



SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

ECH8402 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 4V drive.

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		10	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)	1.6	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	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.0		2.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =5A	5.6	9.4		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =5A, V _{GS} =10V		11	15	mΩ
	R _{DS(on)2}	I _D =2.5A, V _{GS} =4V		23	32	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		1400		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		270		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		190		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		17		ns
Rise Time	t _r	See specified Test Circuit.		82		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		96		ns
Fall Time	t _f	See specified Test Circuit.		53		ns

Marking : KB

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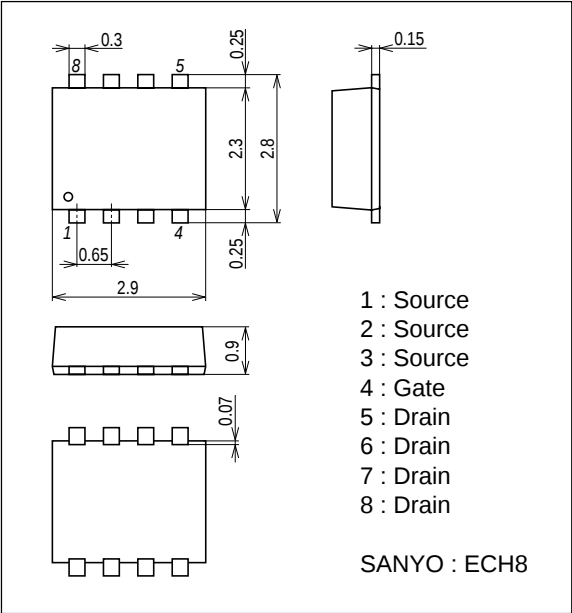
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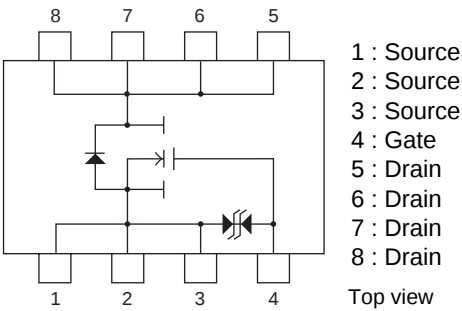
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =10V, V _{GS} =10V, I _D =5A		28		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =10V, I _D =5A		4.8		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =10V, V _{GS} =10V, I _D =5A		7.3		nC
Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0		0.81	1.2	V

Package Dimensions

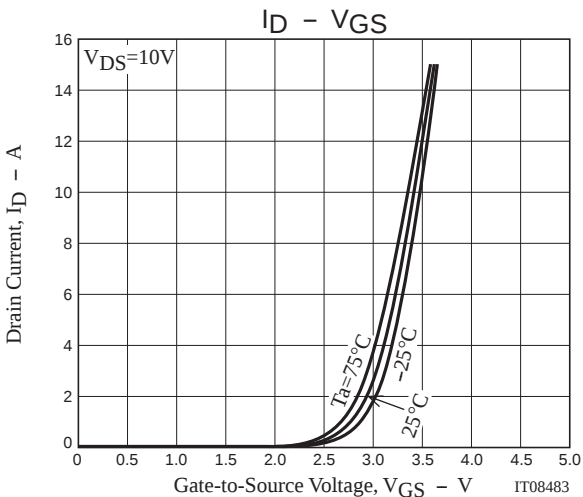
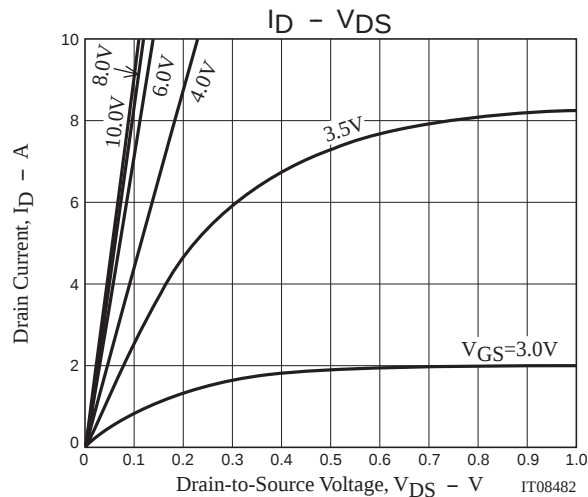
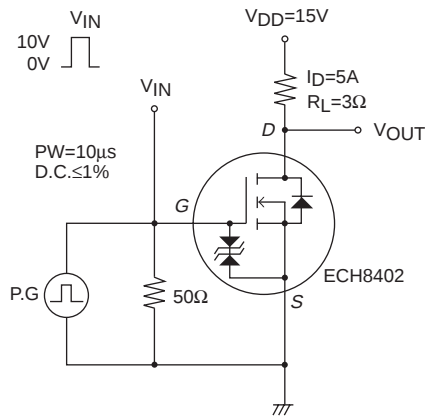
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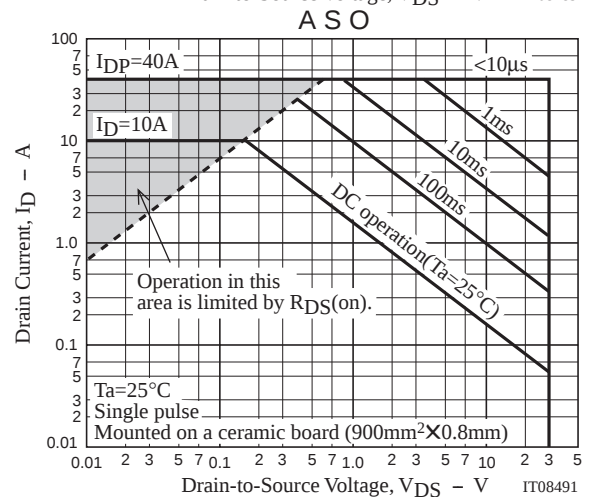
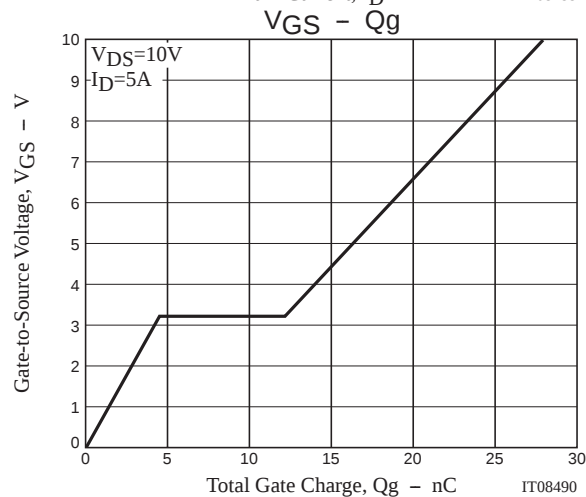
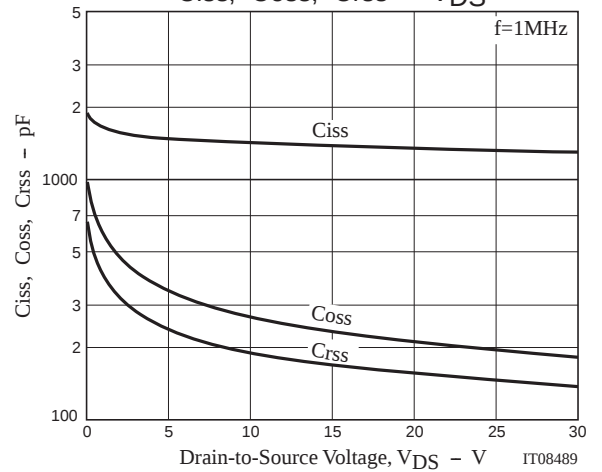
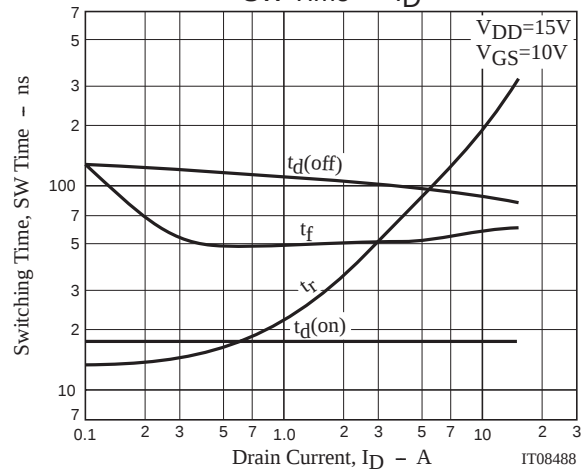
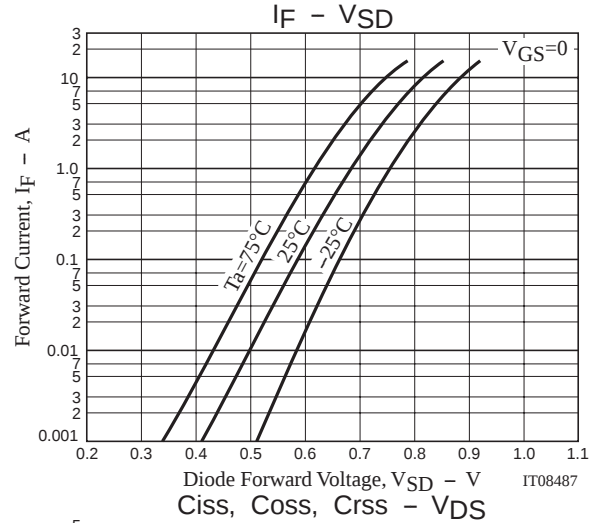
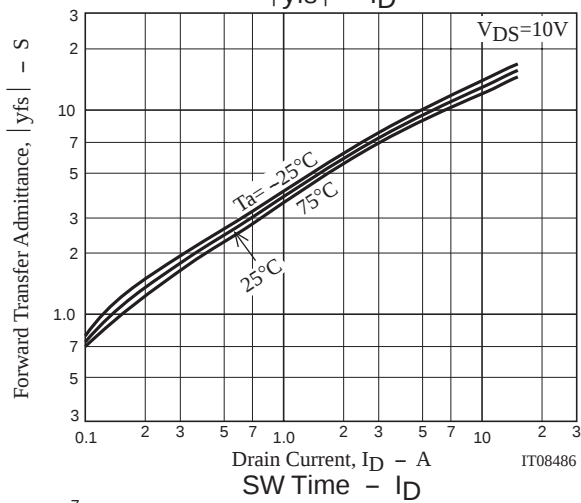
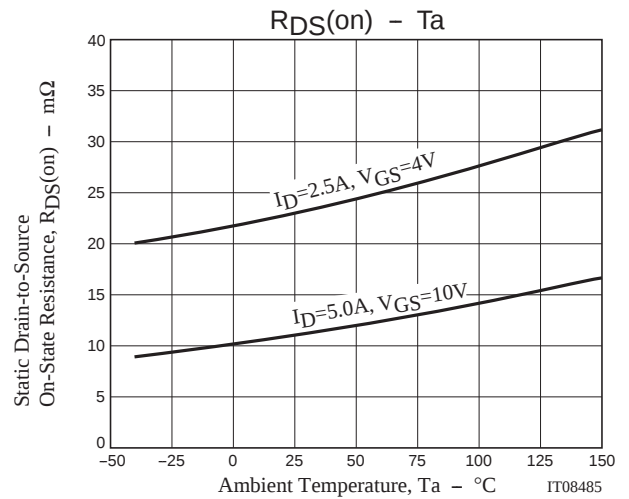
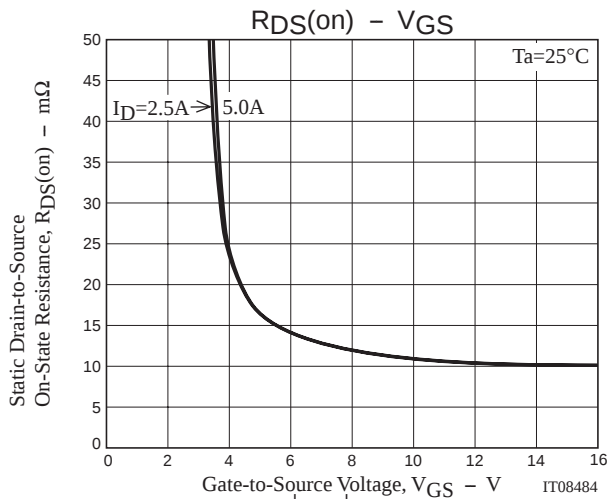


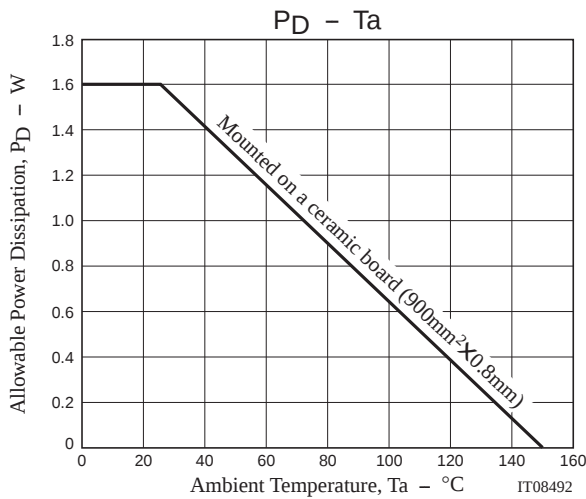
Electrical Connection



Switching Time Test Circuit







Note on usage : Since the ECH8402 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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