



SANYO Semiconductors

DATA SHEET

P-Channel Silicon MOSFET

ECH8654 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 1.8V drive.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-20	V
Gate-to-Source Voltage	V _{GSS}		±10	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 (900mm ² ×0.8mm) 1unit	1.3	W
Total Power Dissipation	P _T	Mounted on a ceramic board (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	-20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-0.4		-1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-3A	4.9	8.3		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-3A, V _{GS} =-4.5V		29	38	mΩ
	R _{DS(on)2}	I _D =-1.5A, V _{GS} =-2.5V		41	58	mΩ
	R _{DS(on)3}	I _D =-0.5A, V _{GS} =-1.8V		64	98	mΩ

Marking : WZ

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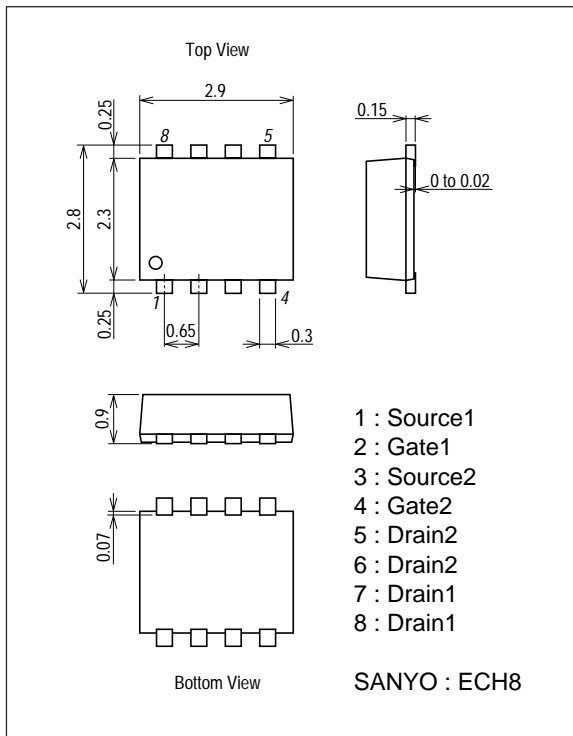
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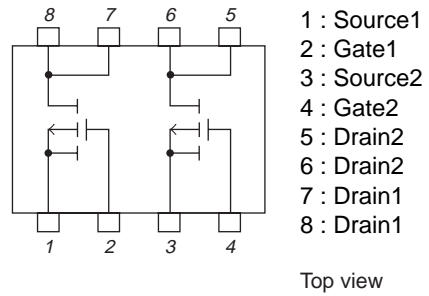
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =-10V, f=1MHz		960		pF
Output Capacitance	Coss	V _{DS} =-10V, f=1MHz		180		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-10V, f=1MHz		140		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		14		ns
Rise Time	t _r	See specified Test Circuit.		55		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		92		ns
Fall Time	t _f	See specified Test Circuit.		68		ns
Total Gate Charge	Qg	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-5A		11		nC
Gate-to-Source Charge	Qgs	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-5A		2.0		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-5A		2.8		nC
Diode Forward Voltage	V _{SD}	I _S =-5A, V _{GS} =0V		-0.82	-1.2	V

Package Dimensions

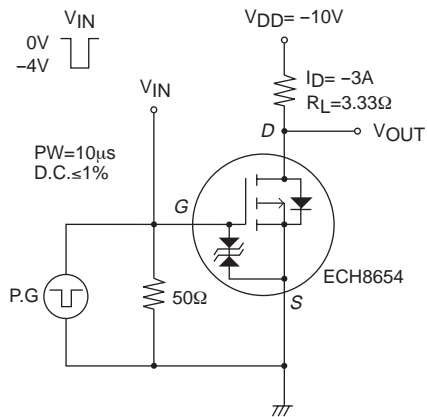
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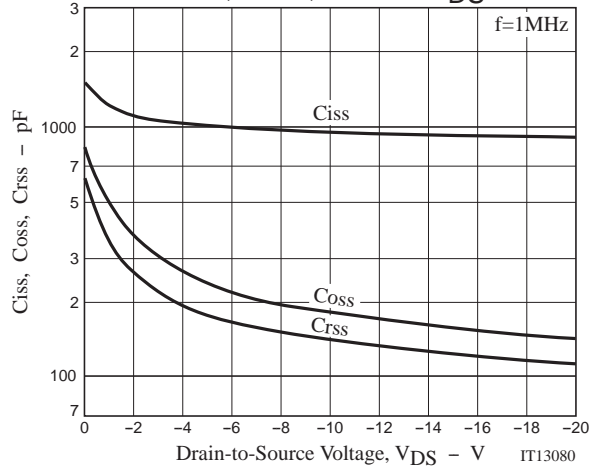
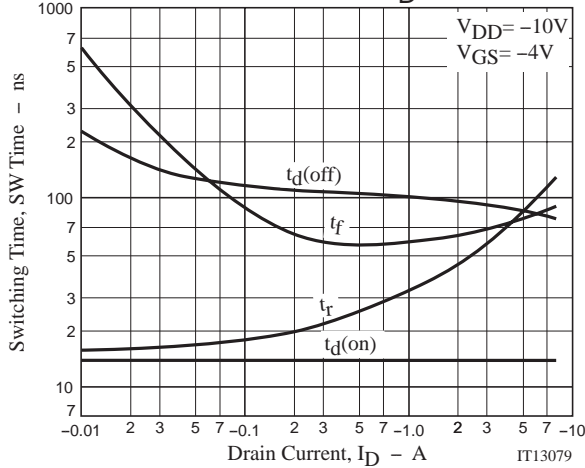
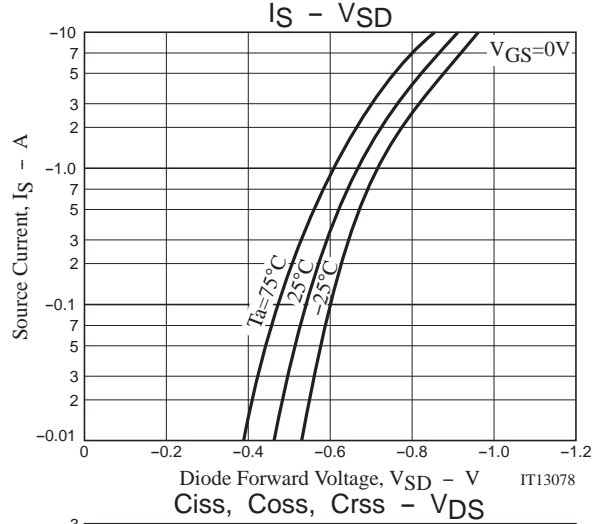
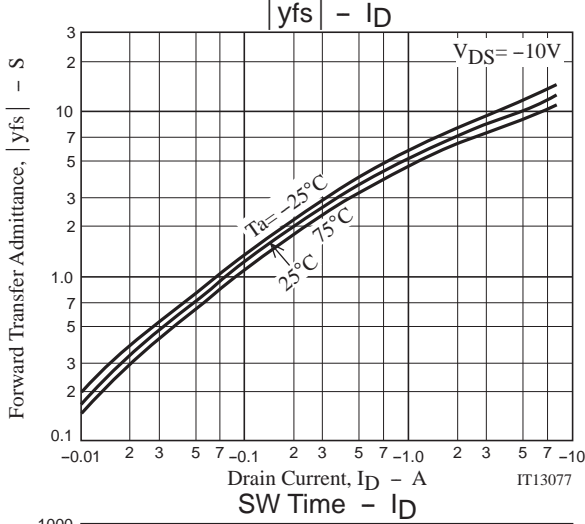
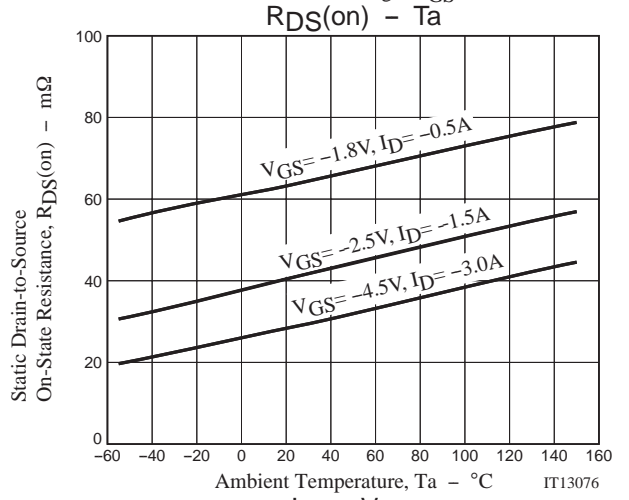
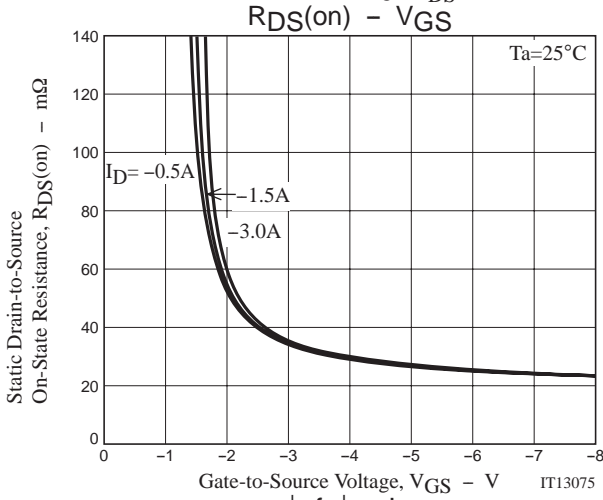
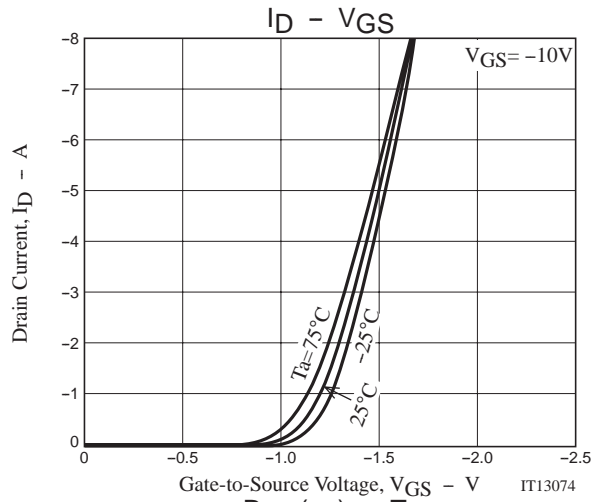
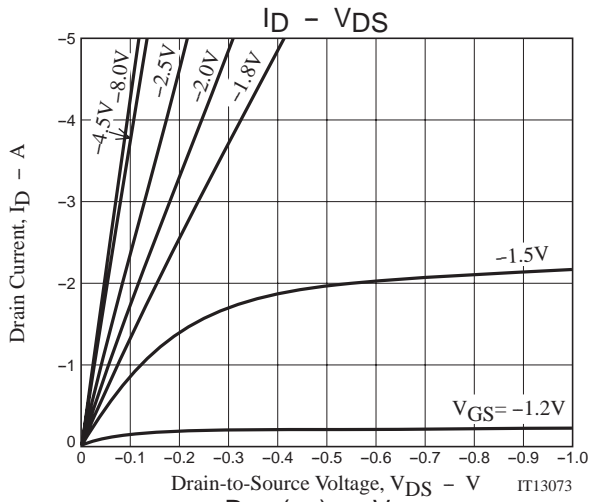


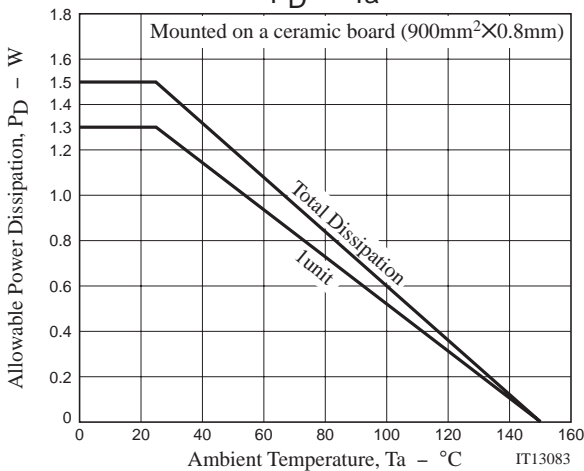
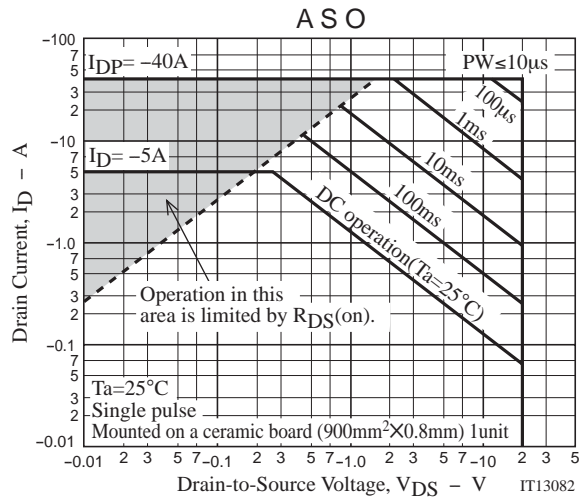
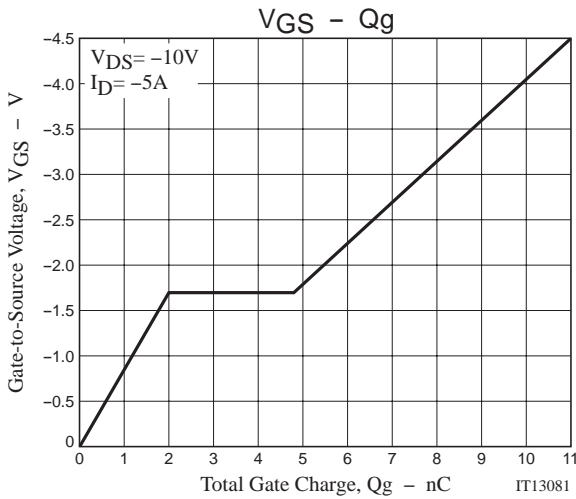
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the ECH8654 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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