



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

ECH8662 — N-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 2.5V drive.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		40	V
Gate-to-Source Voltage	V _{GS}		±10	V
Drain Current (DC)	I _D		6.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	40	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P _T	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	40			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =40V, 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 =3.5A	3.9	6.5		S

Marking : TH

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ECH8662

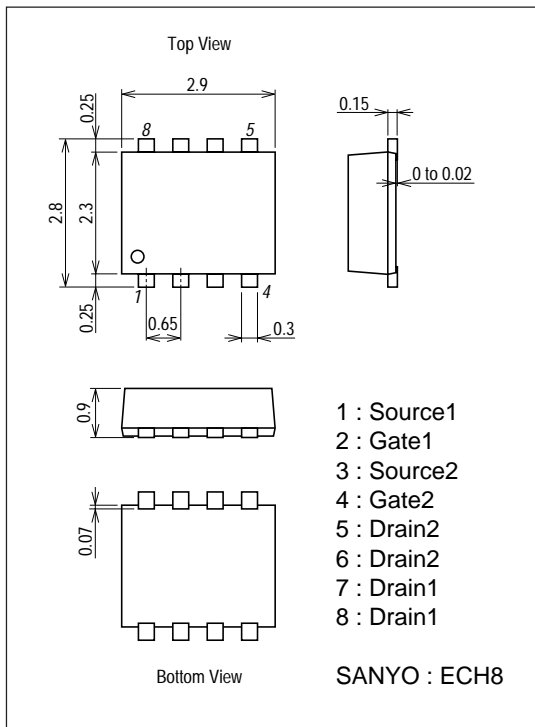
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3.5A, V_{GS}=4.5V$		23	30	$m\Omega$
	$R_{DS(on)2}$	$I_D=3.5A, V_{GS}=4V$		25	33	$m\Omega$
	$R_{DS(on)3}$	$I_D=1.5A, V_{GS}=2.5V$		30	42	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		1130		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		77		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		60		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		14		ns
Rise Time	t_r	See specified Test Circuit.		34		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		93		ns
Fall Time	t_f	See specified Test Circuit.		55		ns
Total Gate Charge	Q_g	$V_{DS}=20V, V_{GS}=4.5V, I_D=6.5A$		12		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=20V, V_{GS}=4.5V, I_D=6.5A$		2.2		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=20V, V_{GS}=4.5V, I_D=6.5A$		3.4		nC
Diode Forward Voltage	V_{SD}	$I_S=6.5A, V_{GS}=0V$		0.85	1.2	V

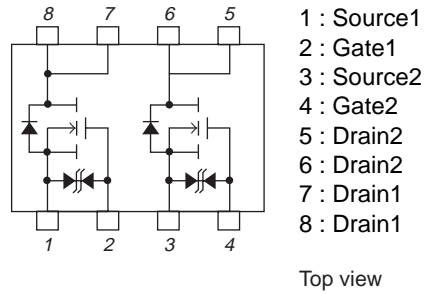
Package Dimensions

unit : mm (typ)

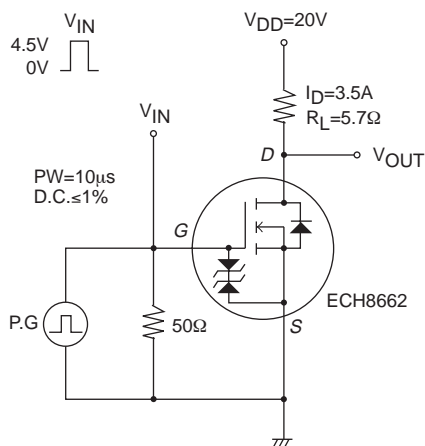
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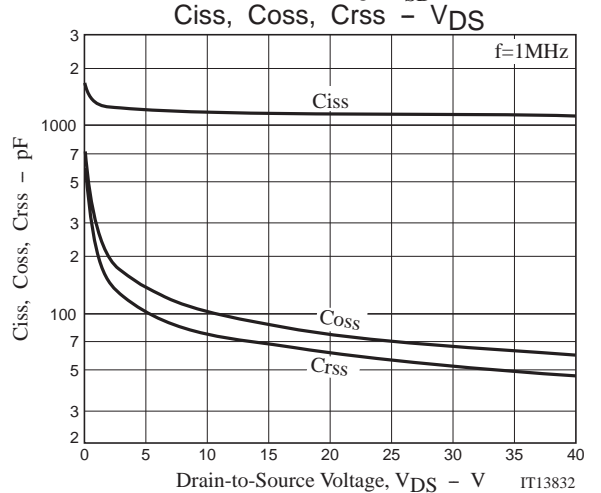
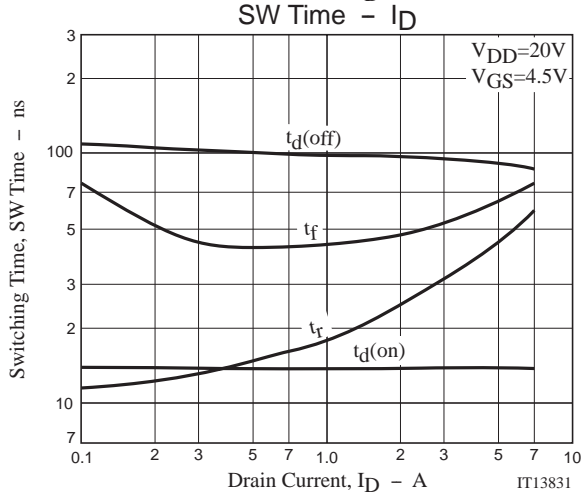
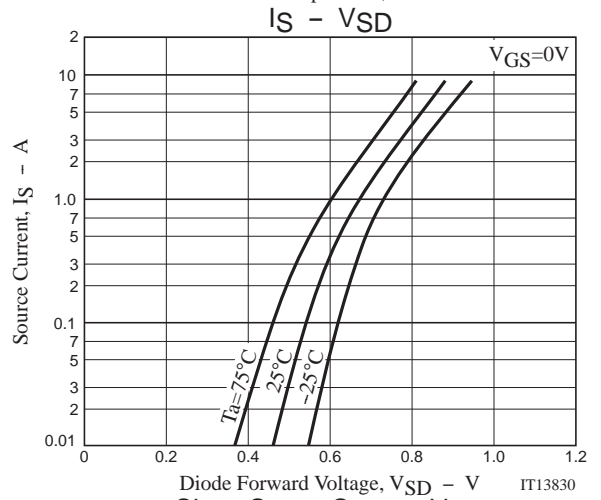
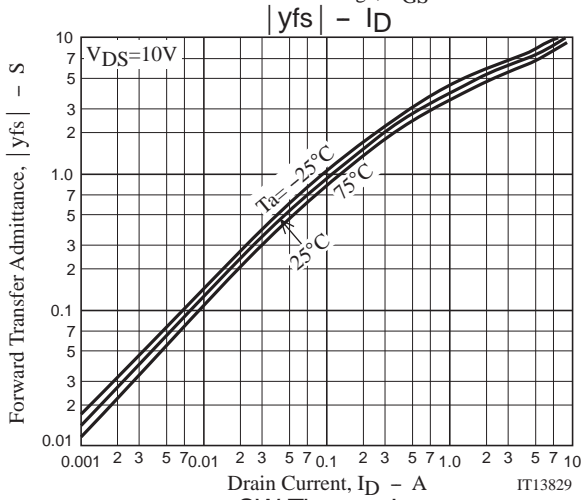
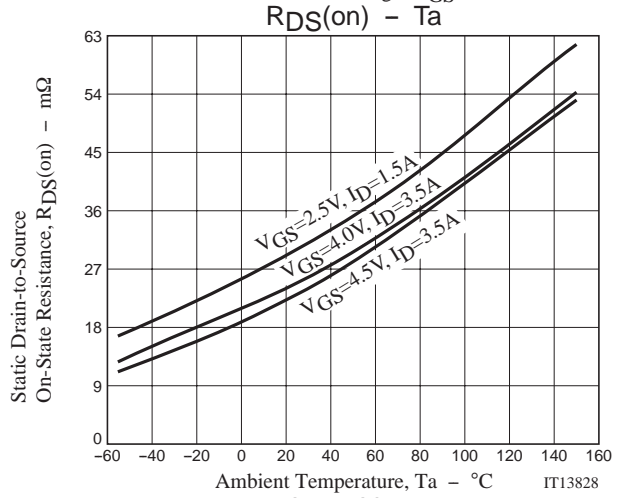
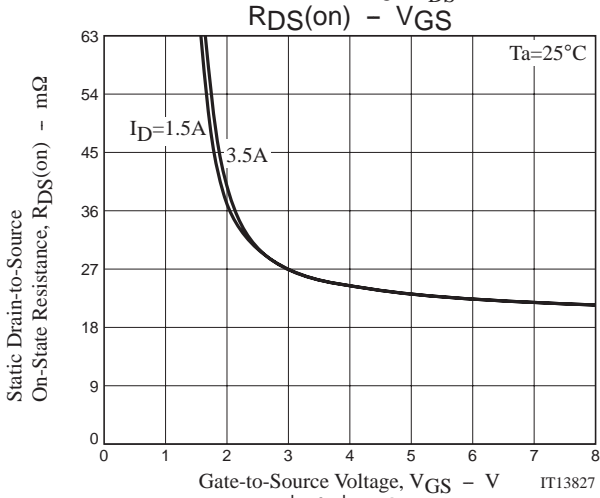
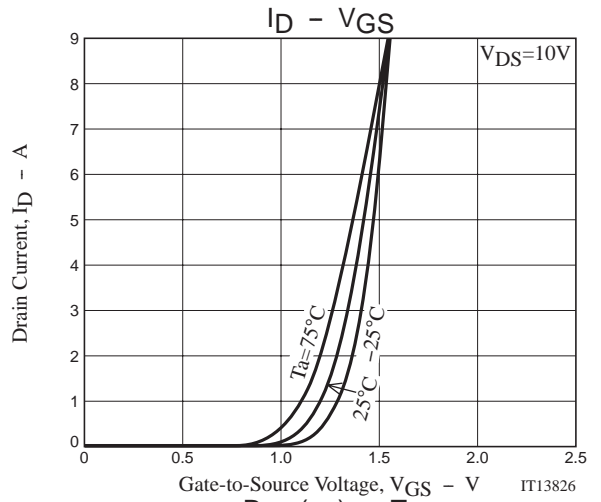
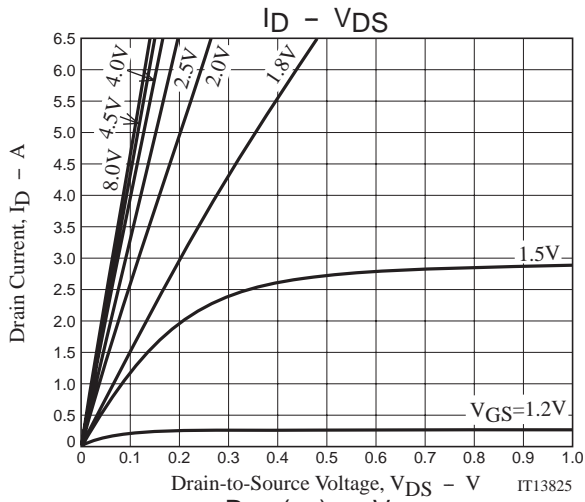


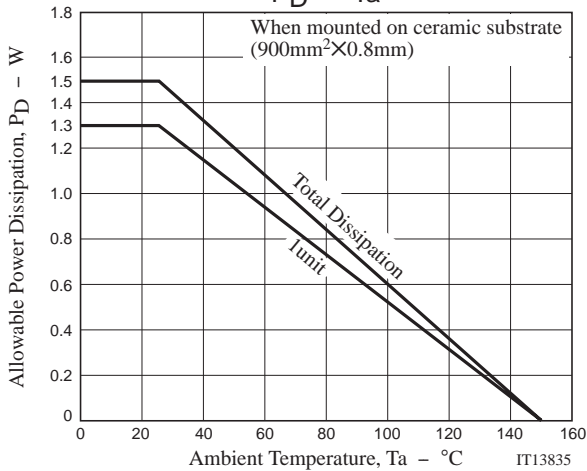
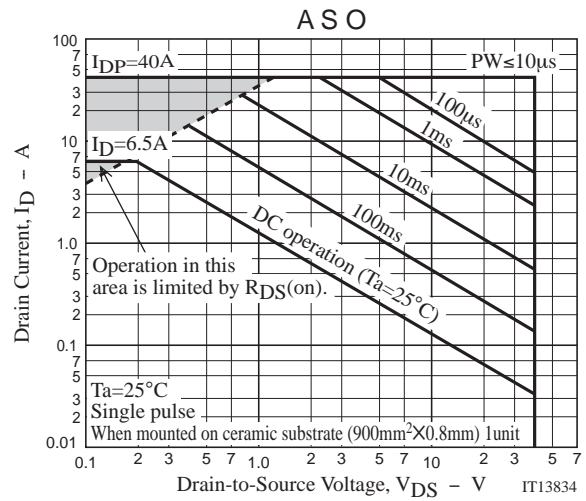
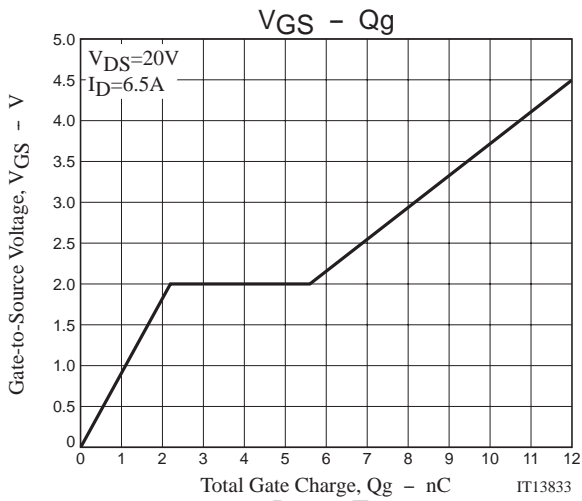
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the ECH8662 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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