



SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

5LN02M — General-Purpose Switching Device 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		0.2	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	0.8	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 _{DS} =50V, 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 =100μA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =100mA	0.34	0.49		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =100mA, V _{GS} =4V		1.9	2.4	Ω
	R _{DS(on)2}	I _D =50mA, V _{GS} =2.5V		2.2	3	Ω
	R _{DS(on)3}	I _D =10mA, V _{GS} =1.5V		3.2	6.4	Ω
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		25		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		12		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		4.5		pF

Marking : YE

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5LN02M

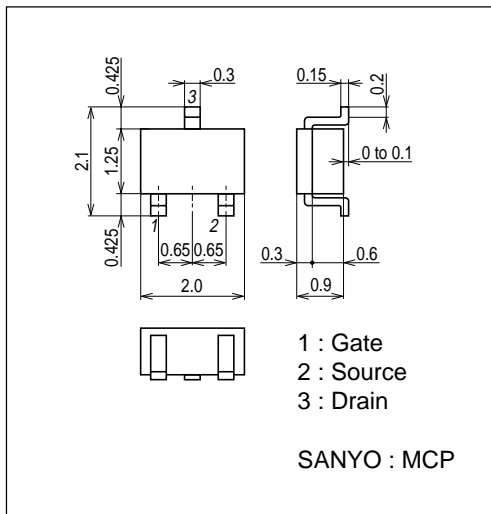
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		25		ns
Rise Time	t_r	See specified Test Circuit.		75		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		350		ns
Fall Time	t_f	See specified Test Circuit.		170		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=200mA$		2.18		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=200mA$		0.28		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=200mA$		0.45		nC
Diode Forward Voltage	V_{SD}	$I_S=200mA, V_{GS}=0V$		0.83	1.2	V

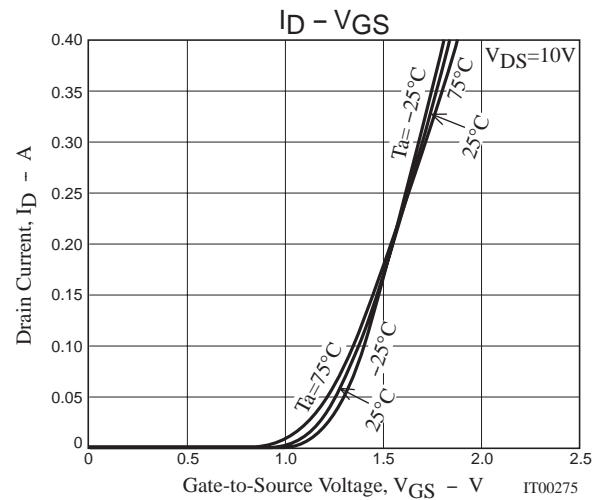
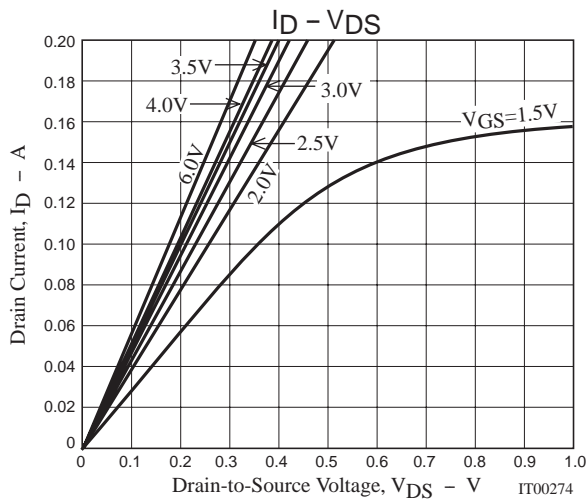
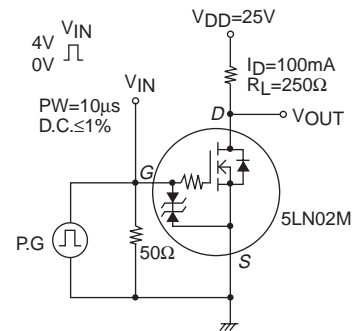
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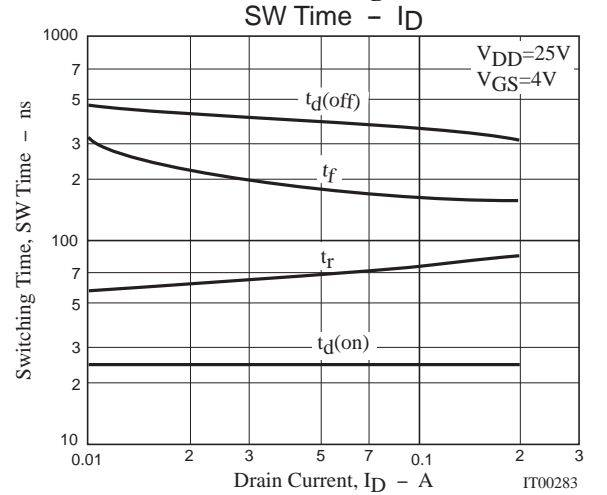
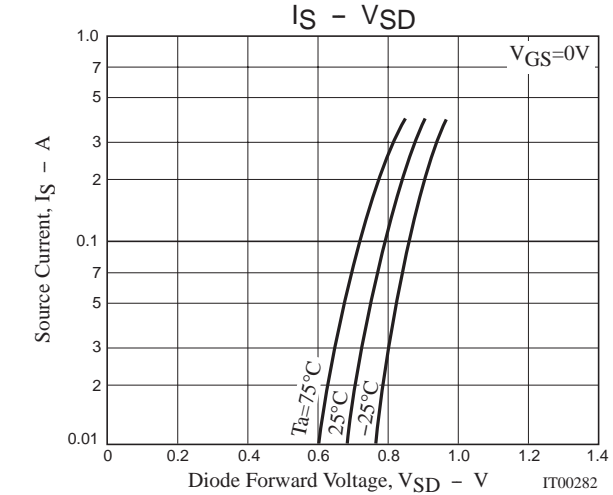
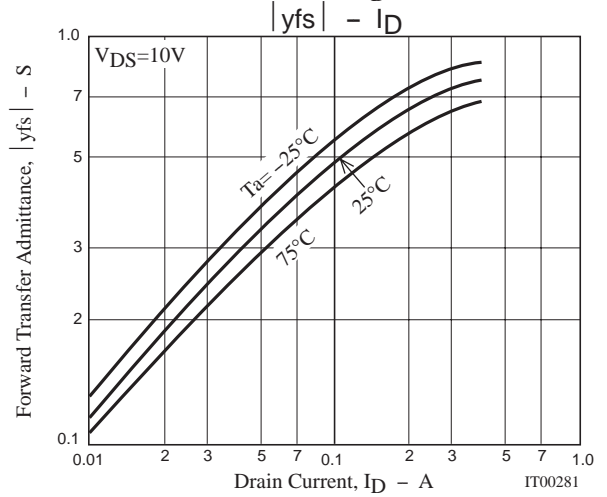
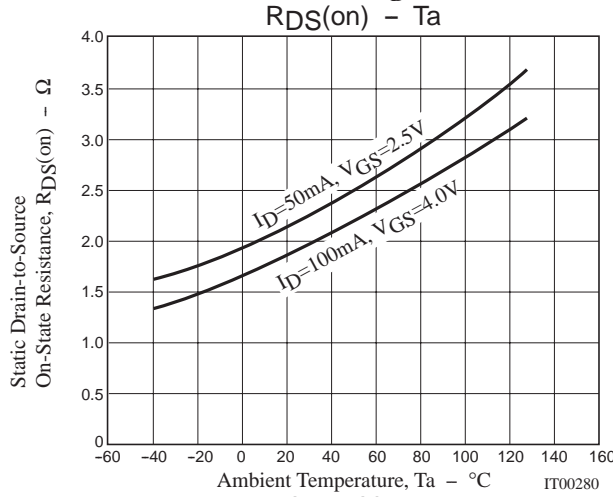
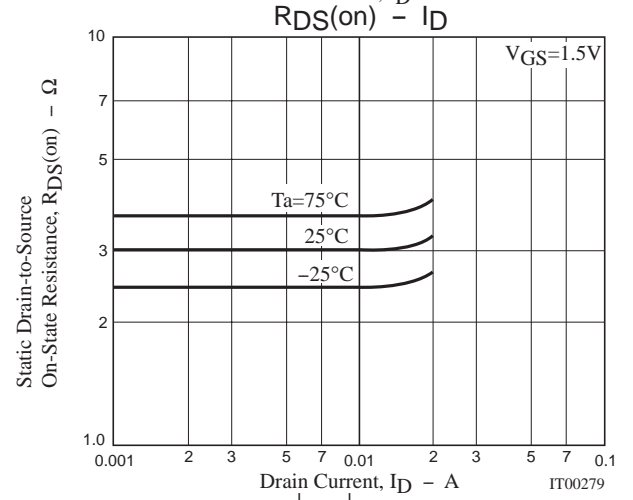
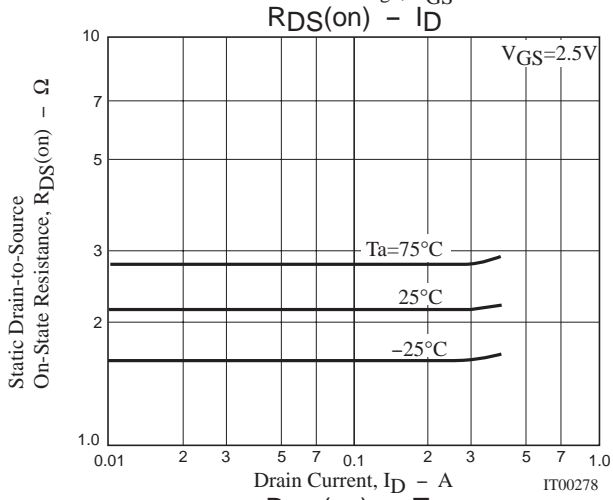
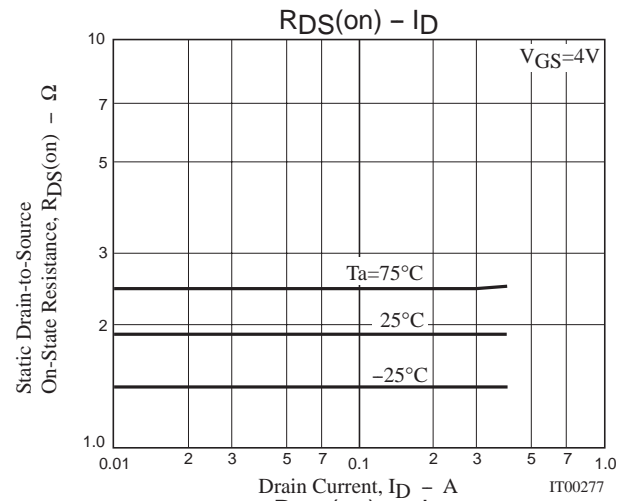
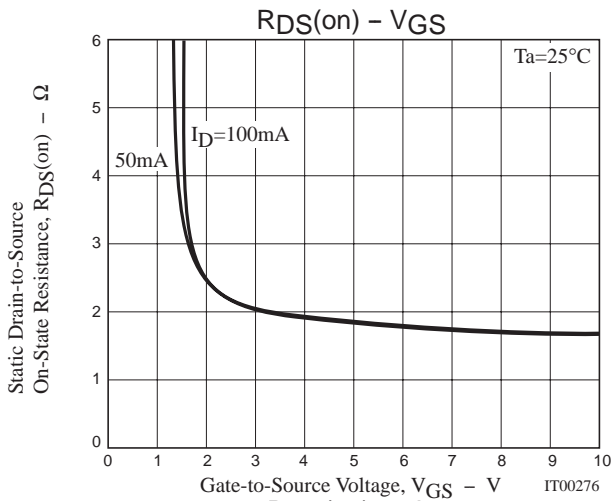
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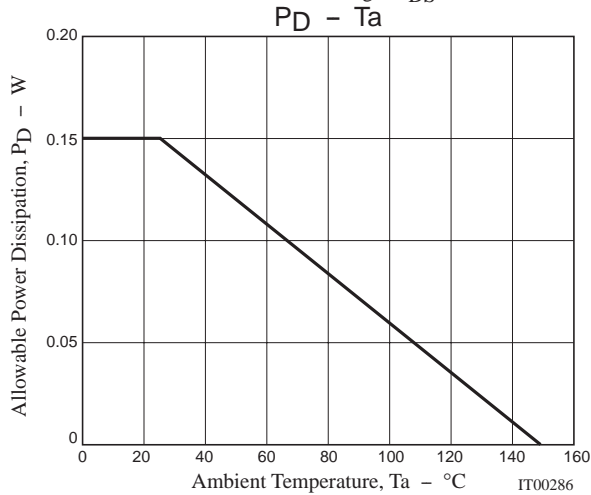
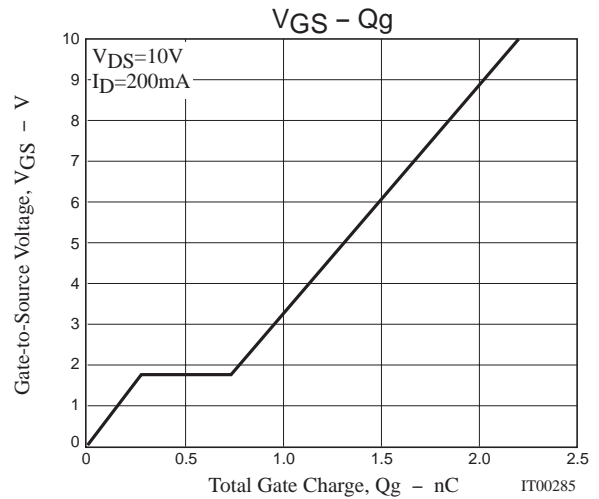
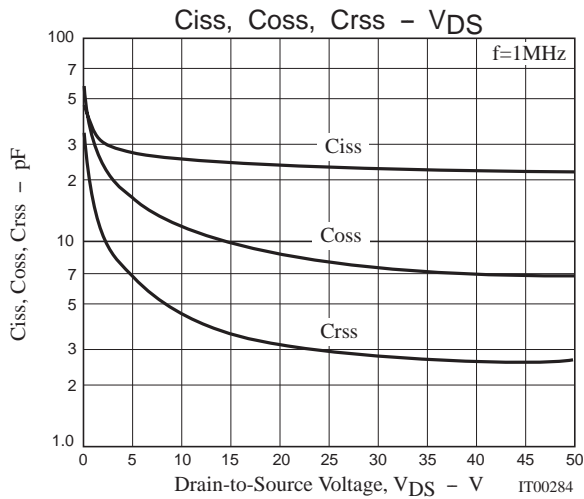
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Switching Time Test Circuit







Note on usage : Since the 5LN02M is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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