SE2101E
P-Channel Enhancement-Mode MOSFET

Revision:A

General Description

SE2101E 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.

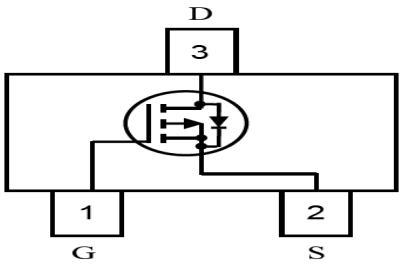
Features

- VDS -20V, VGS ±8V, ID -0.8A
- 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	-0.8	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_J=25°C unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF CHARACTERISTICS (Note 2)						
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			±100	μA
VGS(th)	Gate Threshold Voltage	VDS=VGS ID=-250μA	-0.35	-0.6	-1	V
RDS(ON)	Static Drain-Source On-Resistance[2]	VGS=-4.50V, ID=-0.8A	-	-	300	mΩ
		VGS=-2.5V, ID=-0.5A	-	-	400	
		VGS=-1.8V, ID=-0.3A	-	-	530	
DYNAMIC PARAMETERS						
Ciss	Input Capacitance	VGS=0V, VDS=-6V, f=200KHz		200		pF
Coss	Output Capacitance			80		pF
Crss	Reverse Transfer Capacitance			150		pF
SWITCHING PARAMETERS						
td(on)	Turn-On DelayTime[2]	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		
V_{SD}	Drain-Source Diode Forward Voltage	V_{GS}=0V,I_S=-0.3A	-	-0.78	-1.2	V

Typical Characteristics

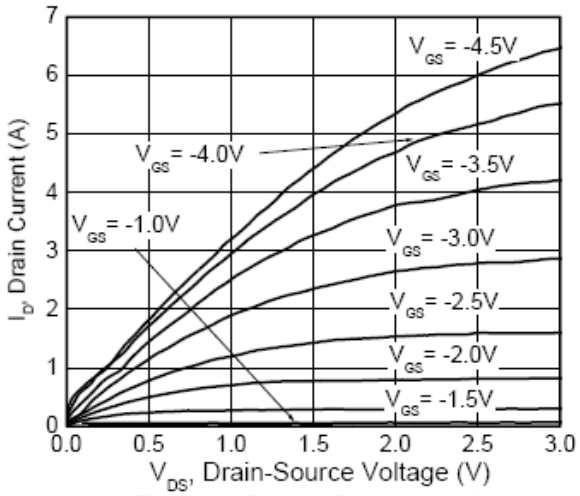


Figure 1. Output Characteristics

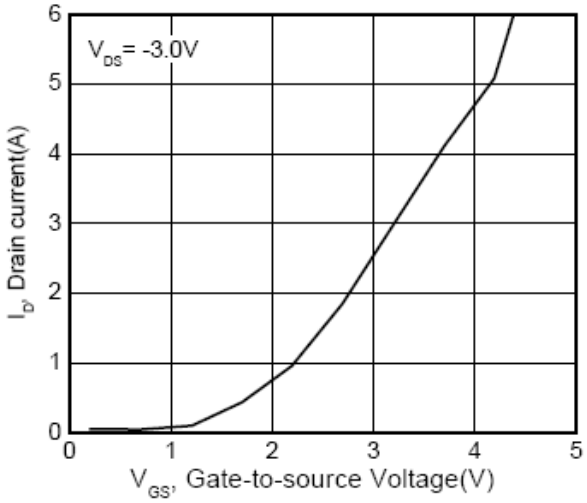


Figure 2. Transfer Characteristics

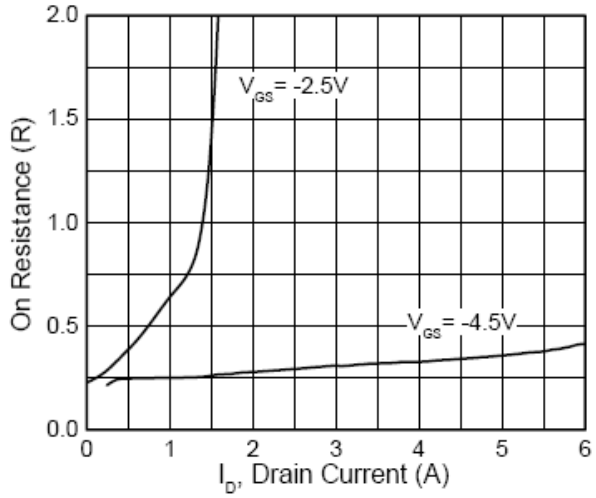


Figure 3. On Resistance VS I_D

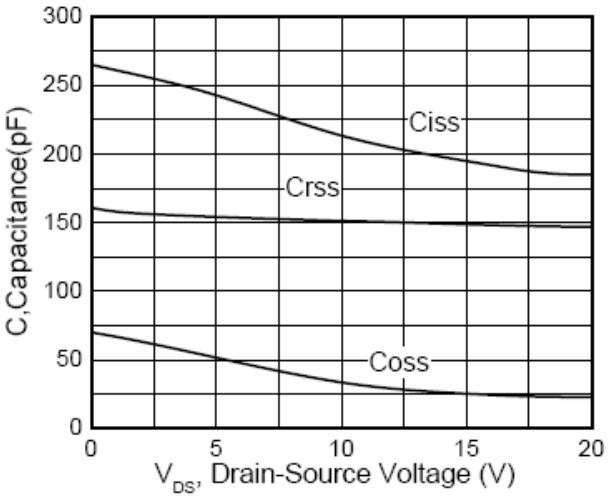


Figure 4. Capacitance

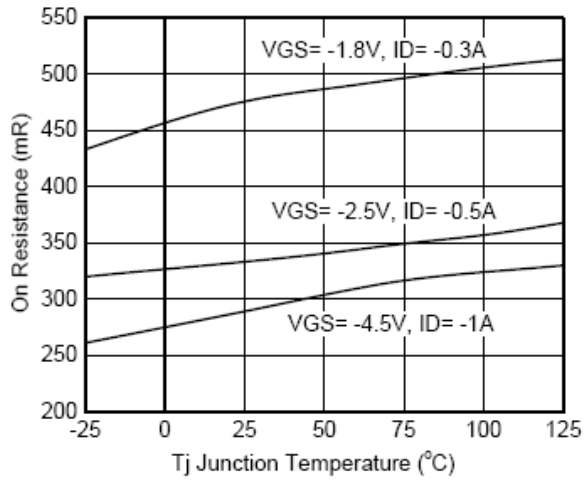


Figure 5 . On resistance VS Temperature

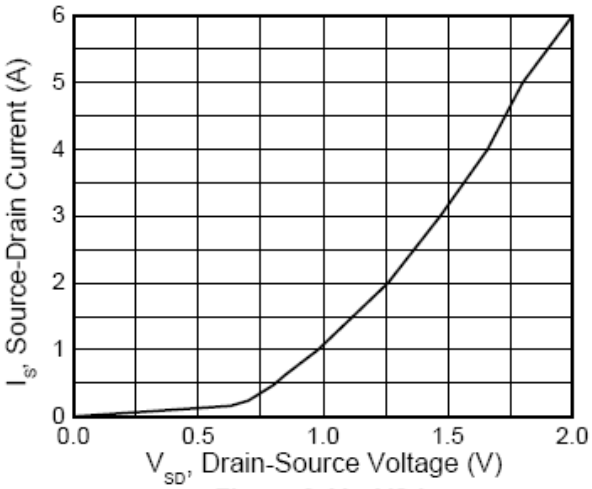


Figure 6. V_{SD} VS I_S

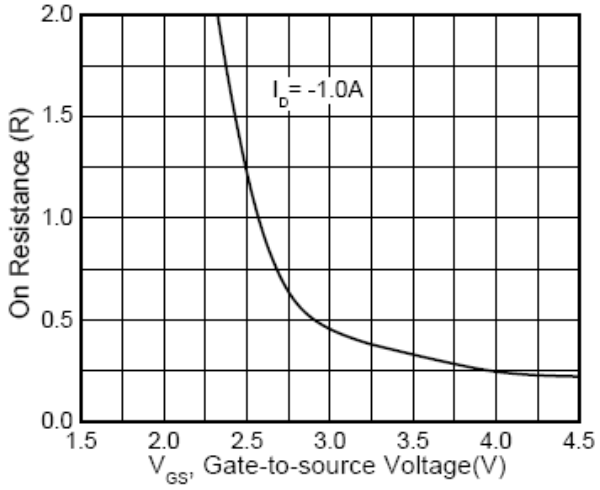


Figure 7. On Resistance VS V_{GS}

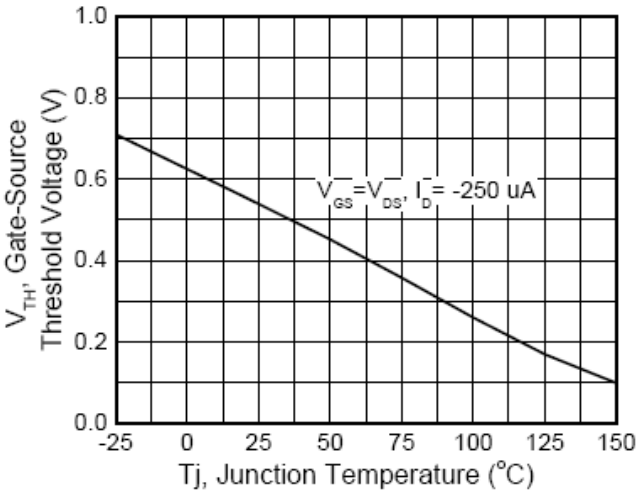
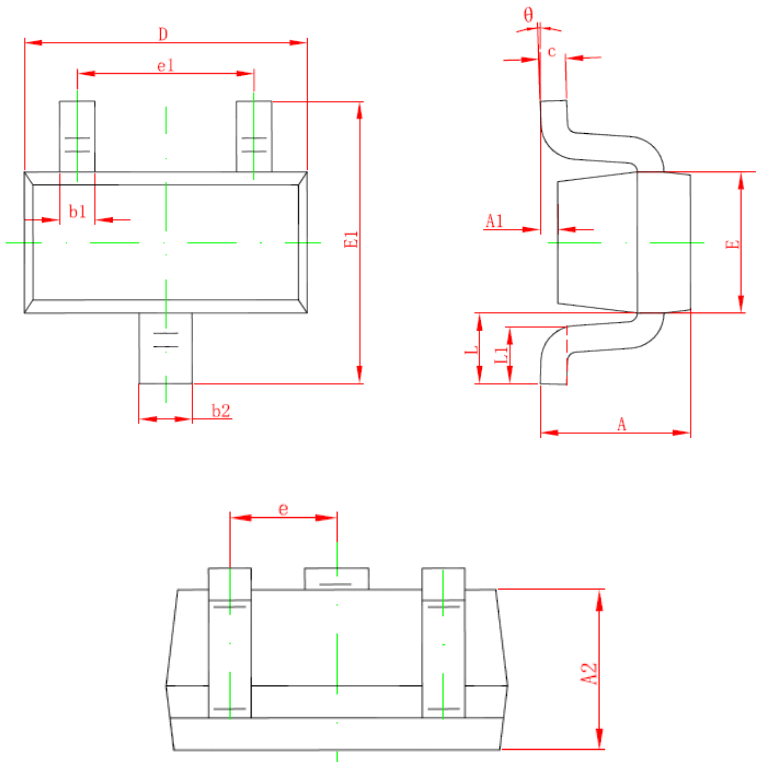


Figure 8. Gate Threshold Vs. Temperature

SOT-523 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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