



SANYO Semiconductors

DATA SHEET

EC4402C — N-Channel Silicon MOSFET

Small Signal Switch and Interface Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		50	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		0.1	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	0.4	A
Allowable Power Dissipation	P _D		0.15	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	50			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _D =50V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _D =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _D =10V, I _D =100μA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _D =10V, I _D =50mA	0.13	0.18		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =50mA, V _{GS} =4V		6	7.8	Ω
	R _{DS(on)2}	I _D =30mA, V _{GS} =2.5V		7.1	9.9	Ω
	R _{DS(on)3}	I _D =10mA, V _{GS} =1.5V		10	20	Ω
Input Capacitance	C _{iss}	V _D =10V, f=1MHz		6.6		pF
Output Capacitance	C _{oss}	V _D =10V, f=1MHz		4.7		pF
Reverse Transfer Capacitance	C _{rss}	V _D =10V, f=1MHz		1.7		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		18		ns
Rise Time	t _r	See specified Test Circuit.		42		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		190		ns
Fall Time	t _f	See specified Test Circuit.		105		ns

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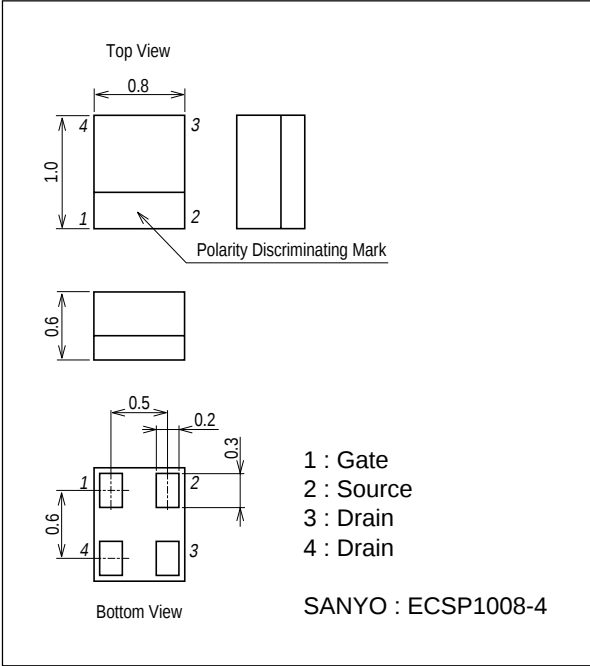
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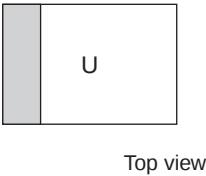
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =10V, V _{GS} =10V, I _D =100mA		1.57		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =10V, I _D =100mA		0.20		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =10V, V _{GS} =10V, I _D =100mA		0.32		nC
Diode Forward Voltage	V _{SD}	I _S =100mA, V _{GS} =0V		0.9	1.2	V

Package Dimensions

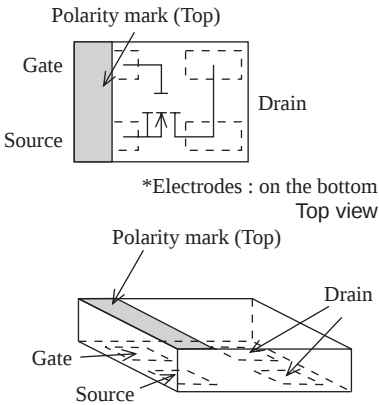
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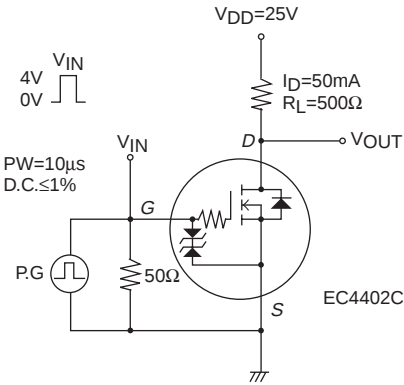
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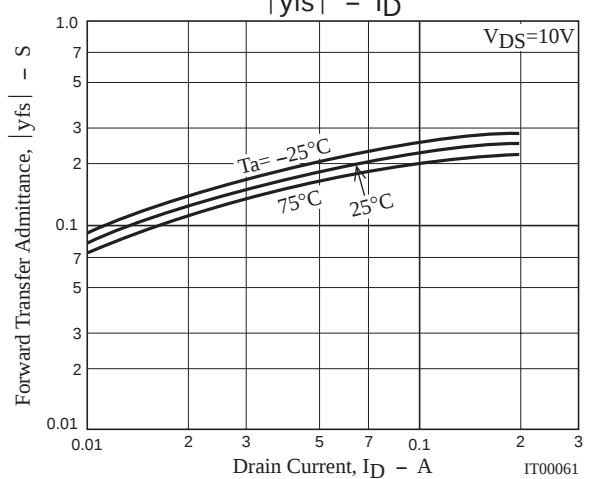
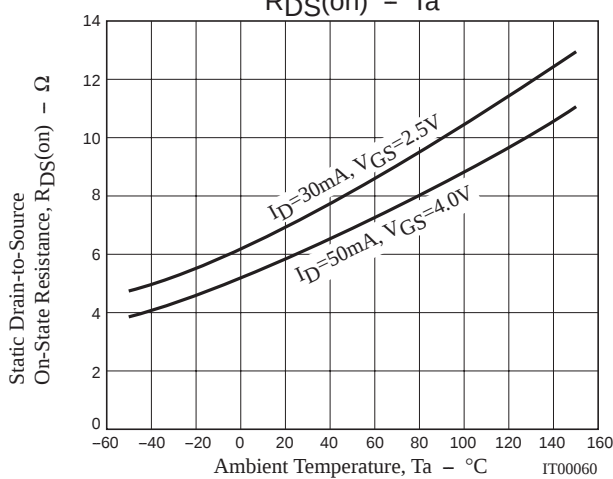
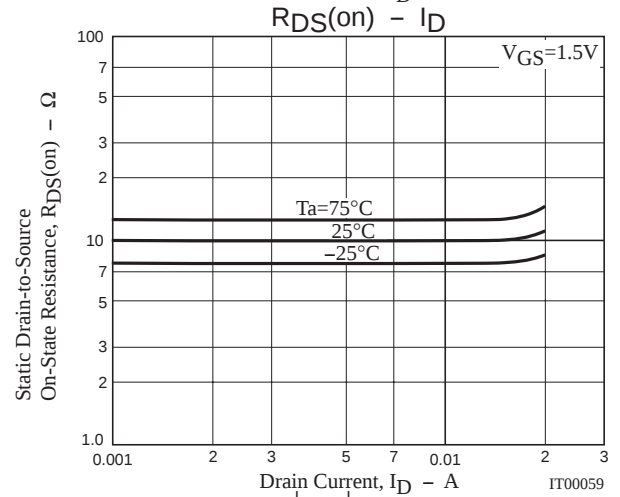
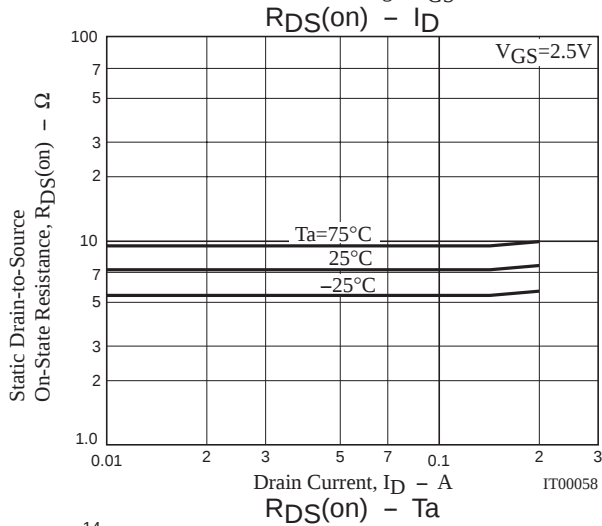
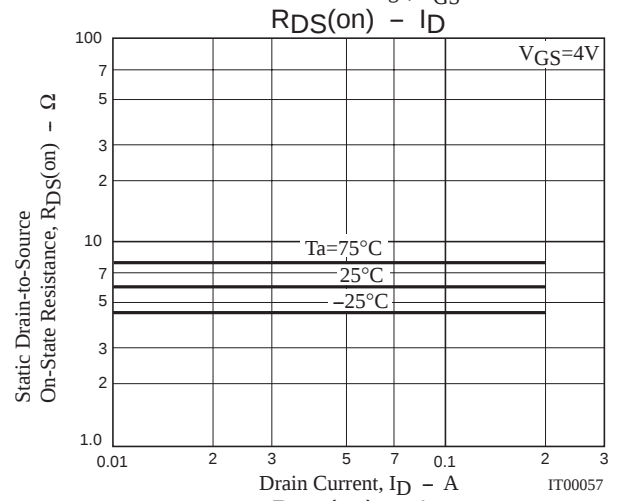
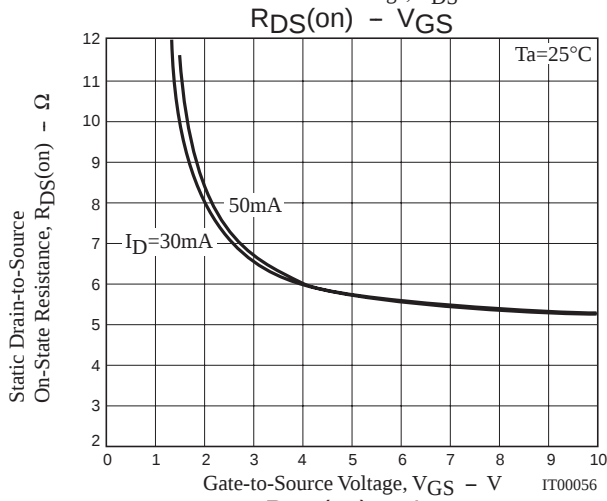
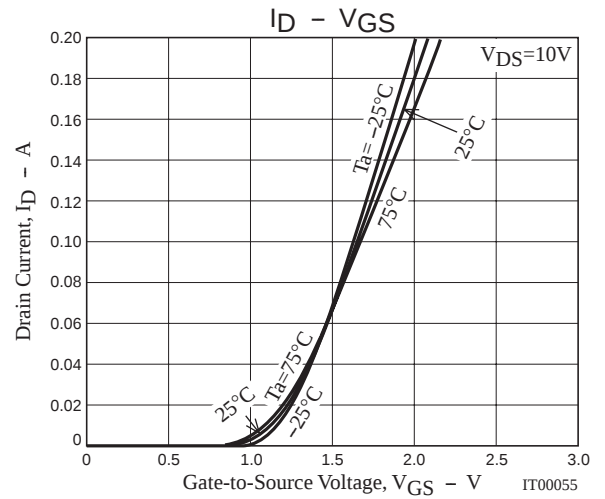
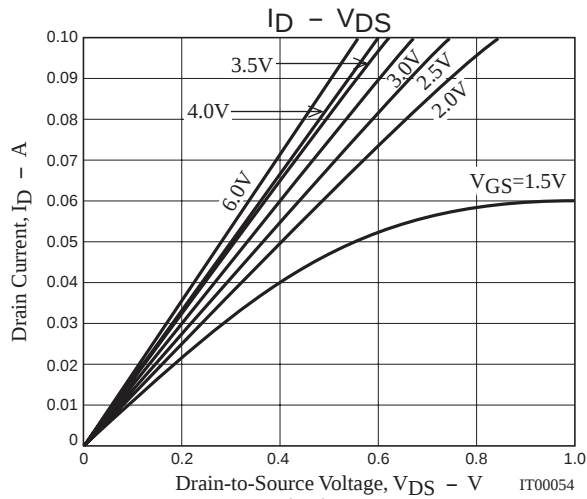


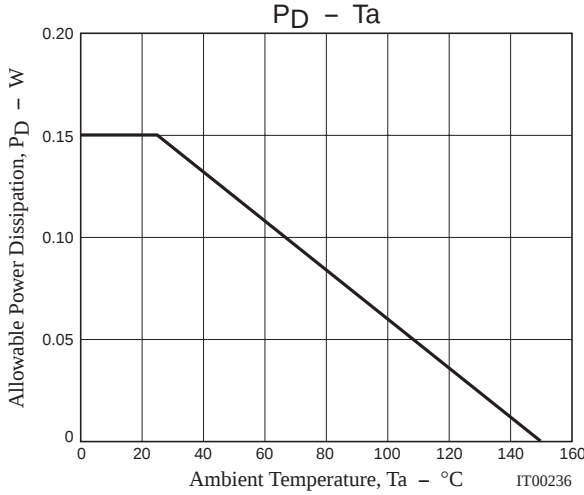
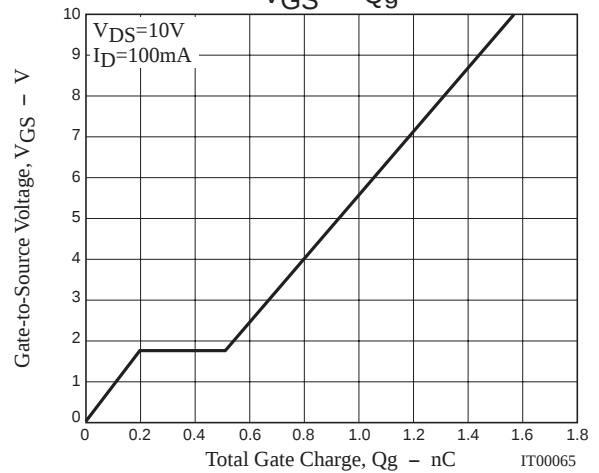
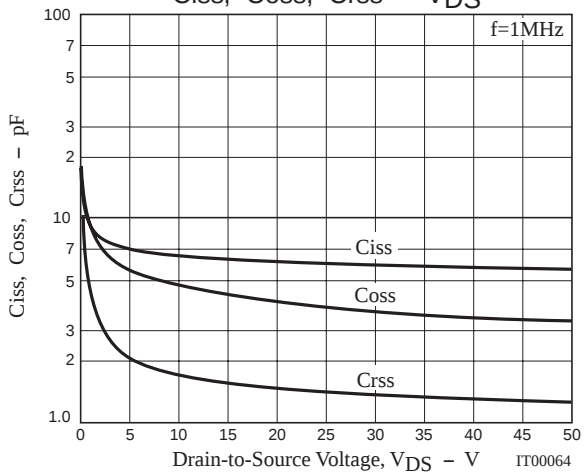
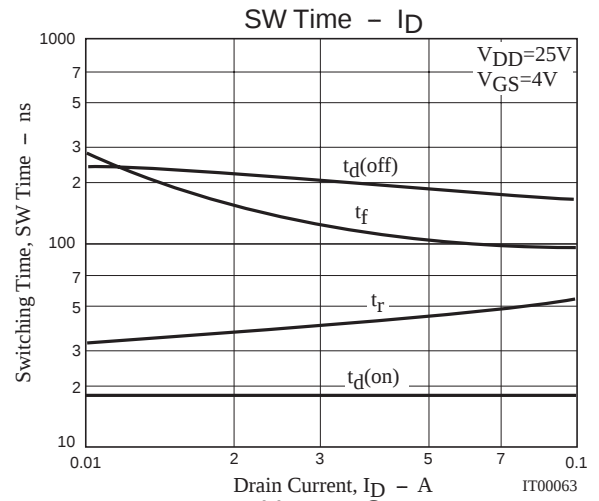
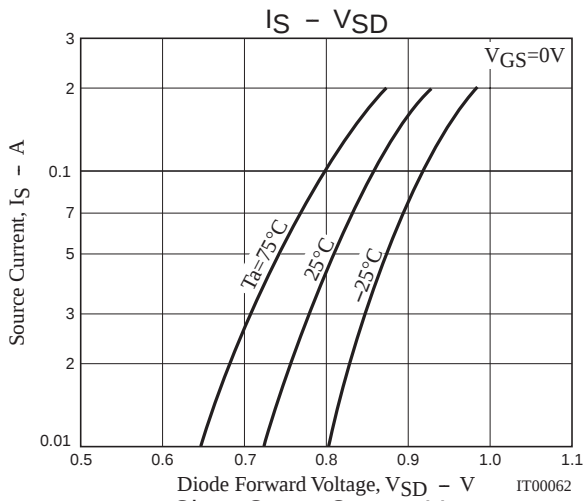
Electrical Connection



Switching Time Test Circuit







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