无边界 ChipNobo

ChipNobo Co., Ltd

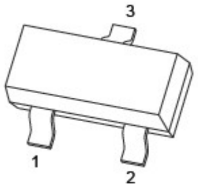
2N7002K_R1_00001-CN

SOT-23 Plastic-Encapsulate N-Channel MOSFET

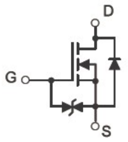
V(BR)DSS	RDS(ON)MAX	ID
60V	5Ω@10V 5.3Ω@4.5V	340mA

SOT-23

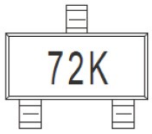
1. GATE
2. SOURCE
3. DRAIN



Equivalent circuit



MARKING



特征 Features

- High density cell design for low RDS(ON).
- Voltage controlled small signal switch.
- Rugged and reliable.
- High saturation current capability.
- ESD protected
- Load Switch for Portable Devices.
- DC/DC Converter.

机械数据 Mechanical Data

- 封装: SOT-23 封装 SOT-23 Small Outline Plastic Package.
- 环氧树脂 UL 易燃等级 Epoxy UL: 94V-0.
- 安装位置: 任意 Mounting Position: Any.

极限值和温度特性(TA = 25℃ 除非另有规定)

Maximum Ratings & Thermal Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified.)

参数 Parameters	符号 Symbol	数值 Value	单位 Unit
Drain-Source Voltage	VDS	60	V
Gate-Source Voltage	VGS	±20	V
Continuous Drain Current	ID	340	mA
Power Dissipation	PD	350	mW
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-50-+150	℃
Thermal Resistance From Junction to Ambient	RθJA	357	℃/W

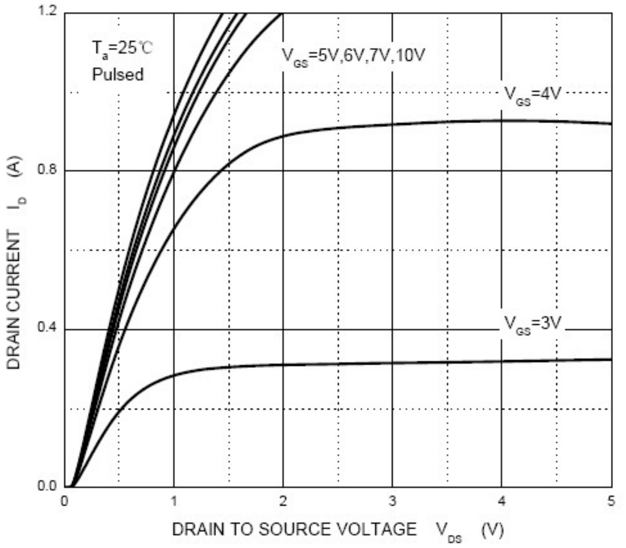
电特性 (TA = 25℃ 除非另有规定)

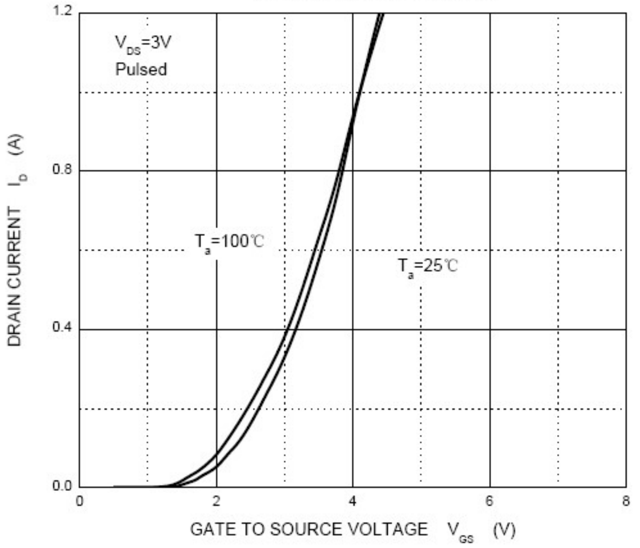
Electrical Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified).

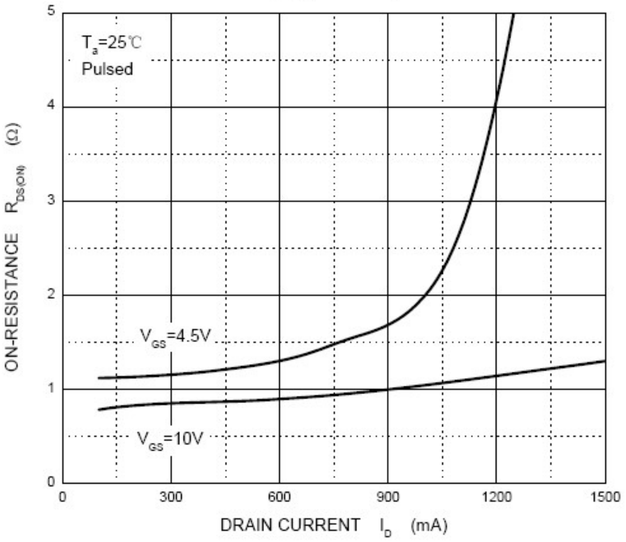
参数 Parameter	符号 Symbols	测试条件 Test Condition	界限 Limits			单位 Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	VDS	VGS=0V, ID=250uA	60			V
Gate-Threshold voltage*	Vth(GS)	VDS=VGS, ID=1mA	1	1.3	2.5	V
Gate-body Leakage	IGSS1	VDS=0V, VGS=±20V			±10	uA
	IGSS	VDS=0V, VGS=±10V			±200	nA
	IGSS	VDS=0V, VGS=±5V			±100	nA
Zero Gate Voltage Drain current	IDSS	VDS=48V, VGS=0V			1	uA
Drain-Source On-Resistance*	RDS(ON)	VGS=10V, ID=500mA		0.9	5	Ω
		VGS=4.5V, IC=200mA		1.1	5.3	
Diode Forward voltage	VSD	IS=300mA, VGS=0V			1.50	V
Input capacitance**	Ciss	VDS=10V, VGS=0V,f=1MHz			40	pF
Output capacitance**	Coss				30	
Reverse Transfer capacitance**	Crss				10	
SWITCHING TIME						
Turn-on Time**	td(on)	VDD=50V, RL=250Ω, VGS=10V, RGS=50Ω, RG=50Ω			10	ns
Turn-off Time**	td(off)				15	
Reverse recovery Time	trr	VGS=0V, IS=300mA, VR=25V, Dis/dt=-100a/uS		30		ns
GATE-SOURCE ZENER DIODE						
Gate-Source Breakdown Voltage	BVGSO	Igs=±1mA(Open Drain)	±21.5		±30	V

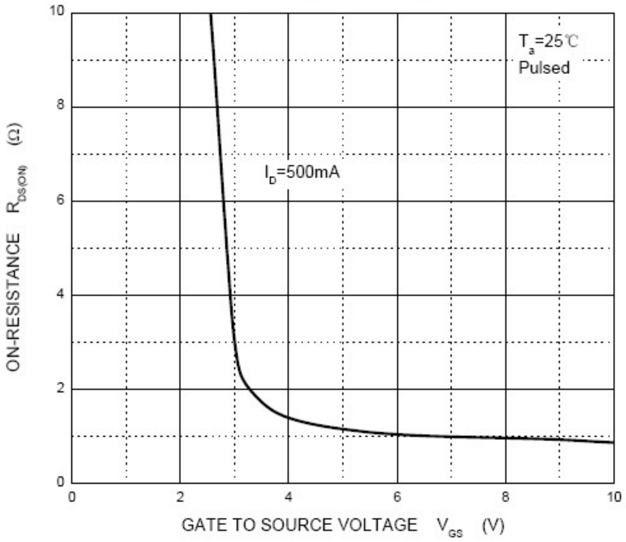
Notes: * Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
** These parameters have on way to verify.

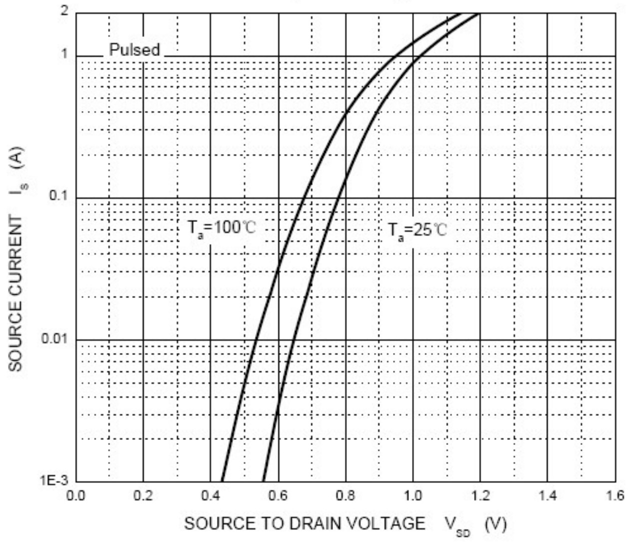
Typical characteristics

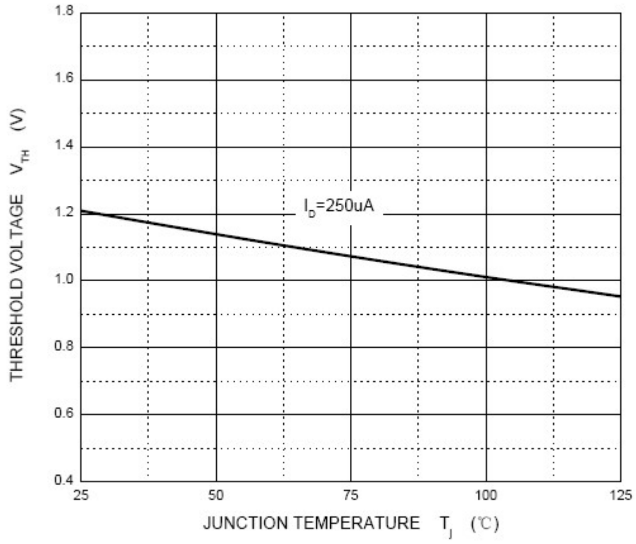

Output Characteristics


Transfer Characteristics

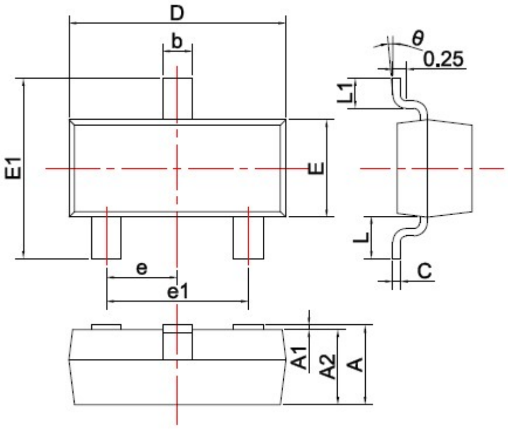

$R_{DS(ON)}$ — I_D


$R_{DS(ON)}$ — V_{GS}


I_S — V_{SD}


Threshold Voltage

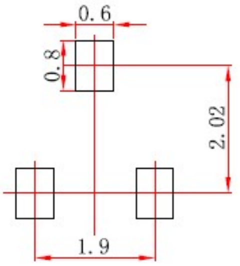
SOT-23 PACKAGE OUTLINE Plastic surface mounted package



SYMBOL	DIMENSIONS	
	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
θ	0°	8°

Unit: mm

焊盘设计参考Precautions: PCB Design
Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout Is for reference purposes only.

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