

**SE3301**  
**30V P-Channel Enhancement-Mode MOSFET**

Revision:B

**General Description**

The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

**General Description**

High Density Cell Design For Ultra Low On-Resistance Fully Characterized Avalanche Voltage and Current Improved Shoot-Through FOM

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device
- Pb-Free package is available

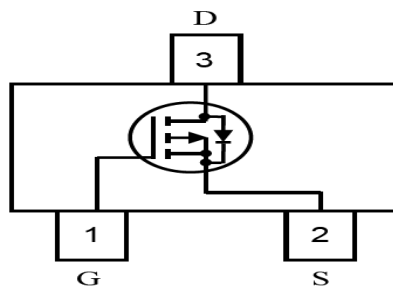
**Features**

For a single mosfet

- $V_{DS} = -30\text{ V}$
- $R_{DS(ON)} = 80\text{m}\Omega @ V_{GS}=-10\text{V} @ I_{ds}=-3.9\text{A}$
- $R_{DS(ON)} = 135\text{m}\Omega @ V_{GS}=-3.0\text{V} @ I_{ds}=-3.0\text{A}$

**Pin configurations**

See Diagram below

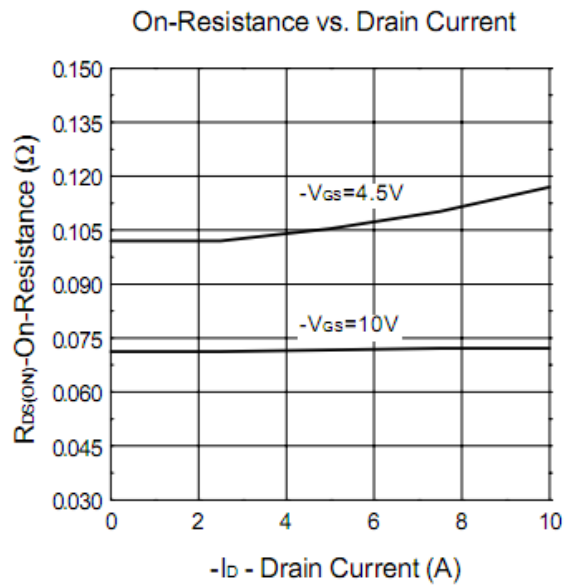
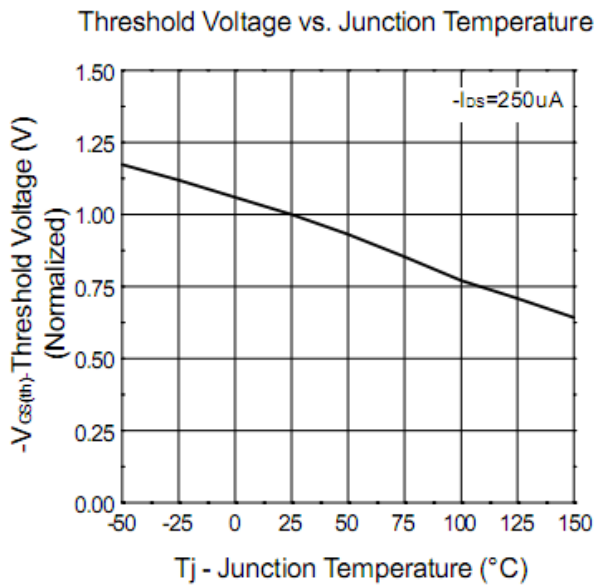
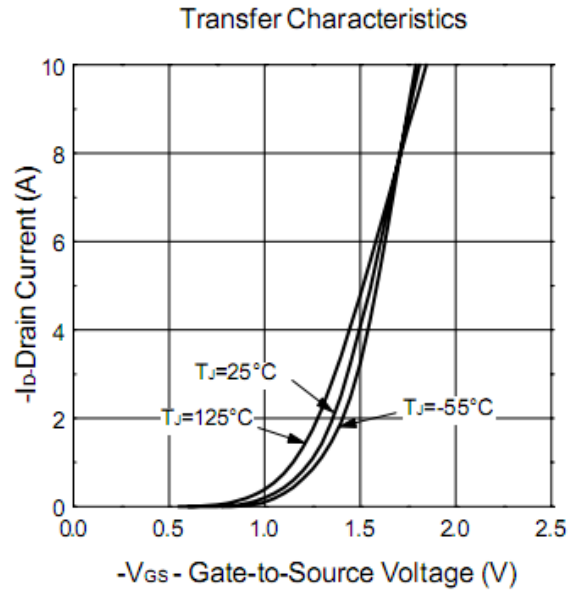
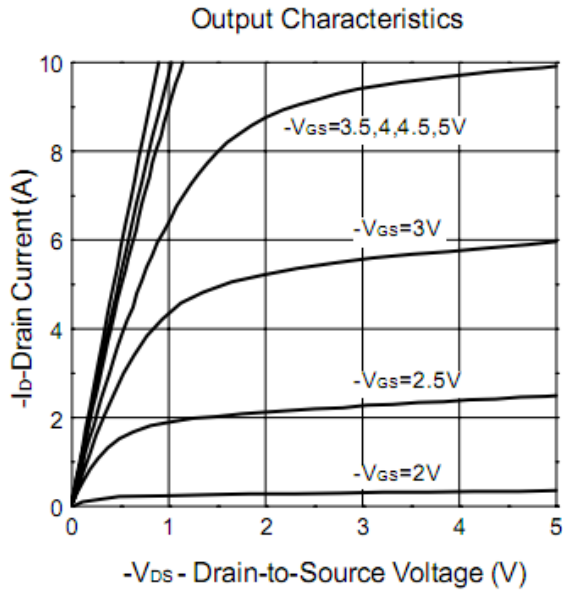


**Absolute Maximum Ratings**

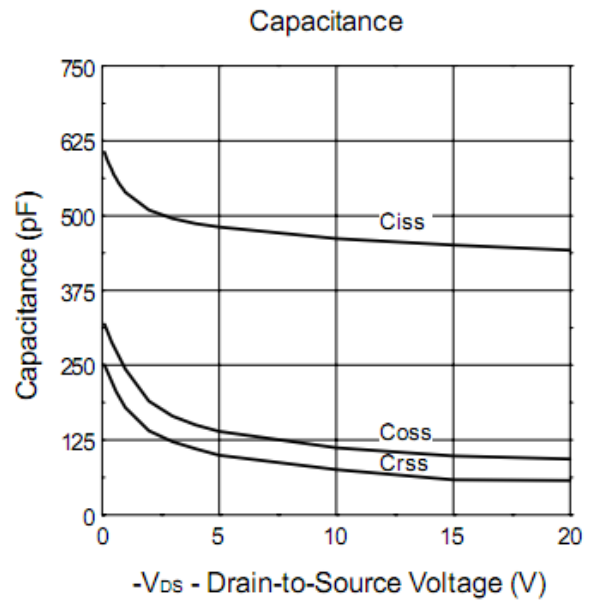
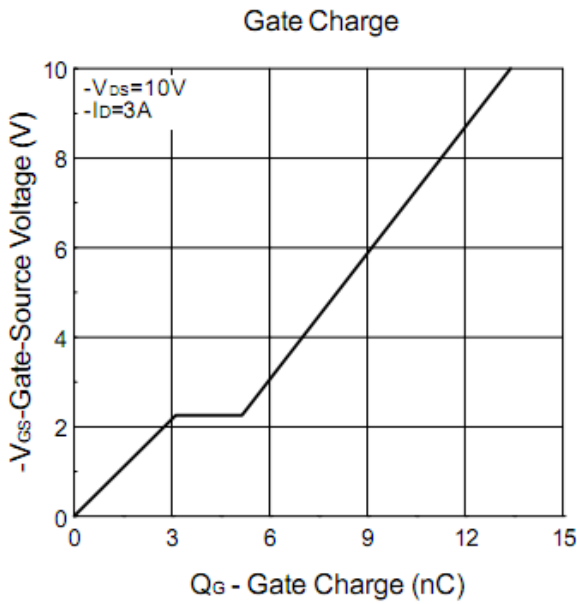
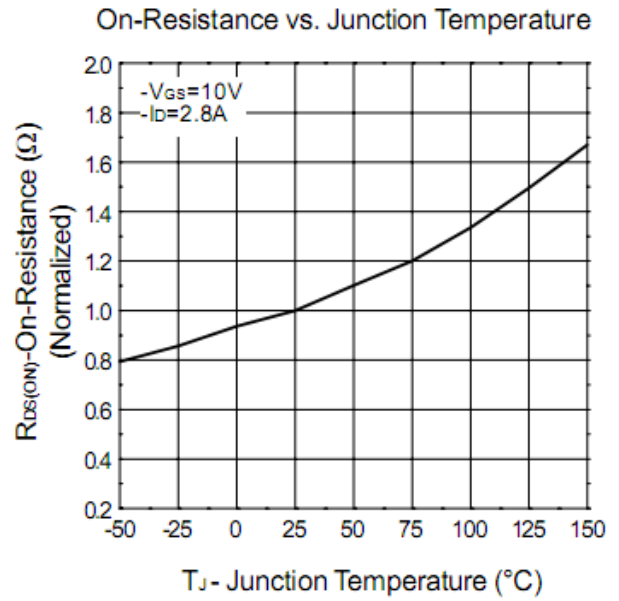
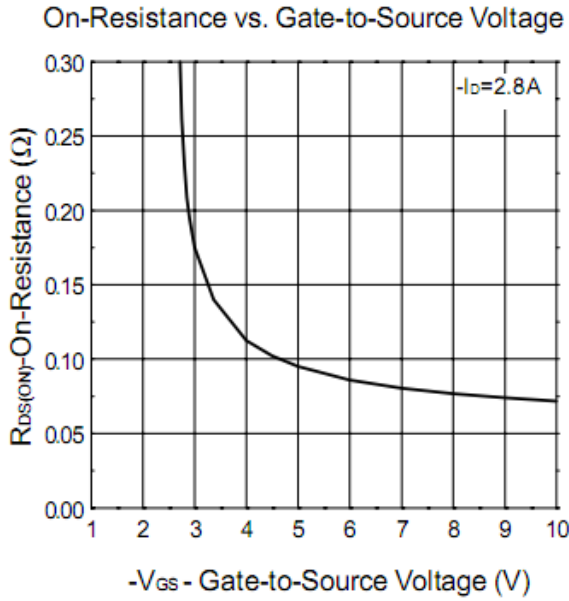
Parameter		Symbol	Rating	Units
Drain-Source Voltage		$V_{DS}$	-30	V
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Drain Current (Note 1)	Continuous	$I_D$	-3.9	A
	Pulsed		-20	
Total Power Dissipation	@ $T_A=25^\circ\text{C}$	$P_D$	1.25	W
	@ $T_A=75^\circ\text{C}$		0.8	
Operating Junction Temperature Range		$T_J$	-55 to 150	$^\circ\text{C}$

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>						
B <sub>V</sub> DSS	Drain-Source Breakdown Voltage	I <sub>D</sub> =-250 μ A, V <sub>GS</sub> =0 V	-30			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =-30 V, V <sub>GS</sub> =0 V			-1	μ A
I <sub>GSS</sub>	Gate-Body leakage current	V <sub>DS</sub> =0 V, V <sub>GS</sub> =±20 V			±0.1	μ A
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μ A	-1	-1.5	-3	V
R <sub>DS(on)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =-4.50V, I <sub>D</sub> =-3A	-	100	135	m Ω
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-3.9A	-	72	80	
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =5V, I <sub>D</sub> =4.5A		6.5		S
<b>DYNAMIC PARAMETERS</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =10V, f=1MHz		373		pF
C <sub>oss</sub>	Output Capacitance			138		pF
C <sub>rss</sub>	Reverse Transfer Capacitance			52		pF
<b>SWITCHING PARAMETERS</b>						
Q <sub>g</sub>	Total Gate Charge <sup>2</sup>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-6V, I <sub>D</sub> =-3.2A		15.2		nC
Q <sub>gs</sub>	Gate Source Charge			5.5		nC
Q <sub>gd</sub>	Gate Drain Charge			2.7		nC
t <sub>d(on)</sub>	Turn-On DelayTime <sup>2</sup>	V <sub>GS</sub> =-4.5V, V <sub>DD</sub> =-6V, R <sub>L</sub> =6 Ω, R <sub>G</sub> =6 Ω I <sub>D</sub> =-1A			17.3	ns
t <sub>d(off)</sub>	Turn-Off DelayTime				36.0	
t <sub>d(r)</sub>	Turn-On Rise Time				3.7	
t <sub>d(f)</sub>	Turn-Off Fall Time				3.2	

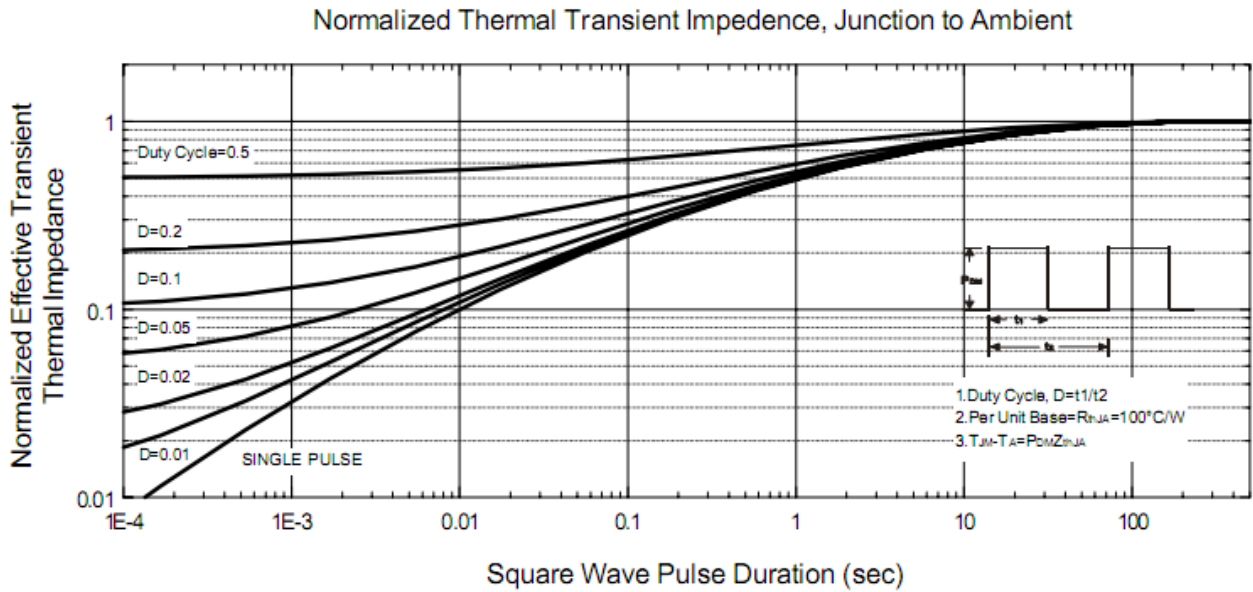
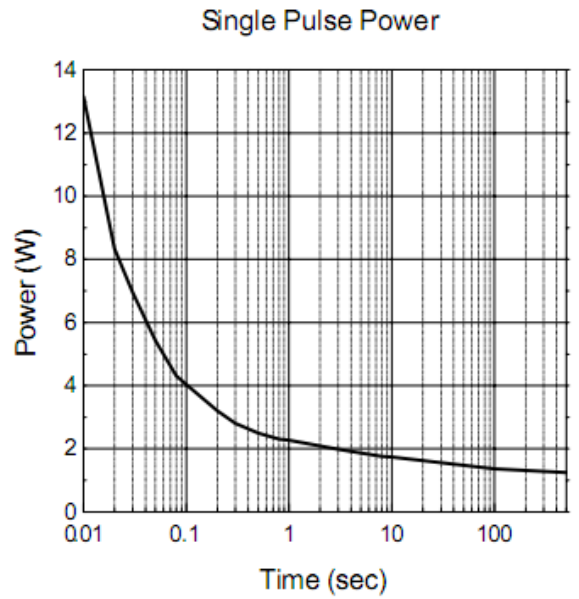
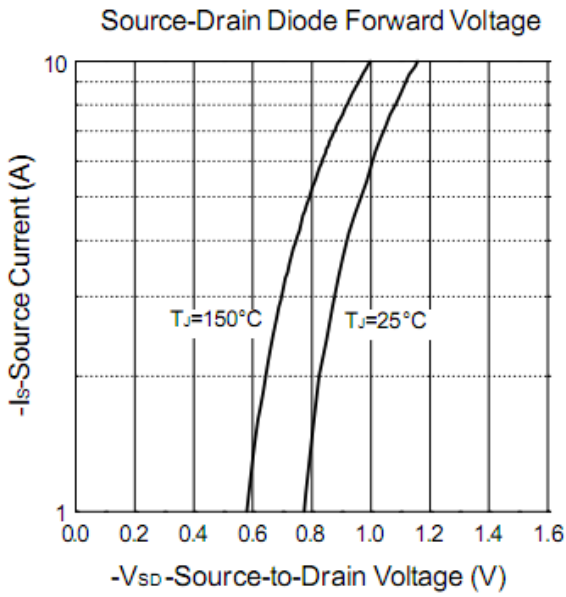
Typical Characteristics



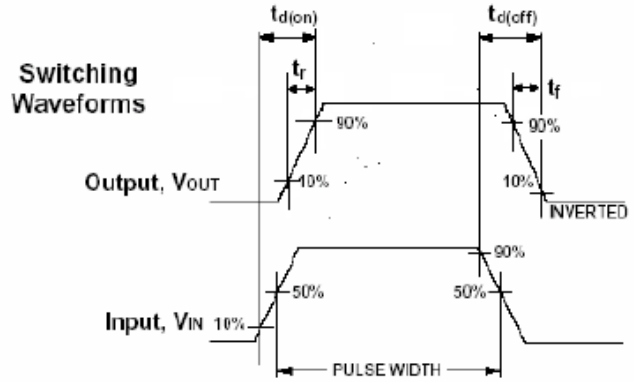
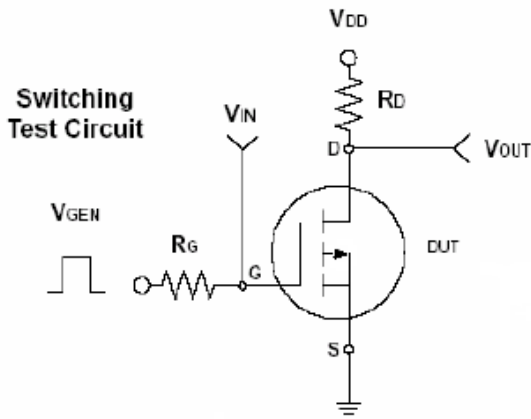
Typical Characteristics



Typical Characteristics

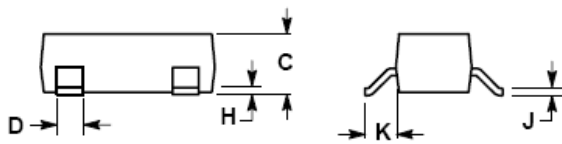
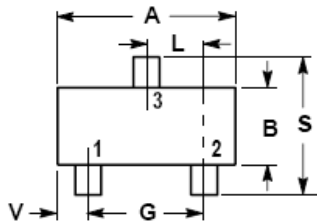


Typical Characteristics



Packaging Information

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

The SINO-IC logo is a registered trademark of ShangHai Sino-IC Microelectronics Co., Ltd.  
© 2005 SINO-IC – Printed in China – All rights reserved.

**SHANGHAI SINO-IC MICROELECTRONICS CO., LTD**

**Add:** Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong,  
Shanghai 201203, China

**Phone:** +86-21-33932402 33932403 33932405 33933508 33933608

**Fax:** +86-21-33932401

**Email:** [webmaster@sino-ic.com](mailto:webmaster@sino-ic.com)

**Website:** <http://www.sino-ic.com>