SHANGHAI SINO-IC MICROELECTRONICS CO., LTD.

Jul 2015

SE2101

P-Channel Enhancement-Mode MOSFET

Revision: A

General Description

This type 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.

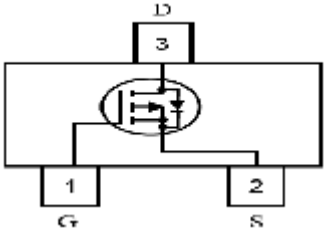
Features

For a single MOSFET

- V_{DS} = -20V
- I_D= -0.9A
- $R_{DS(ON)}$ = 280mΩ @ V_{GS}=-4.5V
- $R_{DS(ON)}$ = 370mΩ @ V_{GS}=-2.5V

Pin configurations

See Diagram below



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Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current	Continuous	I_D	-0.9	A
	Pulsed		-3	
Total Power Dissipation	@TA=25℃	P_D	250	mW
Operating Junction Temperature Range		T_J	-55 to 150	℃

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF CHARACTERISTICS (Note 2)						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=250μA, V_{GS}=0 V	-20			V
I_{DSS}	Drain to Source Leakage Current	V_{DS}= -16V, V_{GS}=0V			-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}= 12V			10	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=-250μA	-0.35	-0.6	-1	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance [2]	V_{GS}=-4.5V, I_D=-1A		280	300	mΩ
		V_{GS}=-2.5V, I_D=-0.5A		370	400	
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-6V, f=200KHz		200		pF
C_{oss}	Output Capacitance			80		pF
C_{rss}	Reverse Transfer Capacitance			150		pF
SWITCHING PARAMETERS						
$t_{d(on)}$	Turn-On Delay Time	V_{GS}=-4.5V, V_{DS}=-6V, R_{GEN}=6Ω, I_D=-1A		10		ns
$t_{d(off)}$	Turn-Off Delay Time			19		ns
$t_{d(r)}$	Turn-On Rise Time			62		ns
$t_{d(f)}$	Turn-Off Fall Time			18		ns

Thermal Resistance

Symbol	**Parameter**	**Typ**	**Max**	**Units**
$R_{\theta JC}$	Junction to Case	6.9	8	℃/W
$R_{\theta JA}$	Junction to Ambient (t≦10s)	52	62.5	℃/W

Typical Characteristics

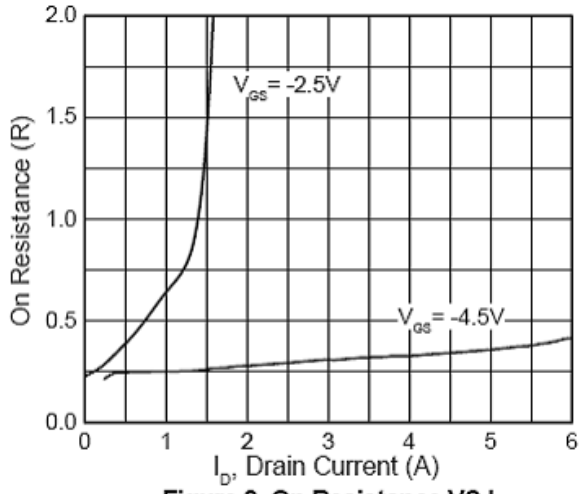

Figure 3. On Resistance VS I_D

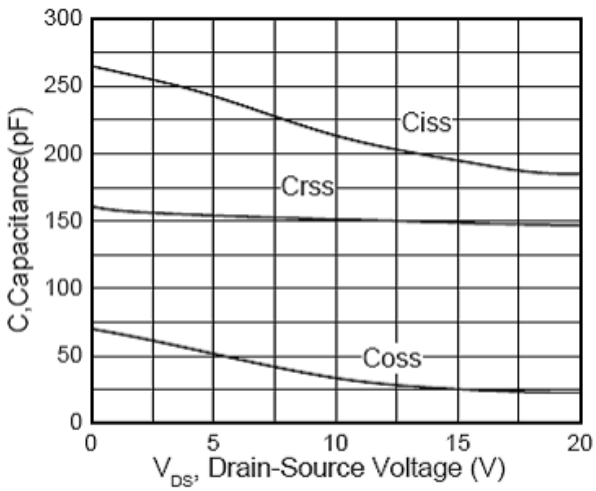

Figure 4. Capacitance

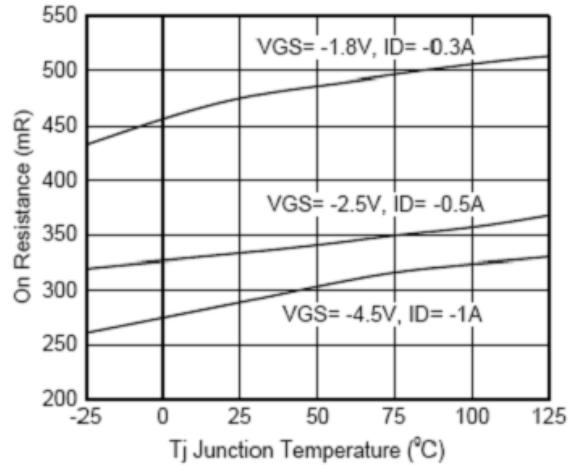

Figure 5 . On resistance VS Temperature

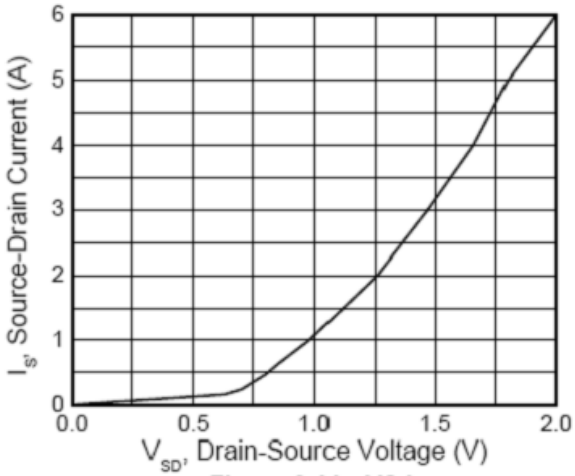

Figure 6. V_{SD} VS I_s

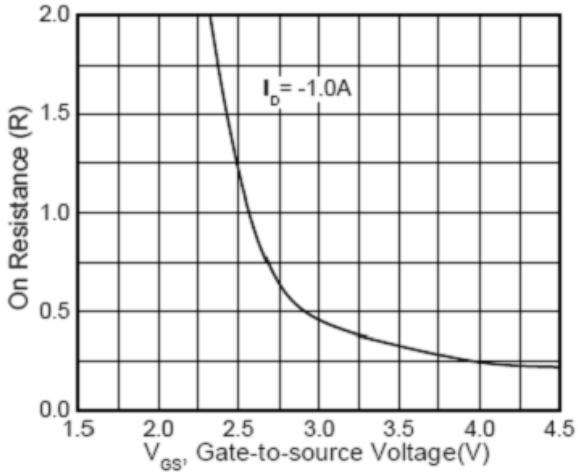

Figure 7. On Resistance VS V_{GS}

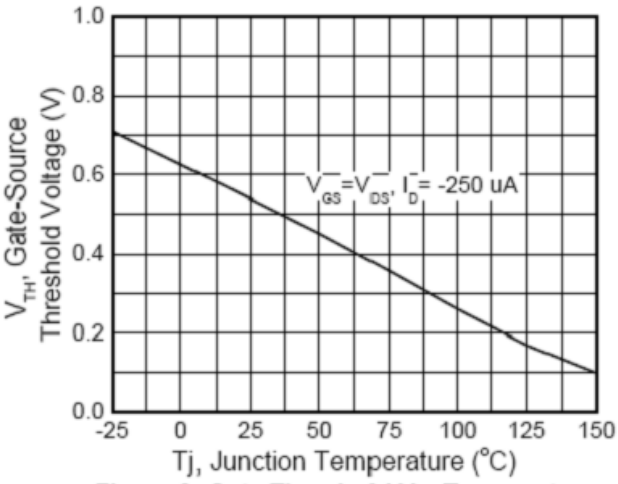

Figure 8. Gate Threshold Vs. Temperature

Package Outline Dimension

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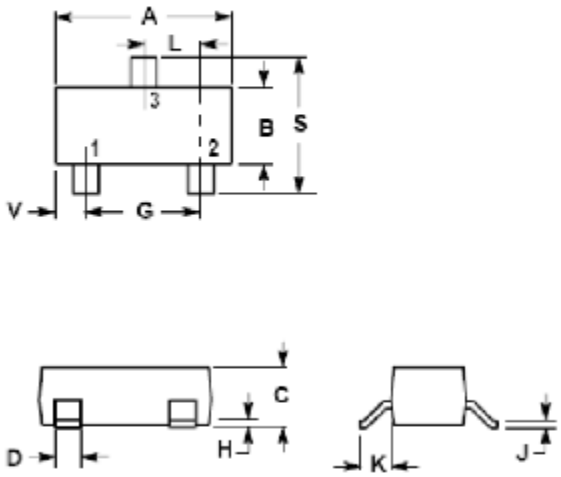

NOTES:

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