SHANGHAI SINO-IC
MICROELECTRONICS CO., LTD.

July 2008

SE2N7002
60V,300mA N-Channel MOSFET

Revision:A

General Description

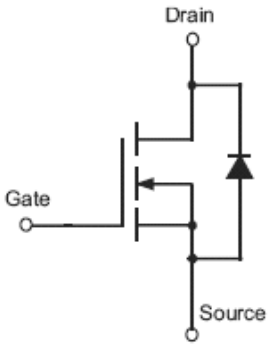
The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

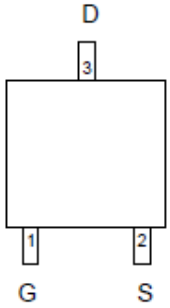
Features

- $V_{DS\ (V)}$ = 60V
- I_D = 300mA
- $R_{DS(ON)}$ < 2Ω (V_{GS} = 10V,I_D=0.5A)
- $R_{DS(ON)}$ < 3Ω (V_{GS} = 5V,I_D=0.05A)

Pin configurations

See Diagram below





Top View of SOT-23

Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current (Note 1)	Continuous	I_D	300	mA
	Pulsed		800	
Total Power Dissipation		P_D	350	mW
Operating Junction Temperature Range		T_J	-55 to 150	°C

Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient A	t ≤ 5s	$R_{\theta JA}$	357	-	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF/ON CHARACTERISTICS (Note 2)						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=10 μ A, V_{GS}=0 V	60			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V, V_{GS}=0 V			1	μ A
I_{GSS}	Gate-Body leakage current	V_{DS}=0 V, V_{GS}=±20 V			±10	μ A
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} I_D=250uA	1		2.5	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance2	V_{GS}=10V, I_D=0.5A		2	-	Ω
		V_{GS}=5V, I_D=0.05A		3	-	Ω
$\|Y_{fs}\|$	Forward Transfer Admittance	V_{GS} = 10 V, I_S =0.2 A	80			ms
DYNAMIC PARAMETERS						
Ciss	Input Capacitance	VGS=0V, VDS=25V, f=1MHz			50	pF
Coss	Output Capacitance				25	pF
Crss	Reverse Transfer Capacitance				5	pF

Typical Characteristics

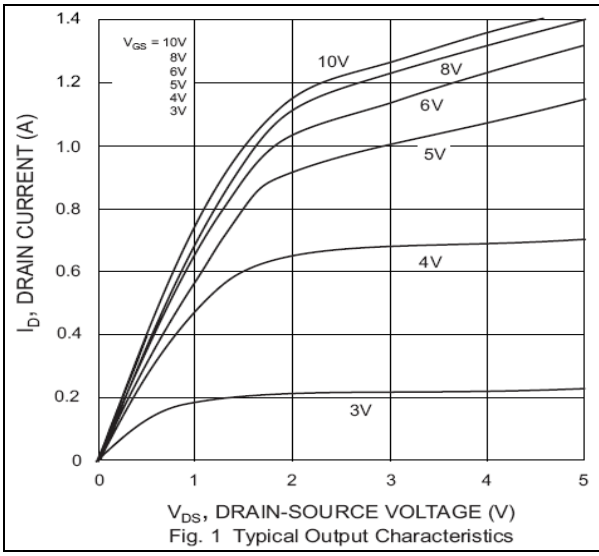


Fig. 1 Typical Output Characteristics

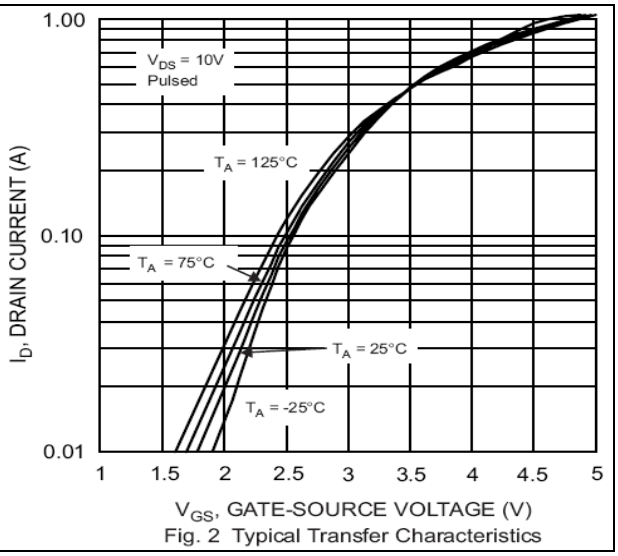


Fig. 2 Typical Transfer Characteristics

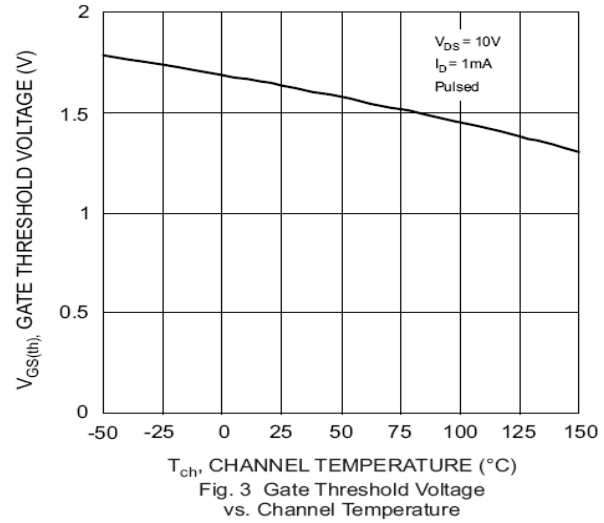


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

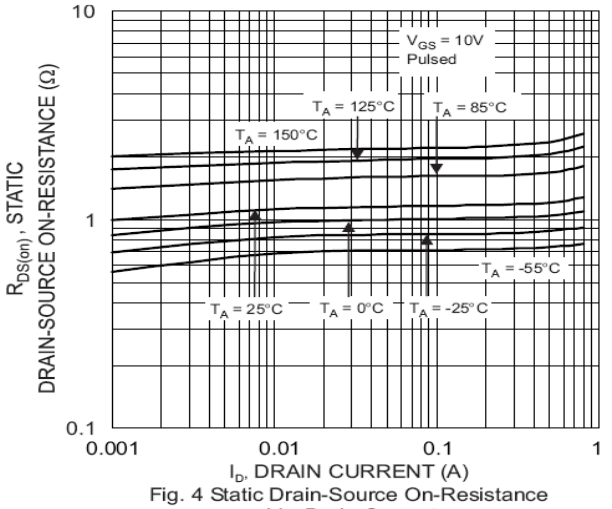


Fig. 4 Static Drain-Source On-Resistance Vs. Drain Current

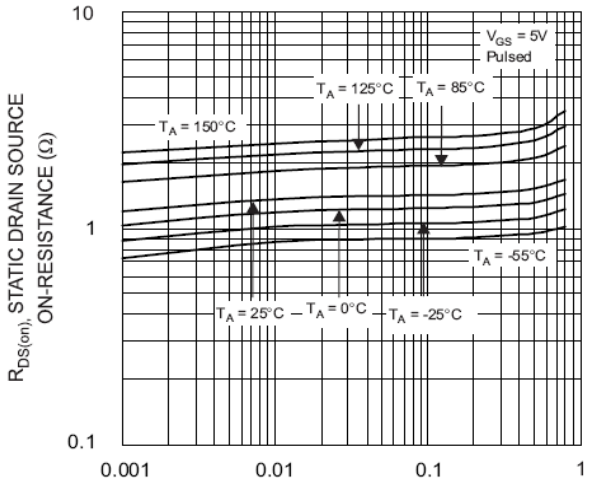


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

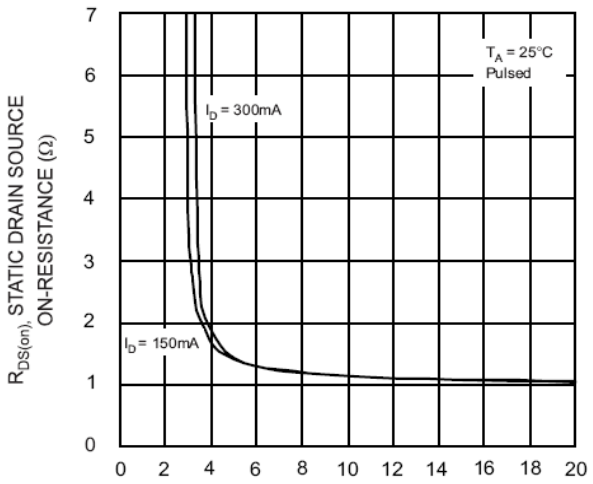


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

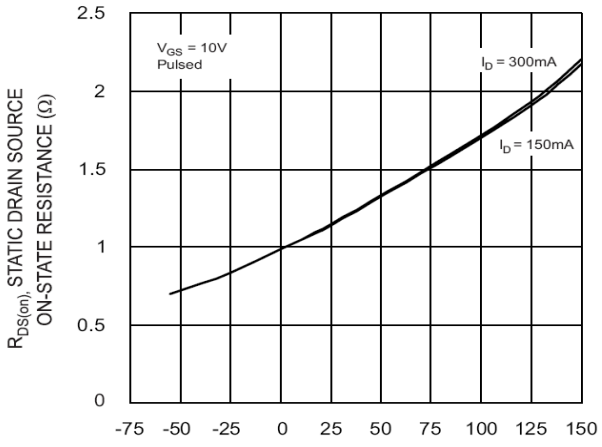


Fig. 7 Static Drain-Source On-State Resistance vs. Channel Temperature

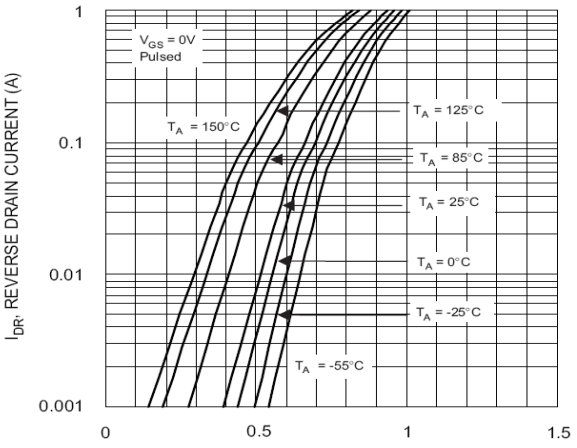


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

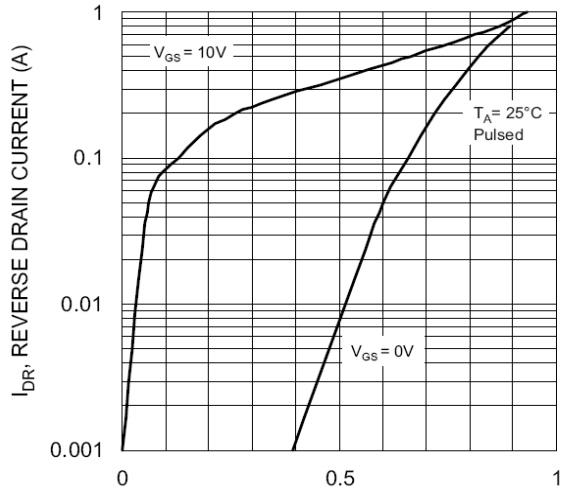


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

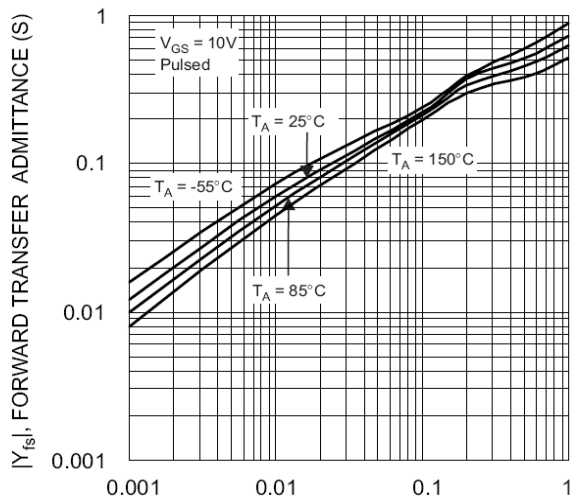
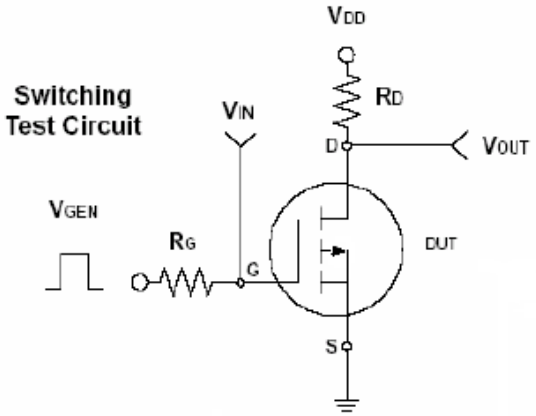
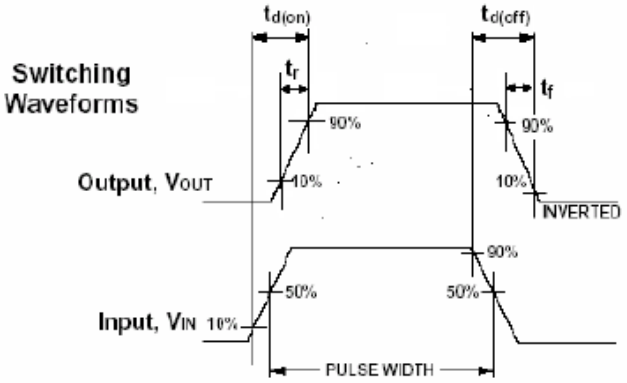


Fig.10 Forward Transfer Admittance vs. Drain Current

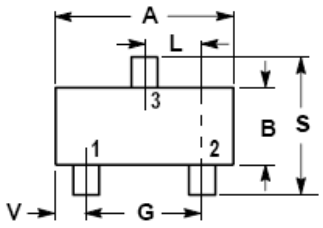
Typical Characteristics

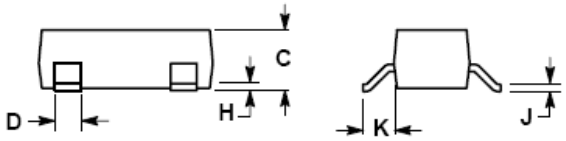




Packaging Information

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

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: szrxw002@126.com
Website: http://www.sino-ic.net

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