

**SE2101**  
**P-Channel Enhancement-Mode MOSFET**

Revision:A

**General Description**

SE2101 is P-Channel enhancement mode power MOSFET which is produced with high cell density and DMOS trench technology .This device particularly suits low voltage applications, especially for battery powered circuits, the tiny and thin outline saves PCB consumption.

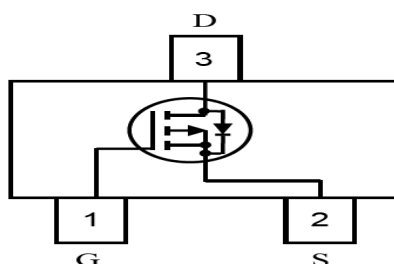
**Features**

- VDS -20V, VGS ±8V, ID -0.9A
- $R_{DSon} @-4.5V, < 300mR$
- $R_{DSon} @-2.5V, < 400mR$
- $R_{DSon} @-1.8V, < 530mR$

**Application**

- Load Switch
- A Switch and Battery Switch for Portable Devices

**Pin configurations**



**Absolute Maximum Ratings**

Parameter		Symbol	Rating	Units
Drain-Source Voltage		VDS	-20	V
Gate-Source Voltage		VGS	±8	V
Drain Current (Note 1)	Continuous	ID	-0.9	A
	Pulsed		-3	
Total Power Dissipation	@TA=25°C	PD	250	mW
	@TA=75°C		-	
Operating Junction Temperature Range		TJ	-55 to 150	°C

Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS (Note 2)</b>						
BVDSS	Drain-Source Breakdown Voltage	ID=-250μA, VGS=0 V	-20			V
IDSS	Zero Gate Voltage Drain Current	VDS=-16 V, VGS=0 V			-1	μA
IGSS	Gate-Body leakage current	VDS=0 V, VGS=±8 V			±10 0	μA
VGS(th)	Gate Threshold Voltage	VDS=VGS ID=-250μA	-0.35	-0.6	-1	V
RDS(O N)	Static Drain-Source On-Resistance <sup>2</sup>	VGS=-4.50V, ID=-1 A	-	-	300	mΩ
		VGS=-2.5V, ID=-0.5A	-	-	400	
		VGS=-1.8V, ID=-0.3A	-	-	530	
<b>DYNAMIC PARAMETERS</b>						
Ciss	Input Capacitance	VGS=0V, VDS=-6V, f=200KHz		200		pF
Coss	Output Capacitance			80		pF
Crss	Reverse Transfer Capacitance			150		pF
<b>SWITCHING PARAMETERS</b>						
td(on)	Turn-On DelayTime <sup>2</sup>	VGS=-4.5V, VDD=-6V, RL=6Ω, RG=6Ω ID=-1A		10		ns
td(off)	Turn-Off DelayTime			62		
td(r)	Turn-On Rise Time			19		
td(f)	Turn-Off Fall Time			18		
VSD	Drain-Source Diode Forward Voltage	VGS=0V, IS=-0.3A	-	-0.78	-1.2	V

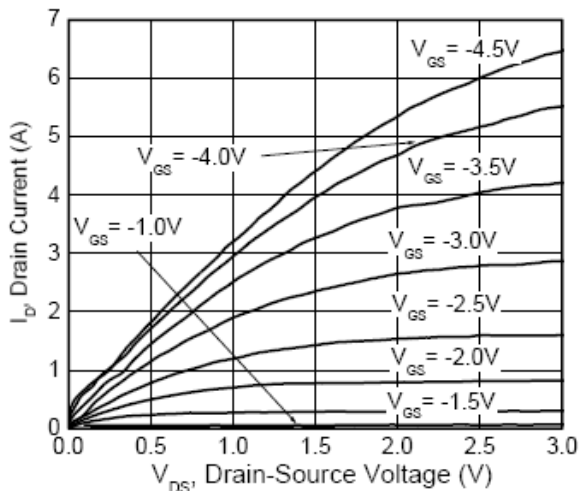


Figure 1. Output Characteristics

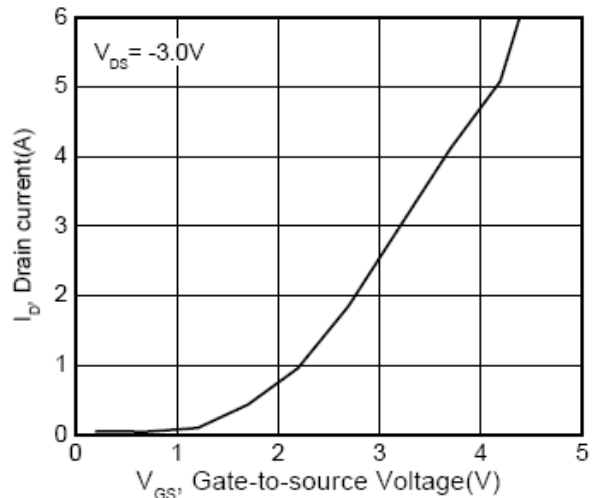


Figure 2. Transfer Characteristics

### Typical Characteristics

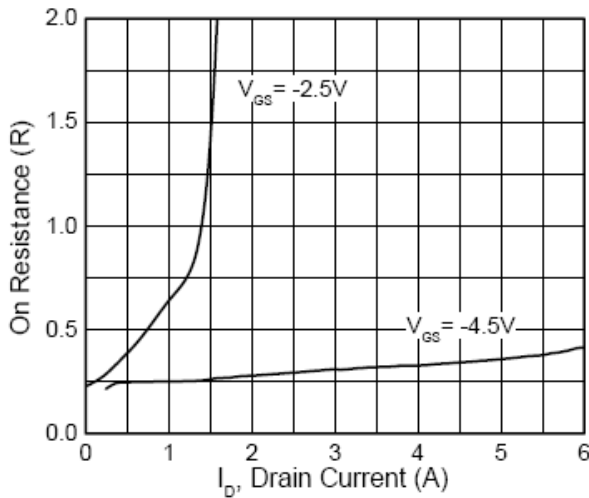


Figure 3. On Resistance VS  $I_D$

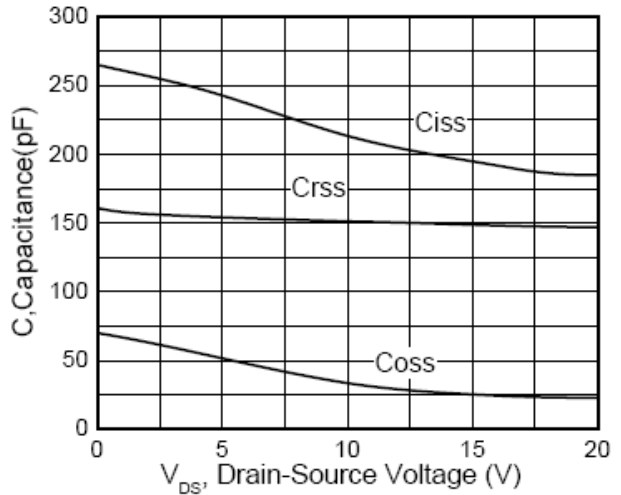


Figure 4. Capacitance

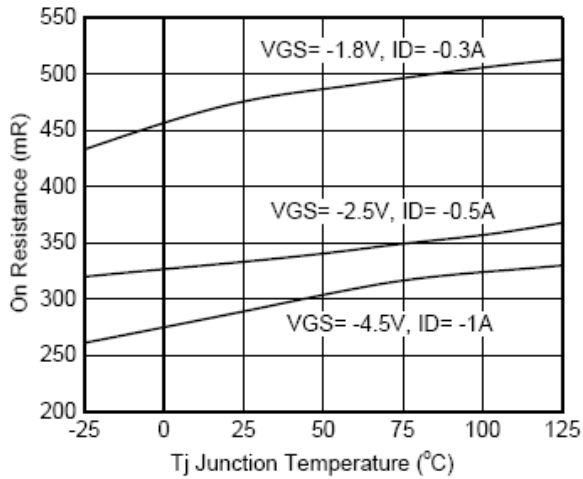


Figure 5. On resistance VS Temperature

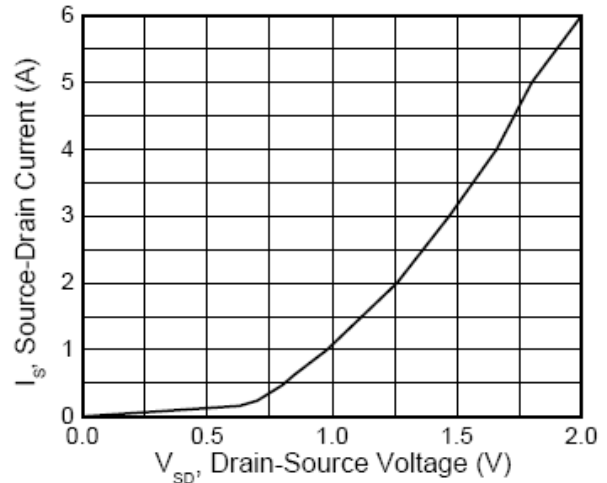


Figure 6.  $V_{SD}$  VS  $I_S$

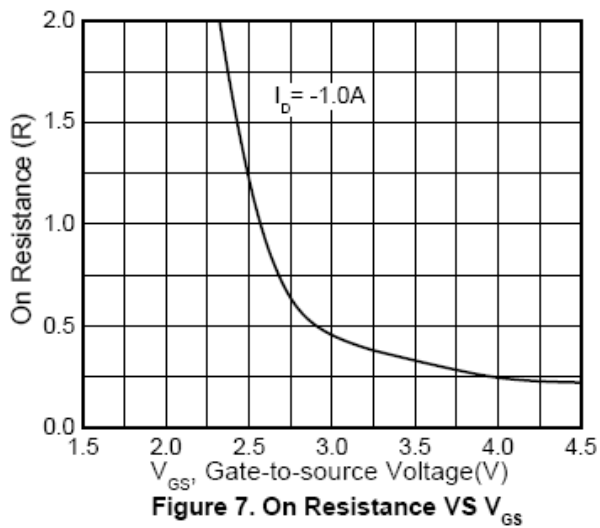


Figure 7. On Resistance VS  $V_{GS}$

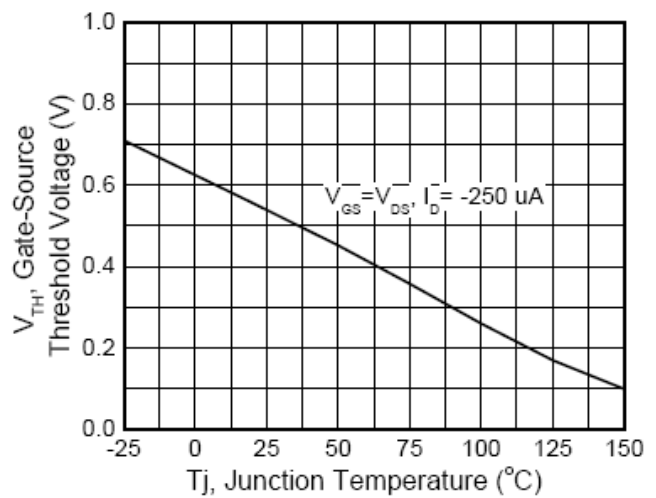
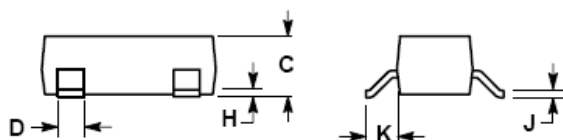
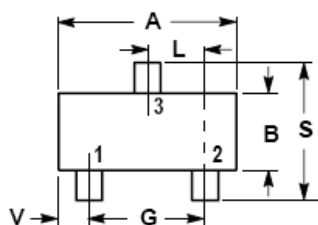


Figure 8. Gate Threshold Vs. Temperature

## SOT-23



## NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

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