



SANYO Semiconductors

DATA SHEET

P-Channel Silicon MOSFET

ECH8611—General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

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}		±9	V
Drain Current (DC)	I _D		-5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-40	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board(900mm²×0.8mm)1unit	1.3	W
Total Power Dissipation	P _T	Mounted on a ceramic board(900mm²×0.8mm)	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} =0	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} = -12V, V _{GS} =0			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±7.2V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} = -6V, I _D = -1mA	-0.3		-1.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} = -6V, I _D = -2.5A	6.6	9.5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D = -2A, V _{GS} = -4.5V		30	40	mΩ
	R _{DS(on)2}	I _D = -1A, V _{GS} = -2.5V		45	65	mΩ
	R _{DS(on)3}	I _D = -0.5A, V _{GS} = -1.8V		66	95	mΩ
Input Capacitance	C _{iss}	V _{DS} = -6V, f=1MHz		1230		pF
Output Capacitance	C _{oss}	V _{DS} = -6V, f=1MHz		380		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} = -6V, f=1MHz		330		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		16		ns
Rise Time	t _r	See specified Test Circuit.		190		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		110		ns
Fall Time	t _f	See specified Test Circuit.		120		ns

Marking : FD

Continued on next page.

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ECH8611

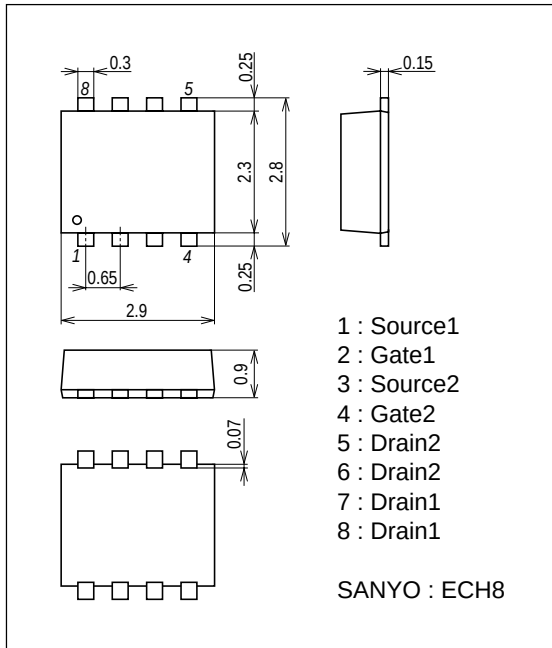
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Q_g	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -5A$		12		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -5A$		1.5		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -5A$		3.7		nC
Diode Forward Voltage	V_{SD}	$I_S = -5A, V_{GS} = 0$		-0.85	-1.5	V

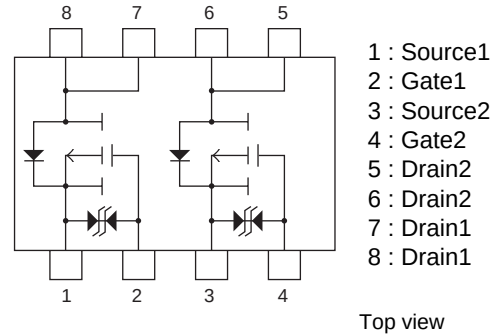
Package Dimensions

unit : mm

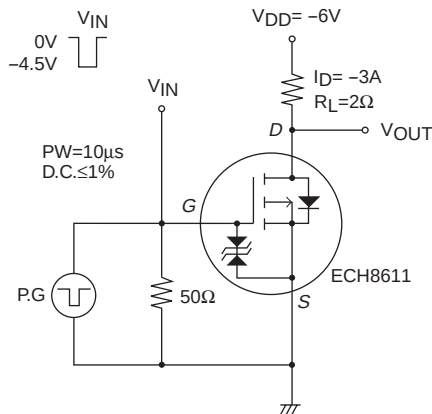
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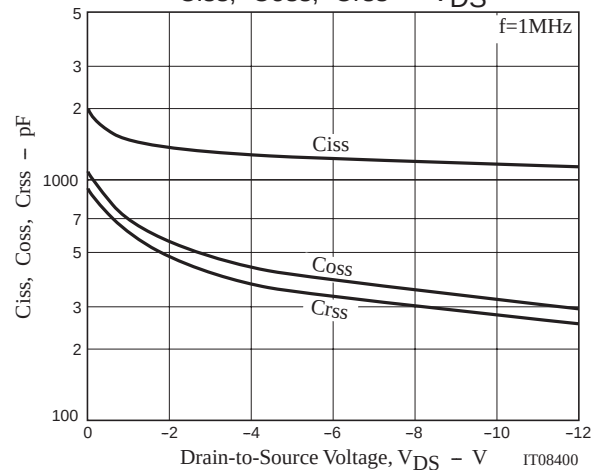
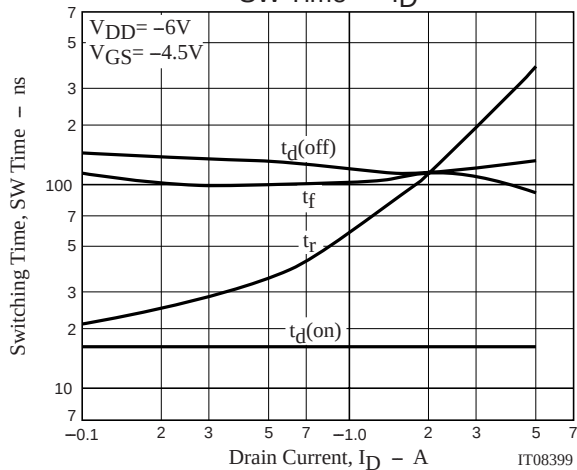
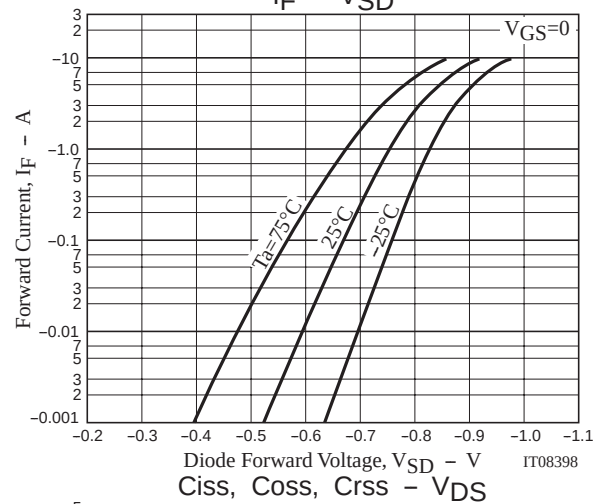
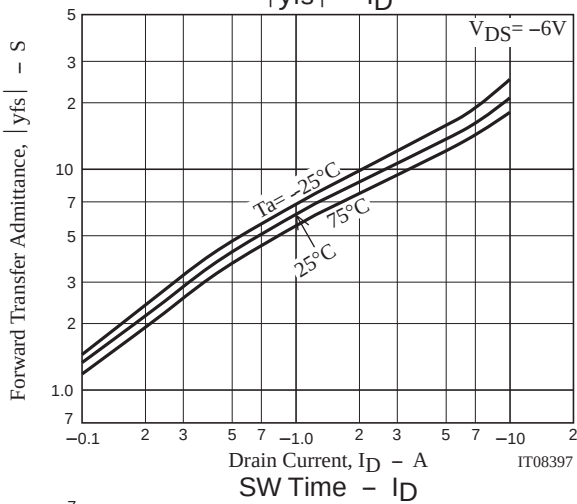
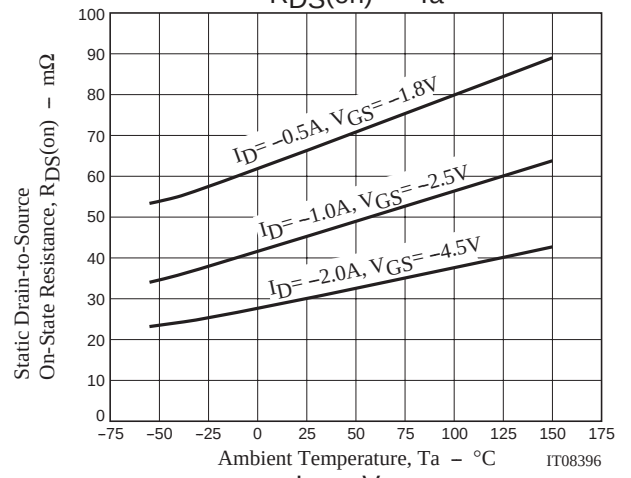
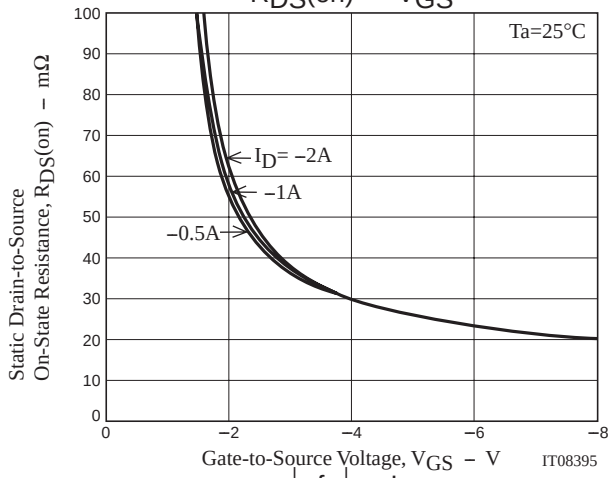
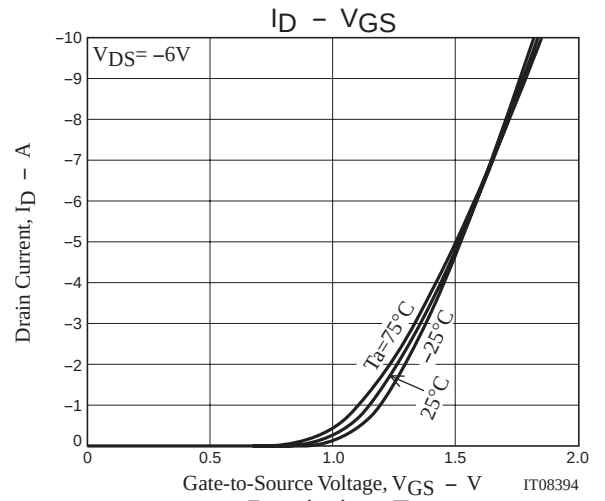
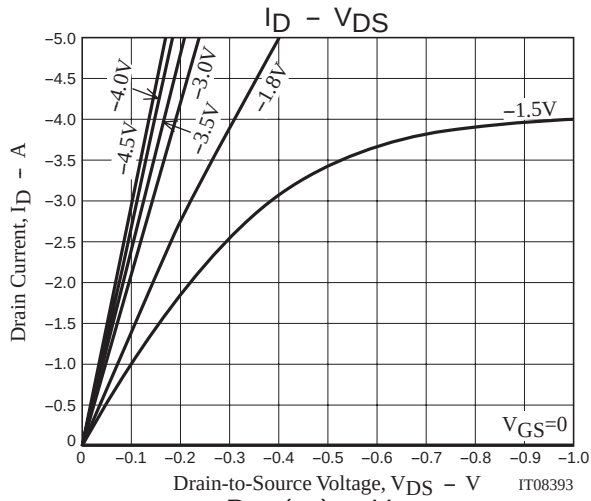


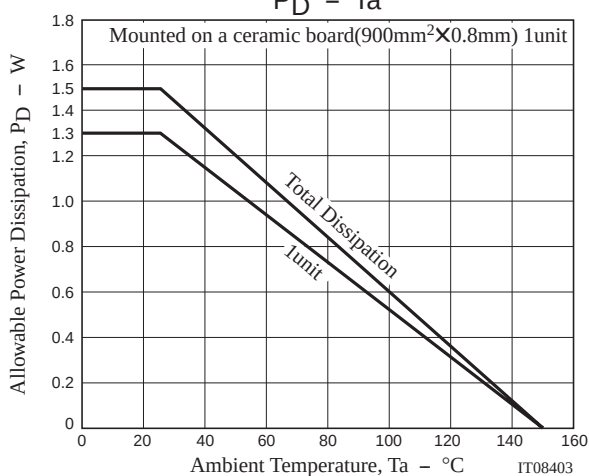
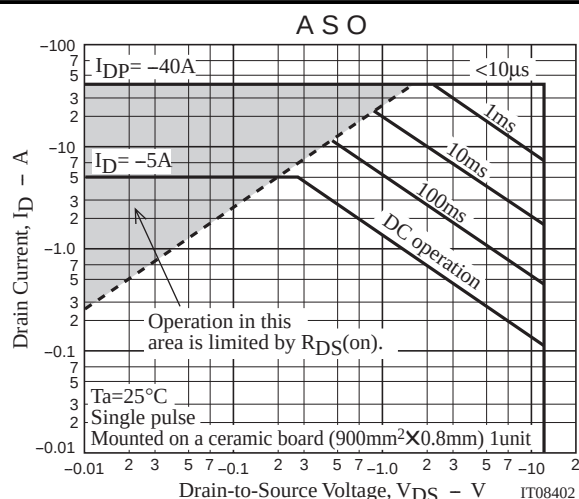
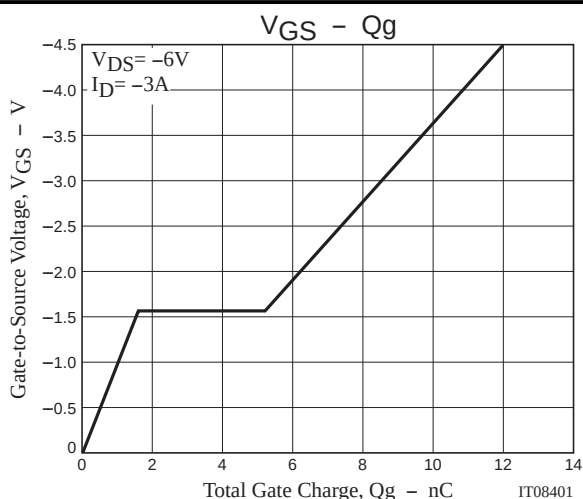
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the ECH8611 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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