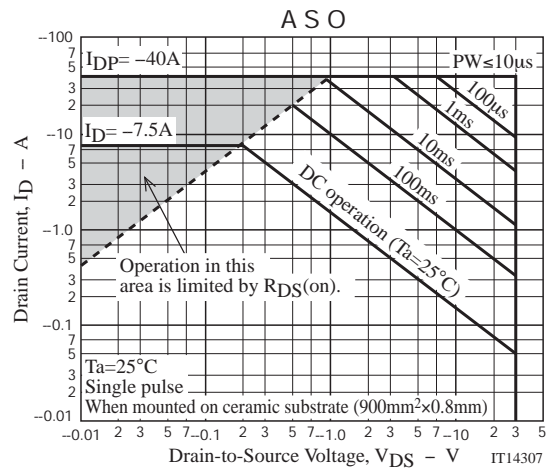
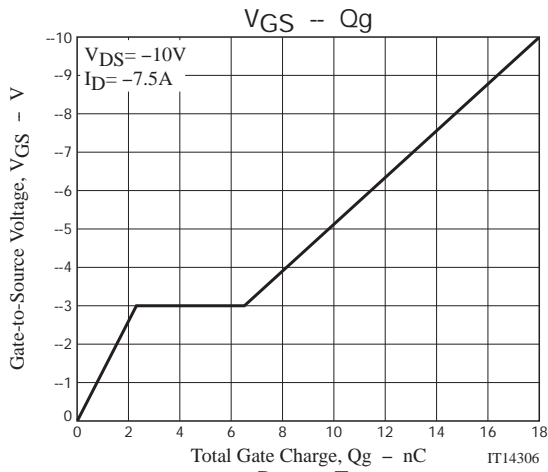
## Electrical Connection



## Switching Time Test Circuit







Note on usage : Since the ECH8315 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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