

SE2302C
N-Channel MOSFET

Revision: A

General Description

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

Features

- $V_{DS}(V) = 12V$
- $I_D = 3.3A$
- $R_{DS(ON)} = 36m\Omega @ V_{GS}=4.5V$

Pin configurations

See Diagram below



Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	12	V
Gate-Source Voltage		V_{GS}	± 8	V
Drain Current	Continuous	I_D	3.3	A
	Pulsed		9	
Total Power Dissipation	@ $T_A=25^\circ C$	P_D	1.25	W
Operating Junction Temperature Range		T_J	-55 to 150	$^\circ C$

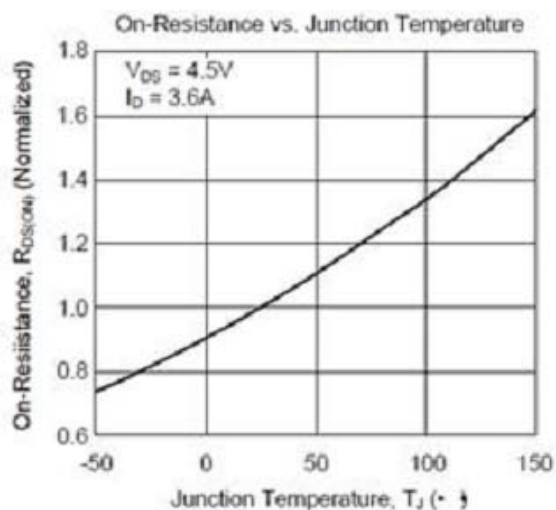
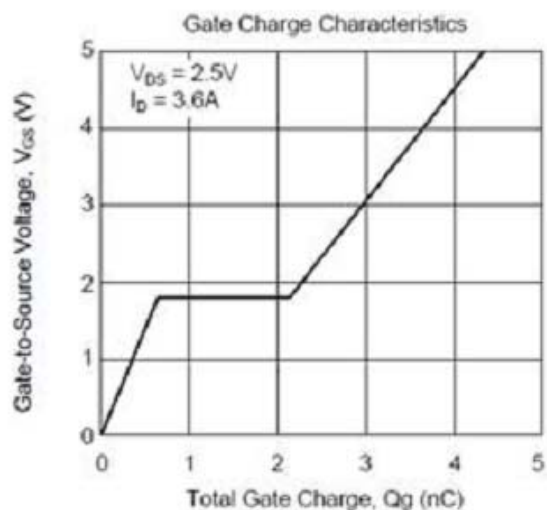
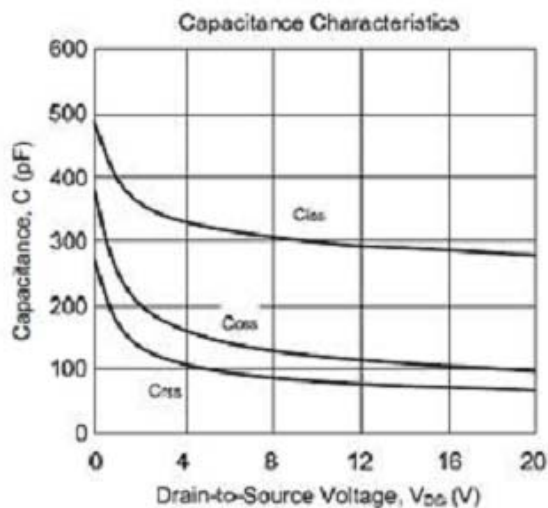
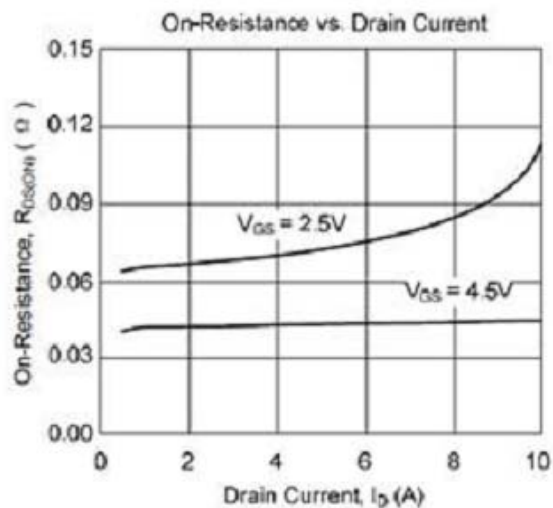
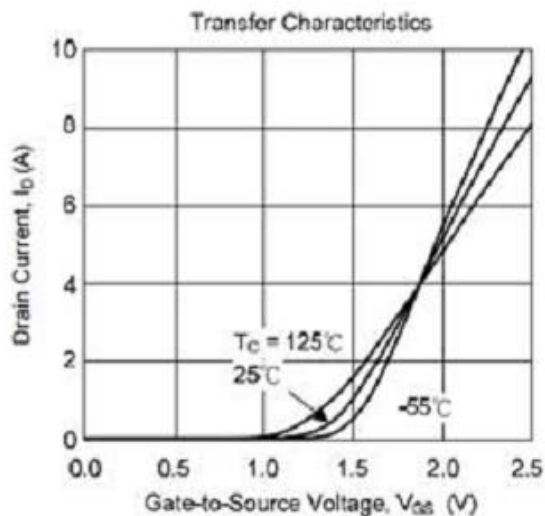
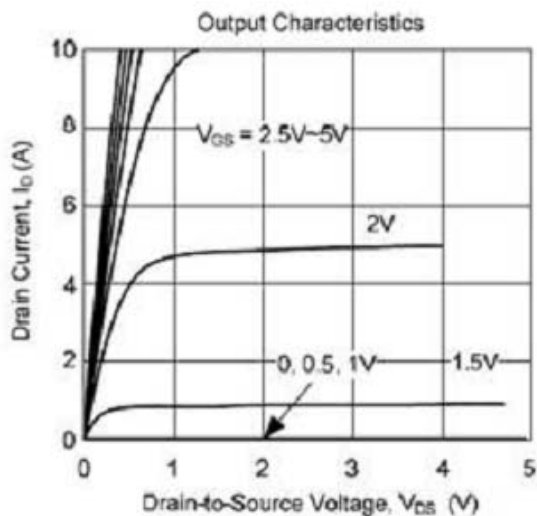
Thermal Resistance

Parameter		Symbol	Typ	Max	Units
Maximum Junction to Ambient	$t \leq 10s$	$R_{\theta JA}$	-	100	$^\circ C/W$

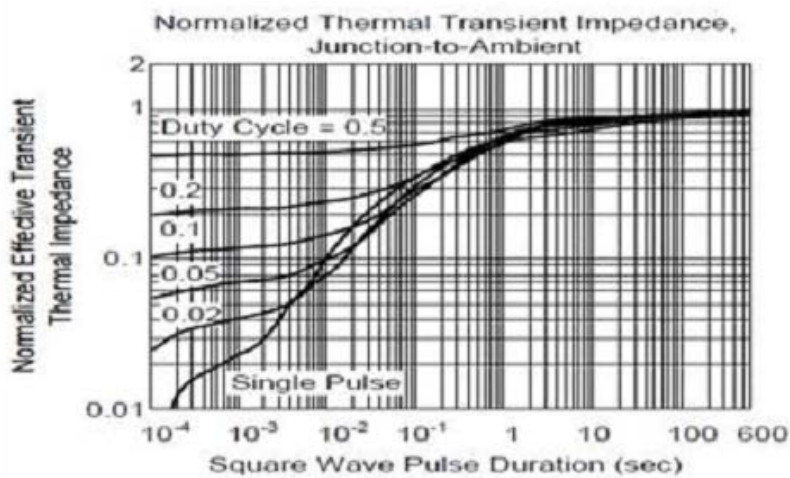
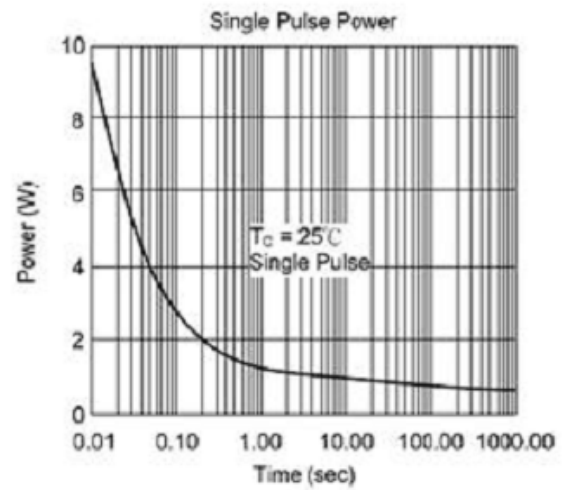
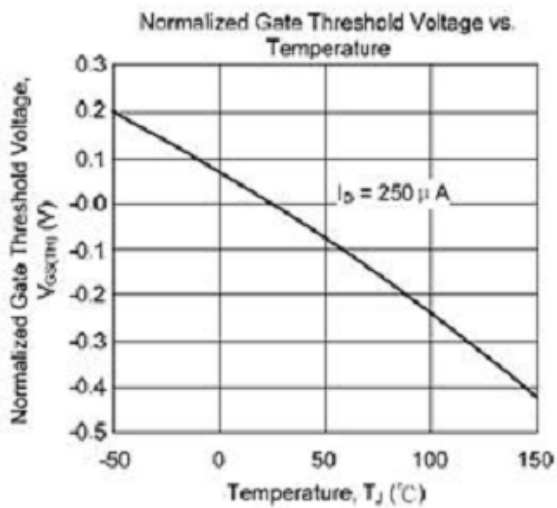
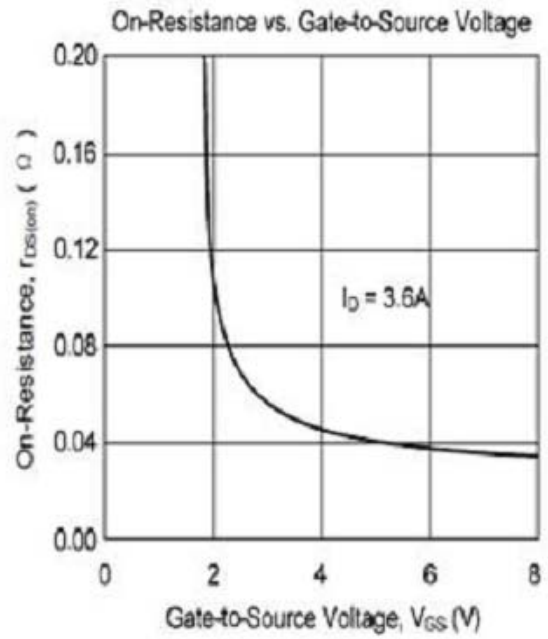
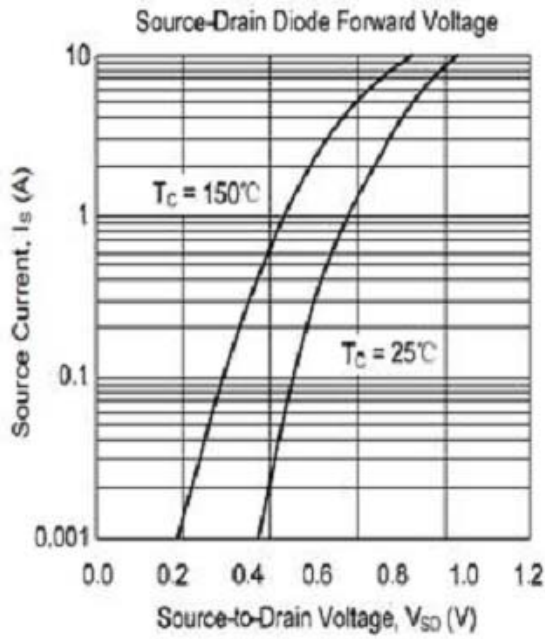
SE2302C

Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS (Note 2)						
B _V DSS	Drain-Source Breakdown Voltage	I _D =250μA, V _{GS} =0 V	12			V
I _{DSS}	Drain to Source Leakage Current	V _{DS} = 24V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =8 V			100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D =250μA	0.5		1.2	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =4.5V, I _D =1.5A	-	36	50	mΩ
		V _{GS} =2.5V, I _D =1.0A		47	70	mΩ
		V _{GS} =1.8V, I _D =2.0A		46	68	mΩ
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V, f=1MHz		450		pF
C _{oss}	Output Capacitance			70		pF
C _{rss}	Reverse Transfer Capacitance			43		pF
SWITCHING PARAMETERS						
Q _g	Total Gate Charge ²	V _{GS} =10V, V _{DS} =4.5V, I _D =3.6A		5.2	10	nC
Q _{gs}	Gate Source Charge			0.65		nC
Q _{gd}	Gate Drain Charge			1.5		nC
t _{d(on)}	Turn-On Delay Time	V _{GS} =10V, I _D =1A, V _{DS} =10V, R _{GEN} =6Ω		7	15	ns
t _{d(off)}	Turn-Off Delay Time			16	60	ns
Tr	Turn-on Rise Time			55	80	ns
Tf	Turn-on Fall Time			20	25	ns
V _{SD}	Drain-Source Diode Forward Voltage		V _{GS} =0V, I _S =1.0A		0.76	1.2
I _S	Drain-Source diode forward Current				1.6	A

Typical Characteristics



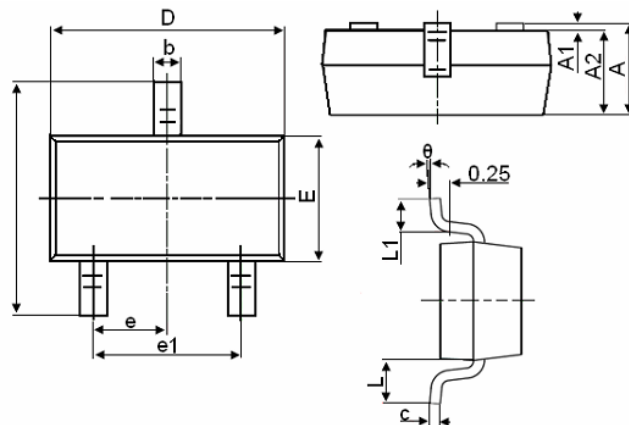
Typical Characteristics



SE2302C

Package Outline Dimension

SOT-23



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
theta	0°	8°

Notes

1. All dimensions are in millimeters.
2. Tolerance $\pm 0.10\text{mm}$ (4 mil) unless otherwise specified.
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
4. Dimension L is measured in gauge plane.

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

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