Ordering number : EN6128A

SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

3LN02M — 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}		30	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		0.3	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	1.2	A
Allowable Power Dissipation	P_D		0.15	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		–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	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, 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	$\|yfs\|$	V_{DS}=10V, I_D=150mA	0.4	0.56		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=150mA, V_{GS}=4V		0.9	1.2	Ω
	$R_{DS}(on)2$	I_D=80mA, V_{GS}=2.5V		1.2	1.7	Ω
	$R_{DS}(on)3$	I_D=10mA, V_{GS}=1.5V		2.6	5.2	Ω
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		30		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		15		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		10		pF

Marking : YD

Continued on next page.

SANYO Semiconductor Co., Ltd.
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

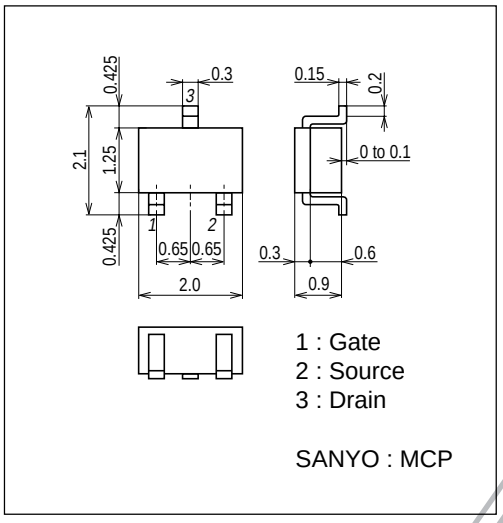
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		32		ns
Rise Time	t_r	See specified Test Circuit.		110		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		250		ns
Fall Time	t_f	See specified Test Circuit.		160		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=10V, I_D=300mA		2.34		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=10V, I_D=300mA		0.38		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=10V, I_D=300mA		0.45		nC
Diode Forward Voltage	V_{SD}	I_S=300mA, V_{GS}=0V		0.8	1.2	V

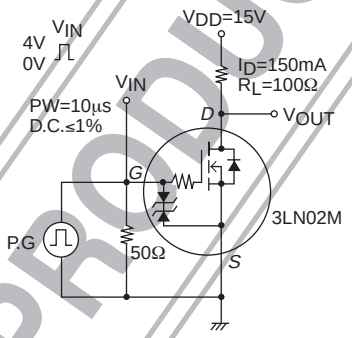
Package Dimensions

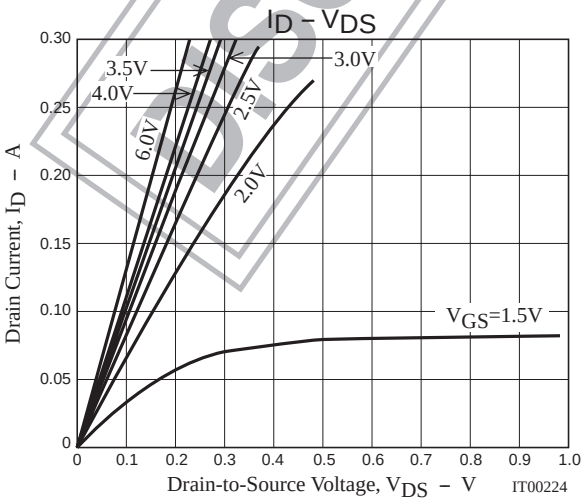
unit : mm

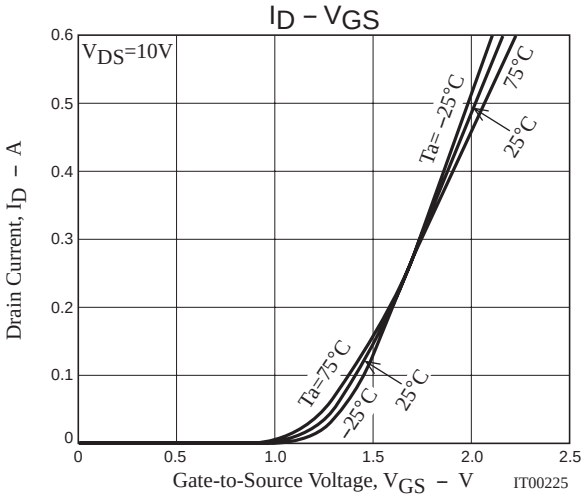
7023-010

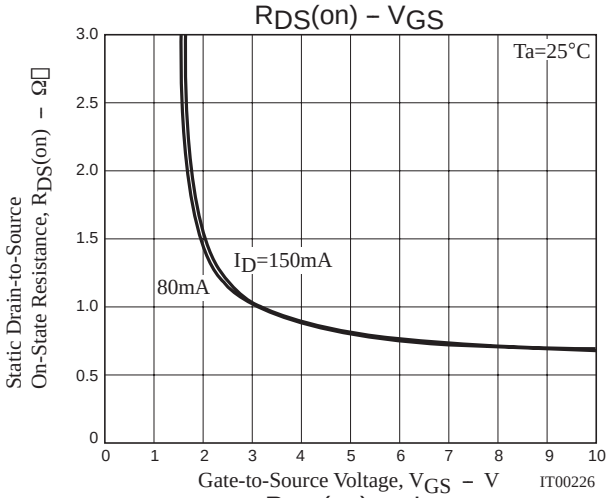


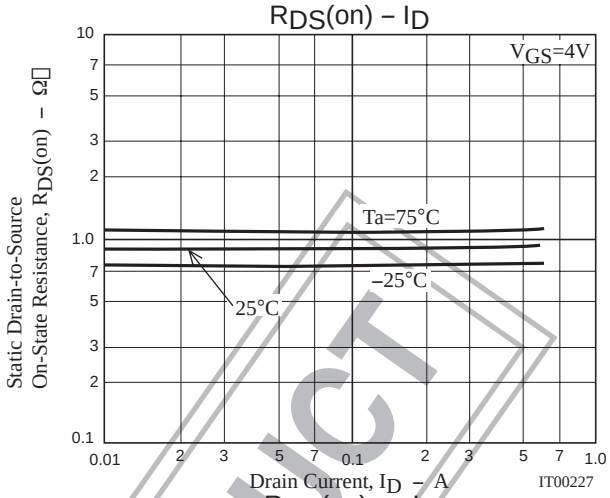
Switching Time Test Circuit

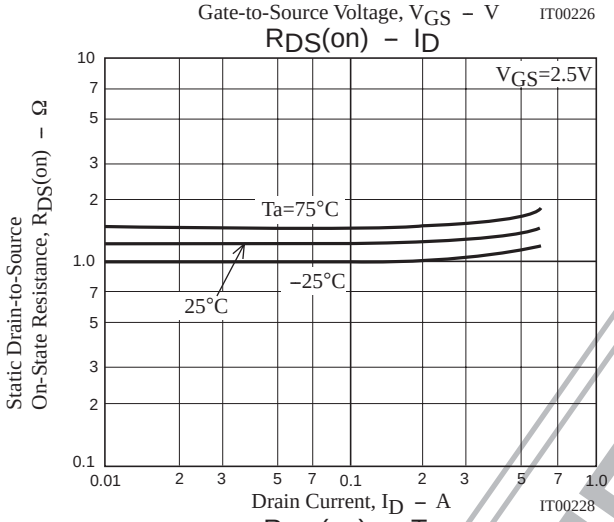


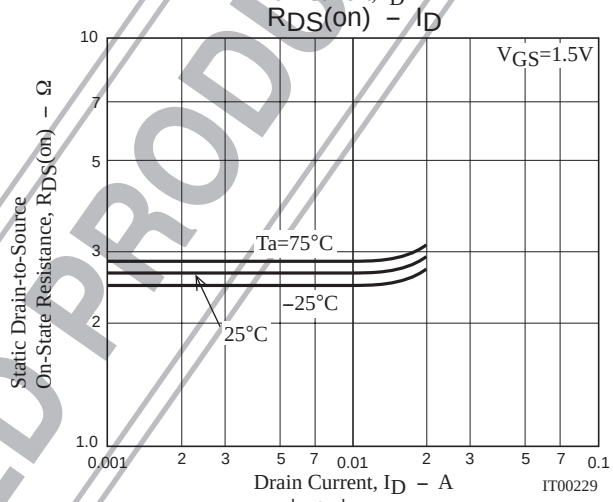


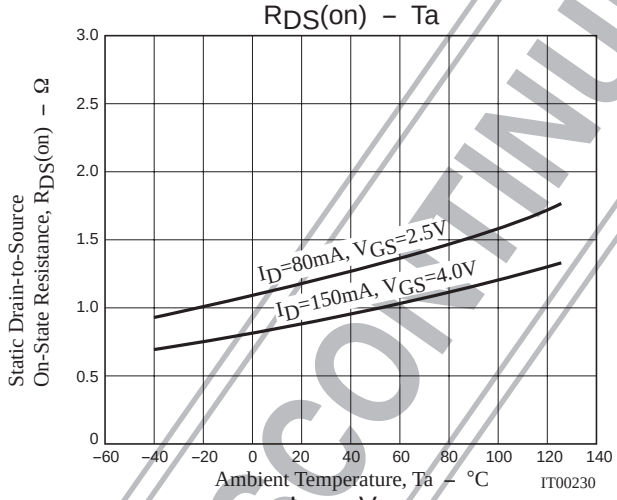


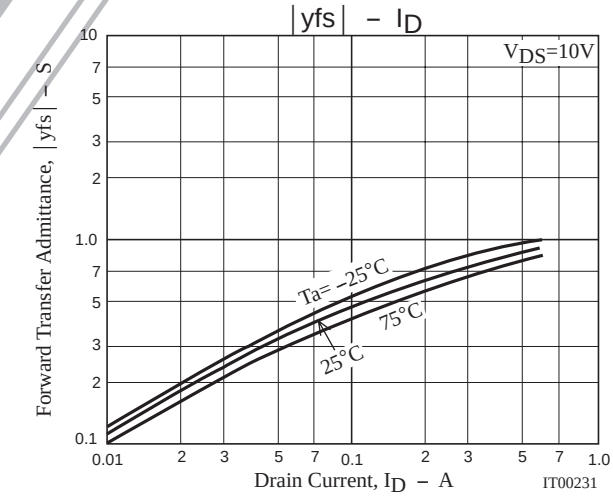


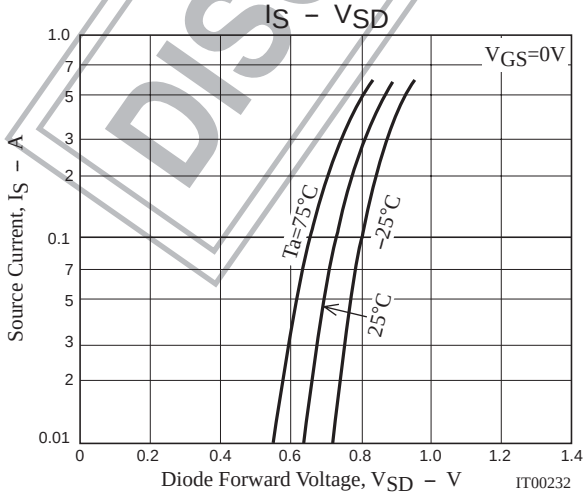


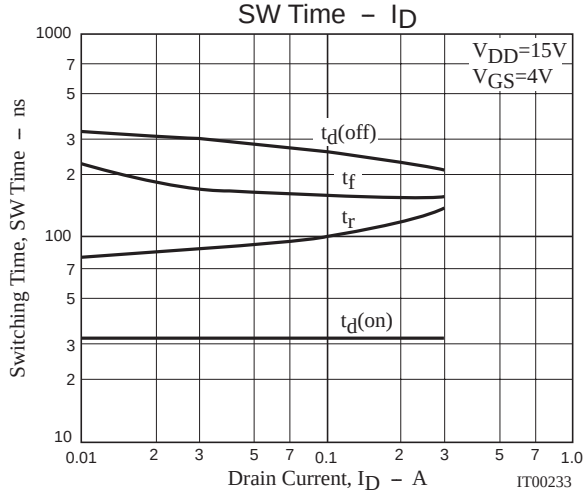


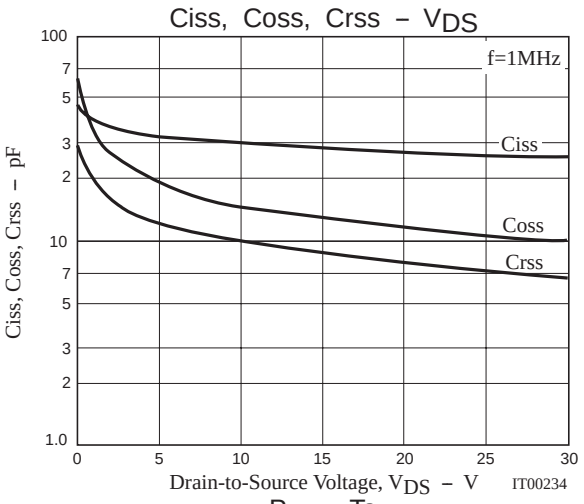


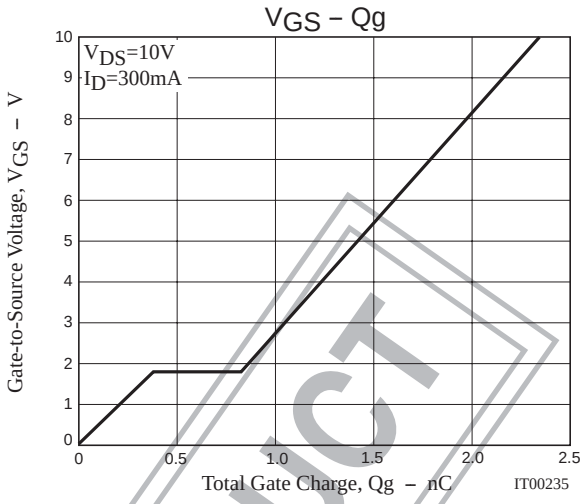


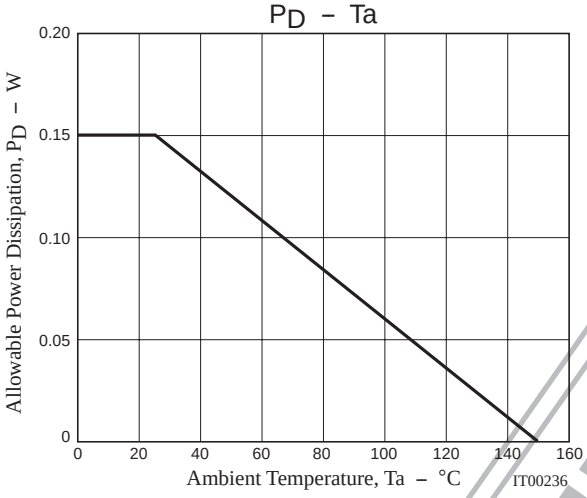












Note on usage : Since the 3LN02M is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.