

ECH8310

P-Channel Silicon MOSFET — General-Purpose Switching Device Applications

Features

- 4V drive.
- Halogen free compliance.

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	V _{GSS}		±20	V
Drain Current (DC)	I _D		-9	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycles≤1%	-60	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm 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	-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} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-4.5A		12		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-4.5A, V _{GS} =-10V	9	13	17	mΩ
	R _{DS(on)2}	I _D =-2A, V _{GS} =-4.5V	12	20	28	mΩ
	R _{DS(on)3}	I _D =-2A, V _{GS} =-4.0V	13.5	23	32.5	mΩ

Marking : JM

Continued on next page.

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ECH8310

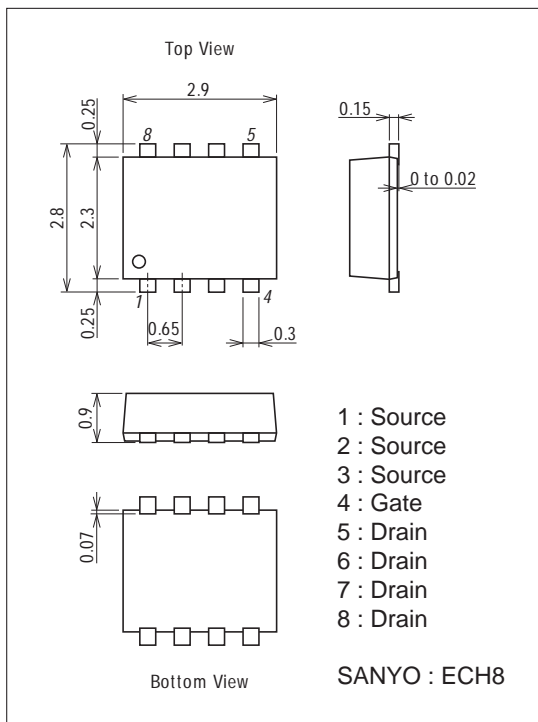
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-10V, f=1MHz$		1400		pF
Output Capacitance	Coss	$V_{DS}=-10V, f=1MHz$		350		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-10V, f=1MHz$		250		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	t_r	See specified Test Circuit.		45		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		134		ns
Fall Time	t_f	See specified Test Circuit.		87		ns
Total Gate Charge	Qg	$V_{DS}=-15V, V_{GS}=-10V, I_D=-9A$		28		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-15V, V_{GS}=-10V, I_D=-9A$		4		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-15V, V_{GS}=-10V, I_D=-9A$		6		nC
Diode Forward Voltage	VSD	$I_S=-9A, V_{GS}=0V$		-0.8	-1.2	V

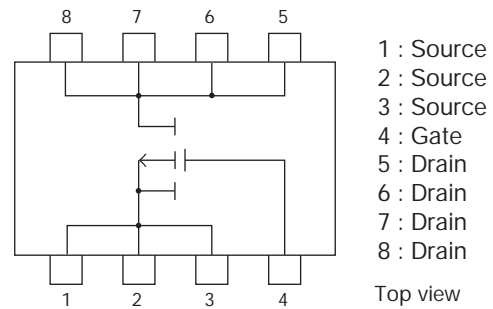
Package Dimensions

unit : mm (typ)

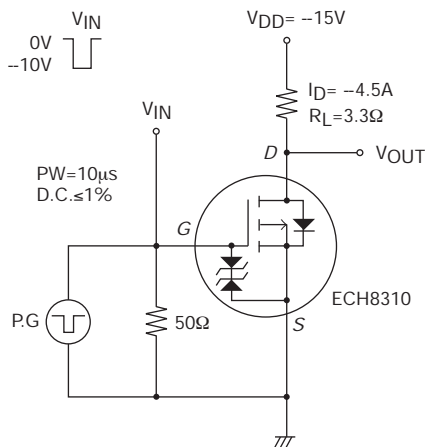
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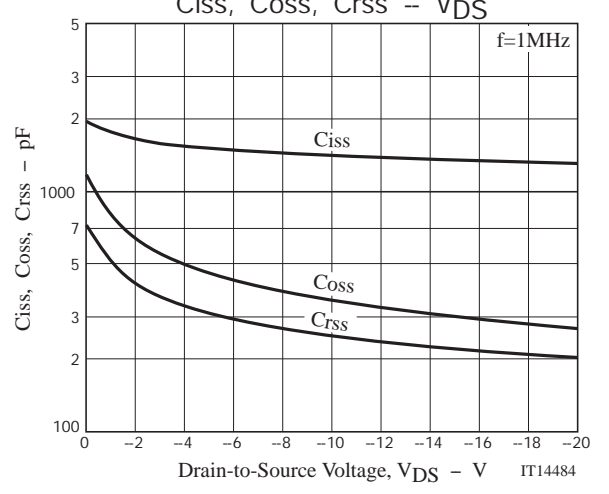
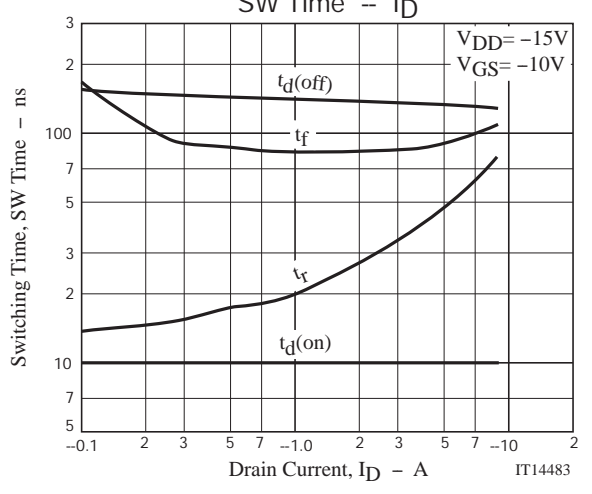
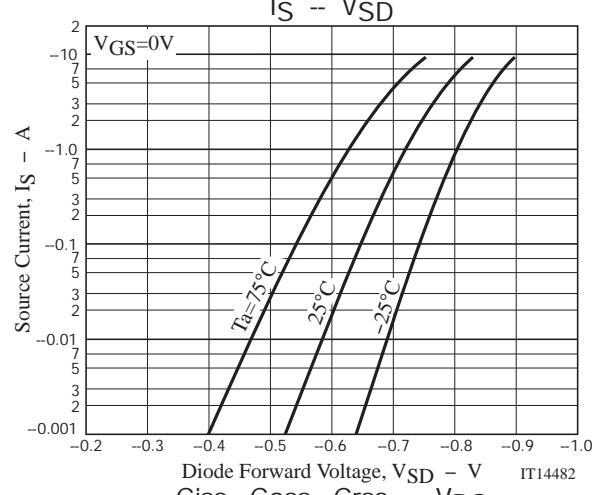
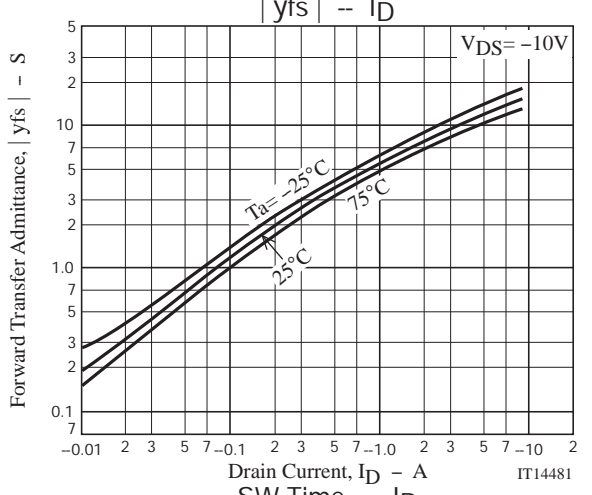
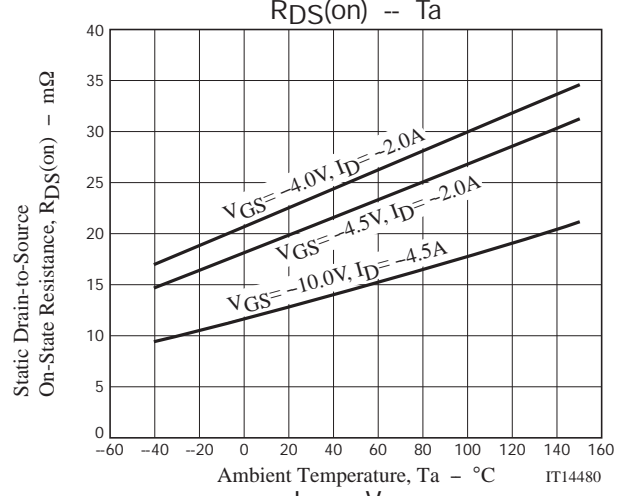
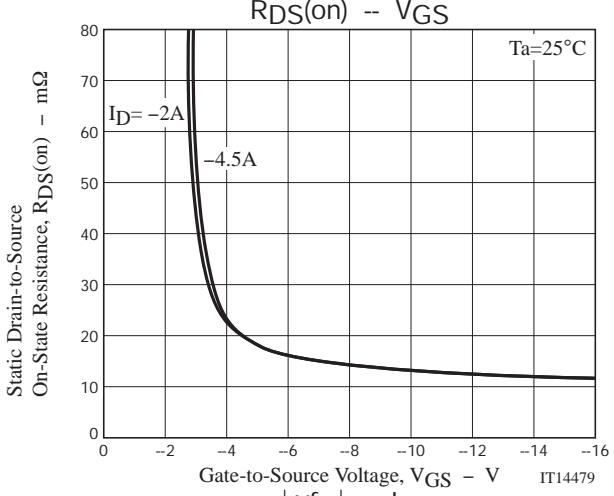
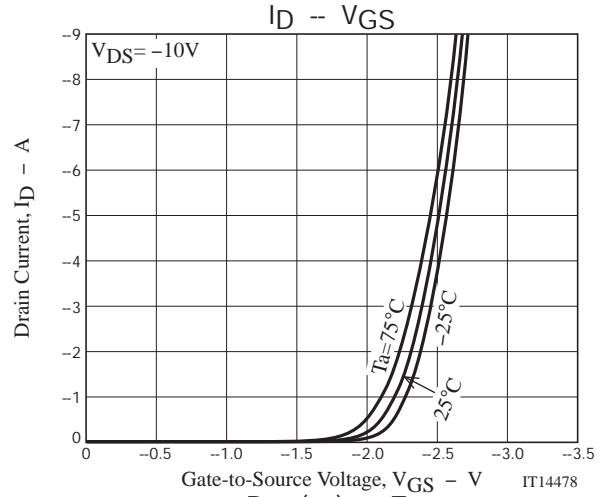
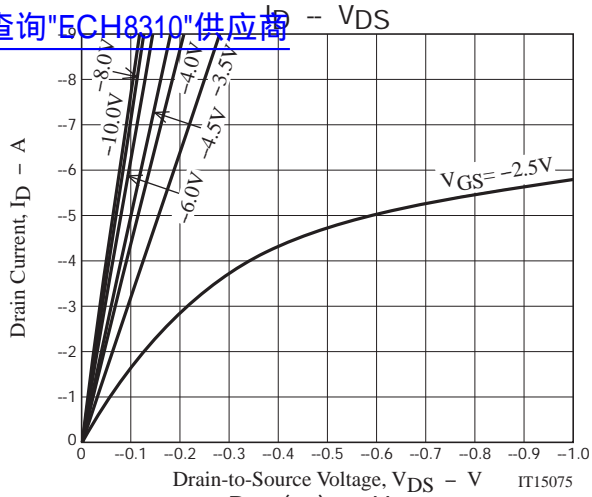
Electrical Connection

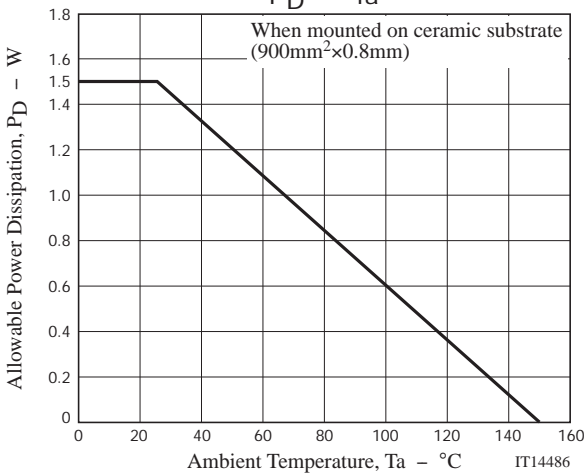
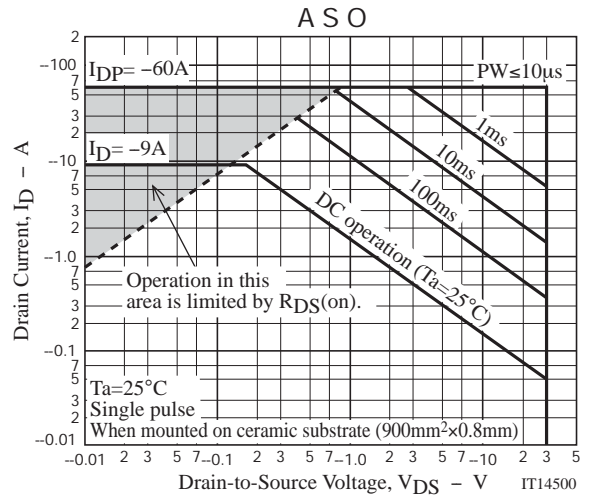
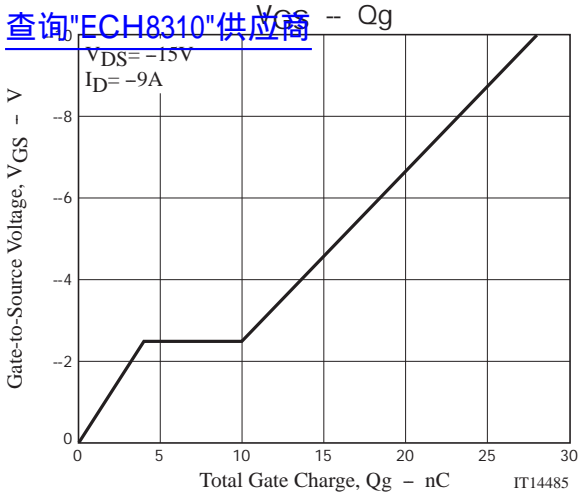


Switching Time Test Circuit



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Note on usage : Since the ECH8310 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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