

Description

The SX2N30MI is silicon N-channel Enhanced VDMOSFETs, is obtained by the self-aligned planar Technology which reduce the conduction loss, improve switching performance and enhance the avalanche energy. The transistor can be used in various power switching circuit for system miniaturization and higher efficiency.

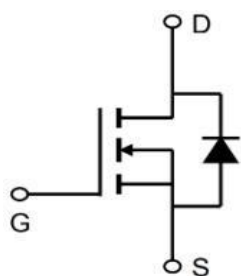
General Features

$V_{DS} = 300V$ $I_D = 2A$

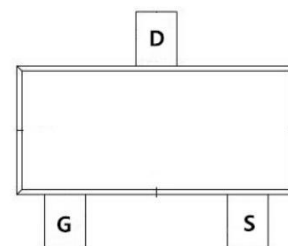
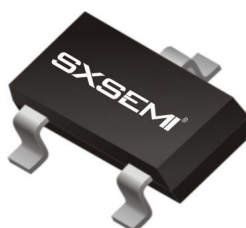
$R_{DS(ON)} < 4000m\Omega$ @ $V_{GS}=10V$

Application

LED



SOT-23-3L



Absolute Maximum Ratings ($T_c=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Value	Unit
VDSS	Drain-Source Voltage ($V_{GS} = 0V$)	300	V
ID	Continuous Drain Current	2	A
IDM	Pulsed Drain Current (note1)	12	A
VGS	Gate-Source Voltage	± 25	V
EAS	Single Pulse Avalanche Energy (note2)	30	mJ
Pd	Power Dissipation ($T_c = 25^{\circ}C$)	35.2	W
TJ, Tstg	Operating Junction and Storage Temperature Range	$-55 \sim +150$	$^{\circ}C$
RthJC	Thermal Resistance, Junction-to-Case	3.55	$^{\circ}C/W$
RthJA	Thermal Resistance, Junction-to-Ambient	125	$^{\circ}C/W$

Electrical Characteristics (T_J=25°C, unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V(BR)DSS	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	300	330	--	V
VGS(th)	Gate-Source Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2.0	3.0	4.0	V
RDS(on)	Drain-Source On-Resistance	V _{GS} = 10V, I _D = 1.5A	--	3000	4000	mΩ
IDSS	Zero Gate Voltage Drain Current	V _{DS} = 300V, V _{GS} = 0V, T _J = 25°C	--	--	1	μA
		V _{DS} = 240V, V _{GS} = 0V, T _J = 125°C	--	--	100	
IGSS	Gate-Source Leakage	V _{GS} = ±25V	--	--	±100	nA
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 25V, f = 1.0MHz	--	138	--	pF
C _{oss}	Output Capacitance		--	30	--	
C _{rss}	Reverse Transfer Capacitance		--	5	--	
Q _g	Total Gate Charge	V _{DD} = 240V, I _D = 3.0A, V _{GS} = 10V	--	4.4	--	nC
Q _{gs}	Gate-Source Charge		--	0.7	--	
Q _{gd}	Gate-Drain Charge		--	2	--	
td(on)	Turn-on Delay Time	V _{DD} = 150V, I _D = 3.0A, R _G = 25 Ω	--	18	--	ns
t _r	Turn-on Rise Time		--	55	--	
td(off)	Turn-off Delay Time		--	60	--	
t _f	Turn-off Fall Time		--	55	--	
I _S	Continuous Body Diode Current	T _C = 25 °C	--	--	3	A
ISM	Pulsed Diode Forward Current		--	--	12	
t _{rr}	Reverse Recovery Time	V _{GS} = 0V, I _S = 3A, di _f /dt = 100A/μs	--	250	--	ns
Q _{rr}	Reverse Recovery Charge		--	1.8	--	μC
V _{SD}	Body Diode Voltage	T _J = 25°C, I _{SD} = 3A, V _{GS} = 0V	--	--	1.4	V

Note :

- 1、The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2、The test condition is Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%
- 3、The power dissipation is limited by 150°C junction temperature
- 4、The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

Typical Characteristics

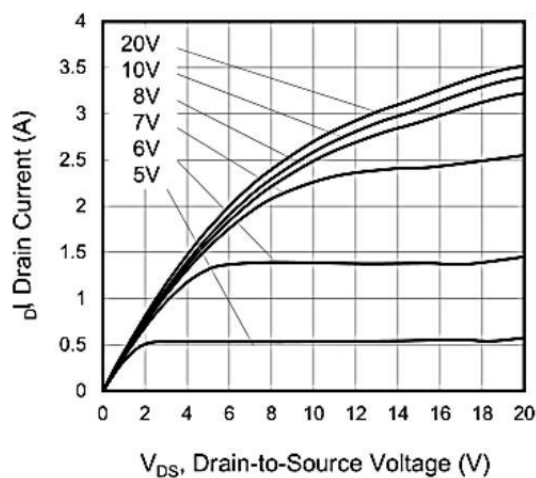


Figure 1. Output Characteristics

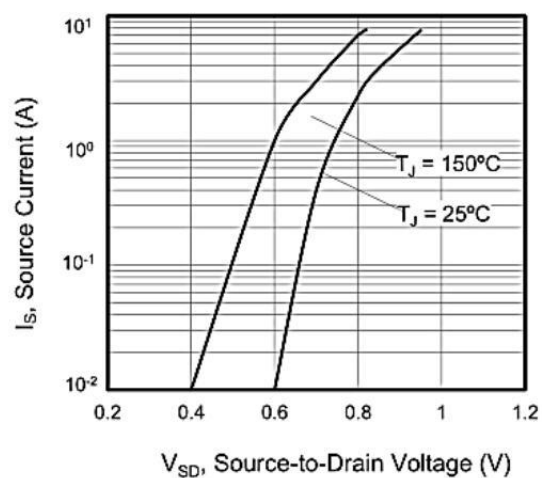


Figure 2. Body Diode Forward Voltage

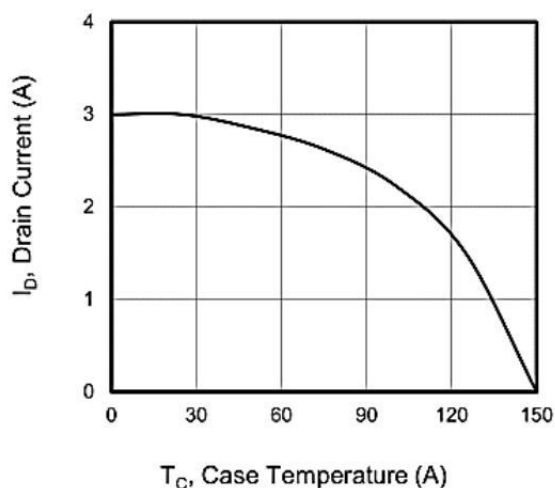


Figure3.DrainCurrentvs.Temperature

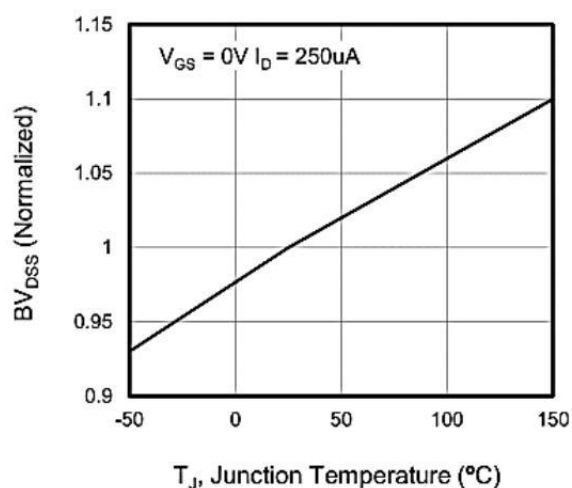


Figure4.BVDSSVariationvs.Temperature

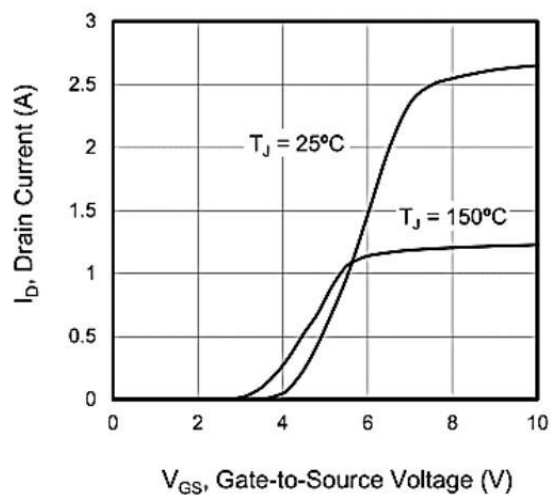


Figure 5. Transfer Characteristics

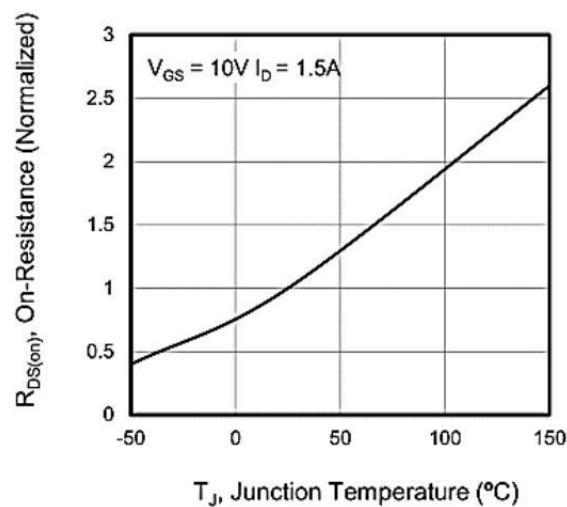


Figure 6. On-Resistance vs. Temperature

Typical Characteristics

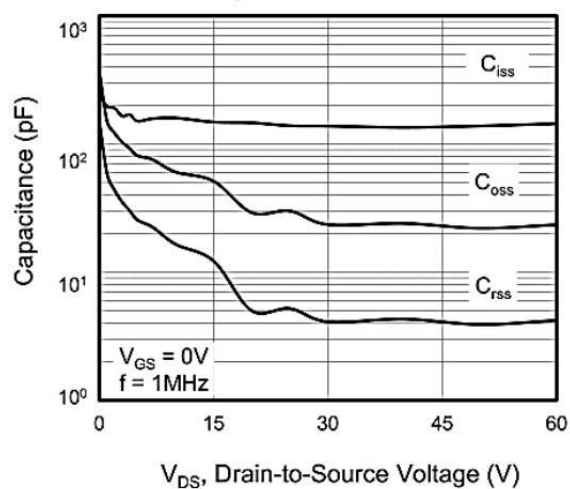


Figure 7. Capacitance

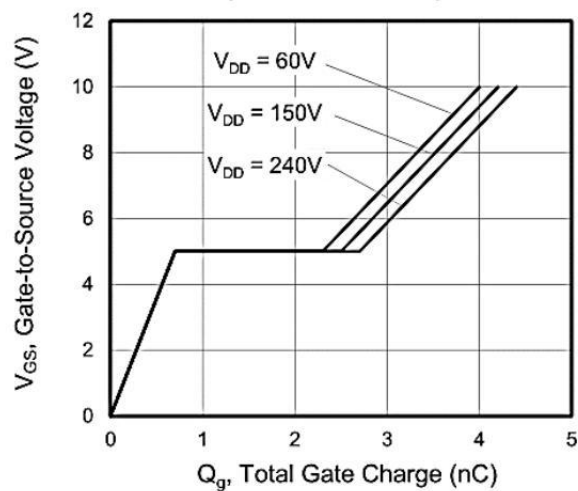


Figure 8. Gate Charge

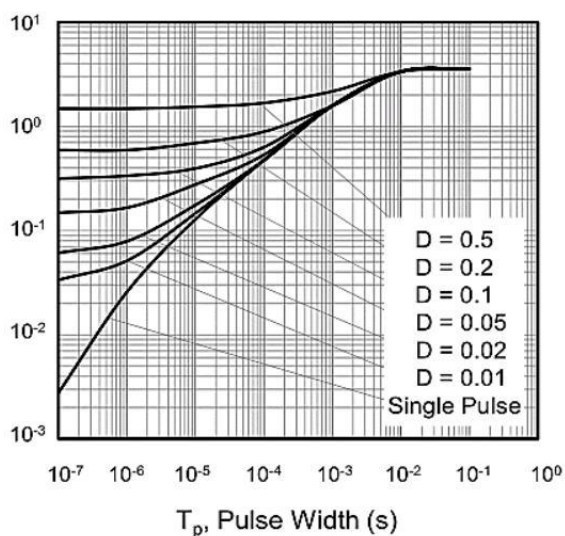
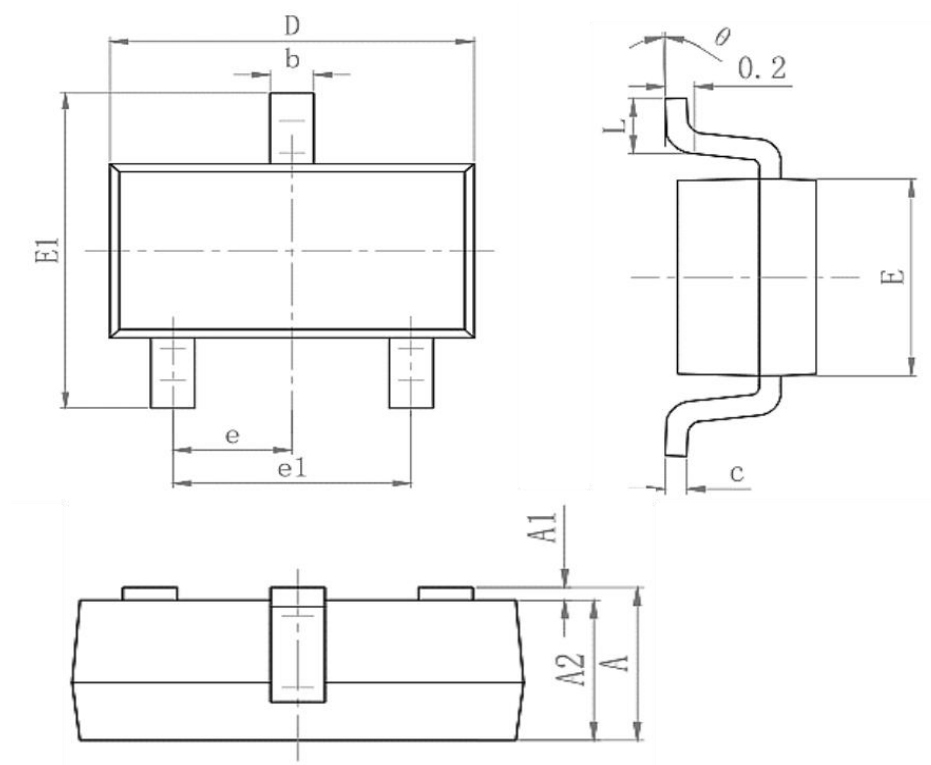


Figure 9. Transient Thermal Impedance

Package Mechanical Data-SOT23-3-XC-Single



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.25	0.45
c	0.100	0.200
D	2.820	3.020
E	1.5	1.7
E1	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.500
θ	0°	8°

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
TAPING	SOT23-3L		3000