



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 $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-30	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-7.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-40	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.5	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -3.5\text{A}$	5	8.4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -3.5\text{A}$, $V_{GS} = -10\text{V}$		19	25	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -2\text{A}$, $V_{GS} = -4.5\text{V}$		31	44	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -2\text{A}$, $V_{GS} = -4\text{V}$		35	49	$\text{m}\Omega$

Marking : JS

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ECH8315

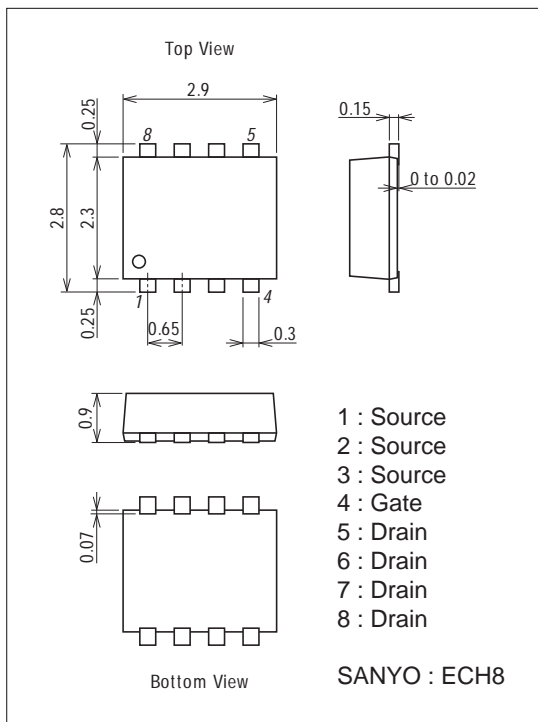
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		875		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		200		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		150		pF
Turn-ON Delay Time	$t_{d(on)}$	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

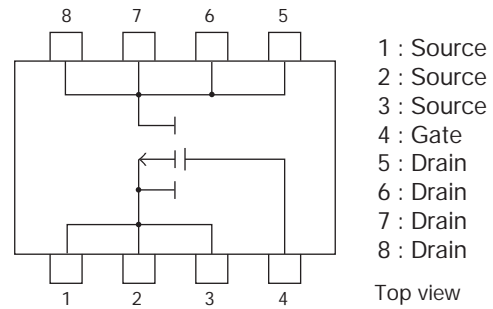
Package Dimensions

unit : mm (typ)

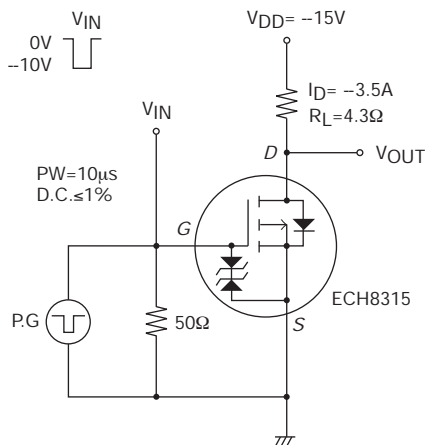
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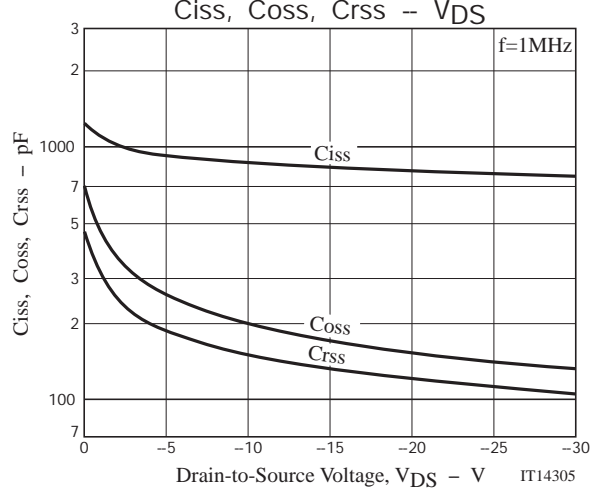
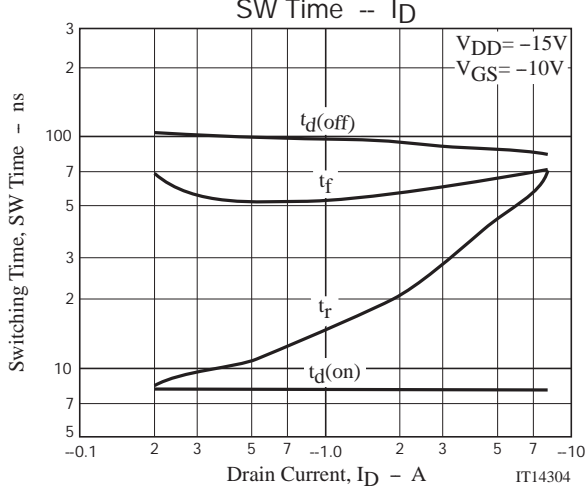
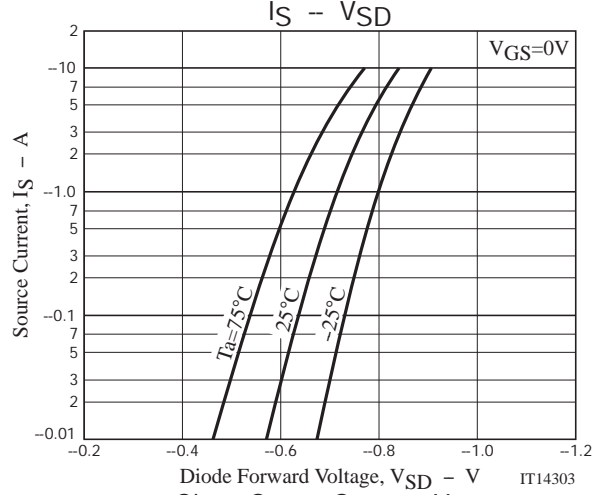
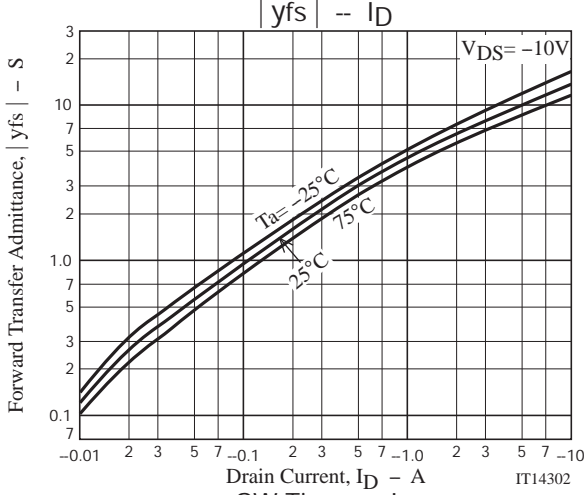
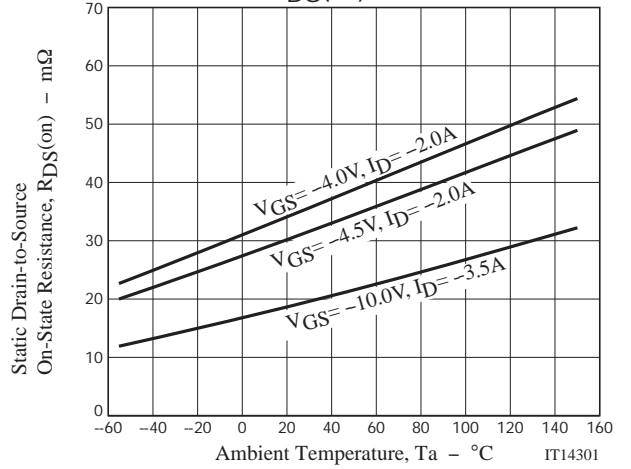
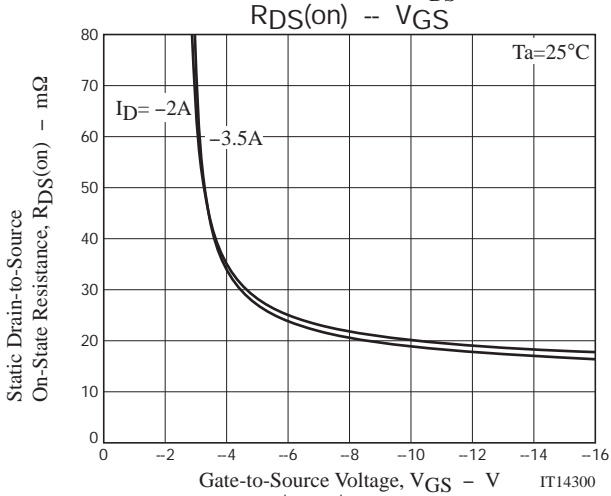
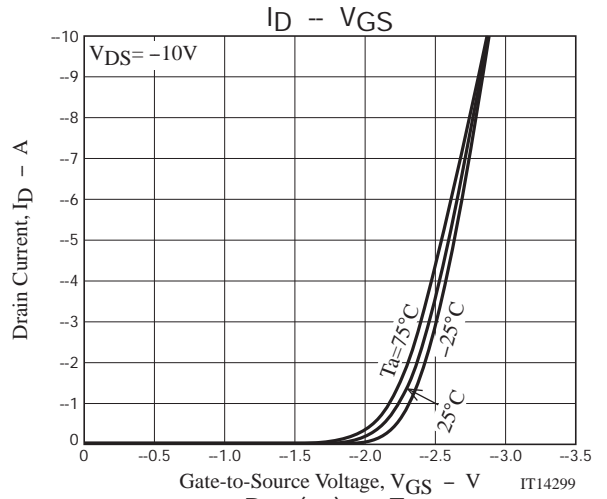
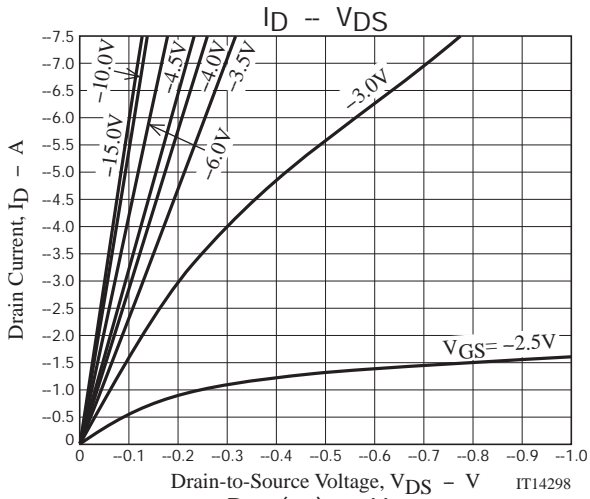


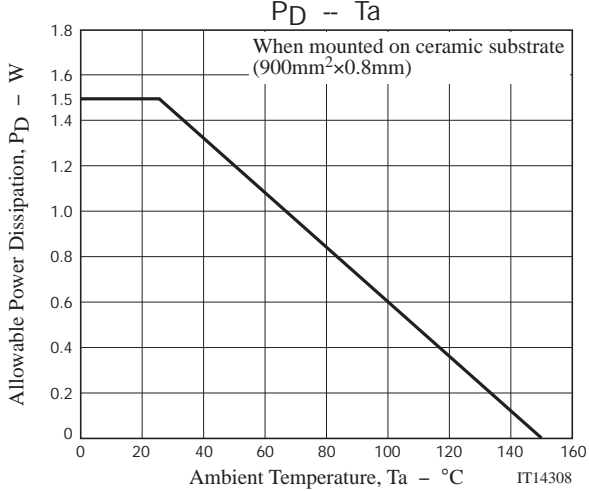
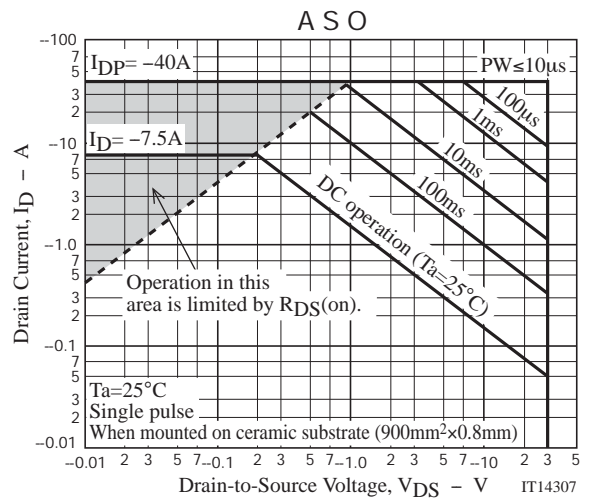
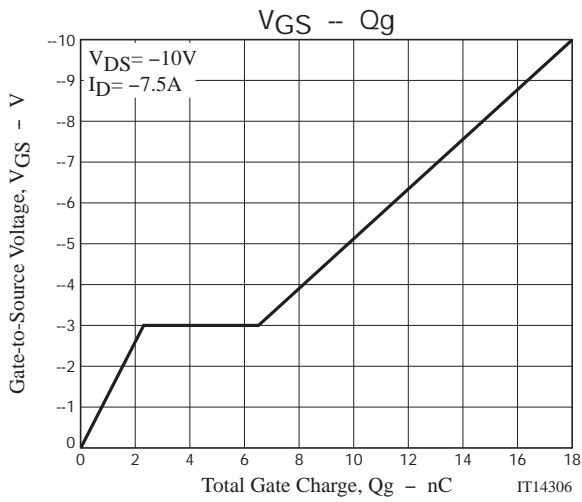
Electrical Connection



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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