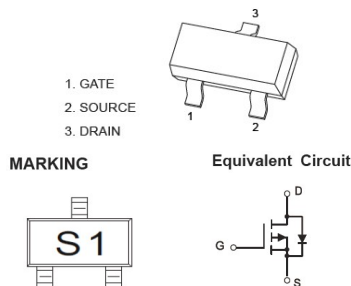




# N-Channel Enhancement Mode Power MOSFET

V(BR)DSS	RDS(ON)MAX	ID
-20V	112mΩ@-4.5V	-2.3A
	142mΩ@-2.5V	

**SOT-23**



**特征 Features**

- TrenchFET Power MOSFET
- 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°C 除非另有规定)**

**Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)**

参数 Parameters	符号 Symbol	数值 Value	单位 Unit
Drain-Source Voltage	V <sub>DS</sub>	-20	V
Gate-Source Voltage	V <sub>GS</sub>	±8	V
Continuous Drain Current	I <sub>D</sub>	-2.3	A
Pulsed Drain Current	I <sub>DM</sub>	-10	
Continuous Source-Drain Diode Current	I <sub>S</sub>	-0.72	
Power Dissipation	P <sub>D</sub>	400	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-50-+150	°C
Thermal Resistance From Junction to Ambient	R <sub>θJA</sub>	312.5	°C/W

**电特性 (TA = 25°C 除非另有规定)**

**Electrical Characteristics (Ratings at 25°C 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	
<b>Static</b>						
Drain-Source Breakdown Voltage	V(BR)DSS	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-20			V
Gate-Threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-0.4	-0.7	-1.0	V
Gate-body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Zero Gate Voltage Drain current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			-1	uA
Drain-Source On-Resistance(a)	RDS(ON)	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.8A		90	112	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>C</sub> =-2A		110	142	
Forward trans conductance(a)	g <sub>fs</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-2.8A		6.5		S
<b>Dynamic(b)</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHz			405	pF
Output capacitance	C <sub>oss</sub>				75	
Reverse Transfer capacitance	C <sub>rss</sub>				55	
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A		5.5	10	nC
Gate-source charge	Q <sub>gs</sub>			3.3	6	
Gate-drain charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-3A		0.7		
Gate resistance	R <sub>g</sub>		F=1MHz		1.3	
Turn-on Time	td(on)	V <sub>DD</sub> =-10V, R <sub>L</sub> =10Ω, V <sub>GEN</sub> =-4.5V, I <sub>D</sub> =-1A, R <sub>G</sub> =1Ω		11	20	ns
Rise time	tr			35	60	
Turn-off Time	td(off)			30	50	
Fall time	tf			10	20	
<b>Drain-source body diode characteristics</b>						
Continuous source-drain diode current	I <sub>S</sub>	T <sub>c</sub> =25°C			-3	A
Pulse diode forward current (a)	I <sub>SM</sub>				-10	
Body diode voltage	V <sub>SD</sub>	I <sub>S</sub> =-0.7A,		-0.8	-1.2	V

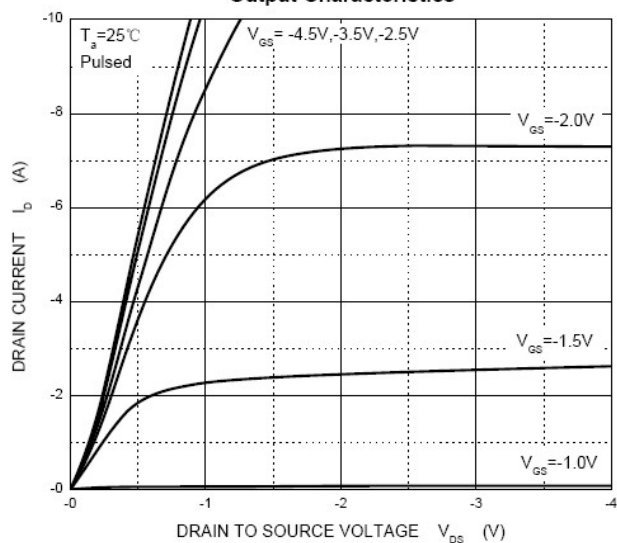
Notes: a. Pulse Test: Pulse Width ≤300us, Duty Cycles≤2%.



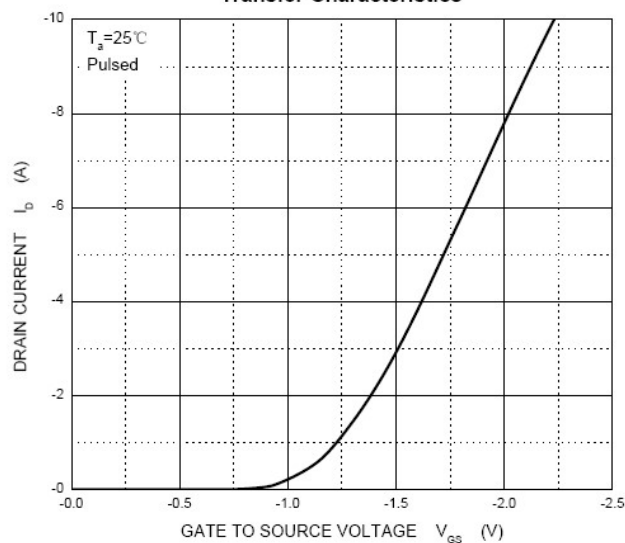
# N-Channel Enhancement Mode Power MOSFET

## Typical characteristics

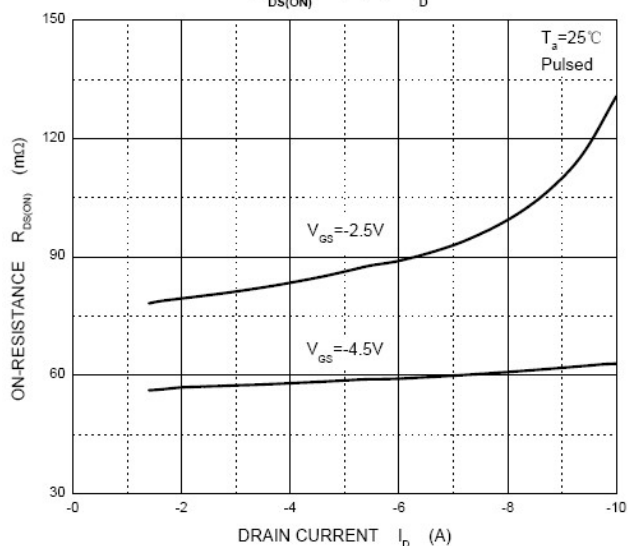
Output Characteristics



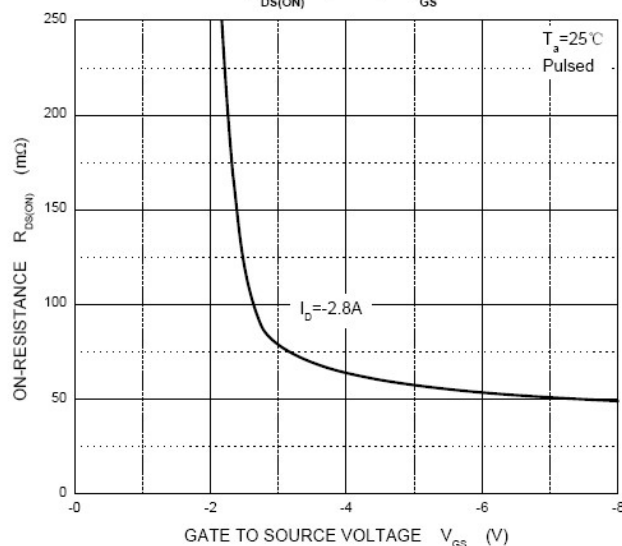
Transfer Characteristics



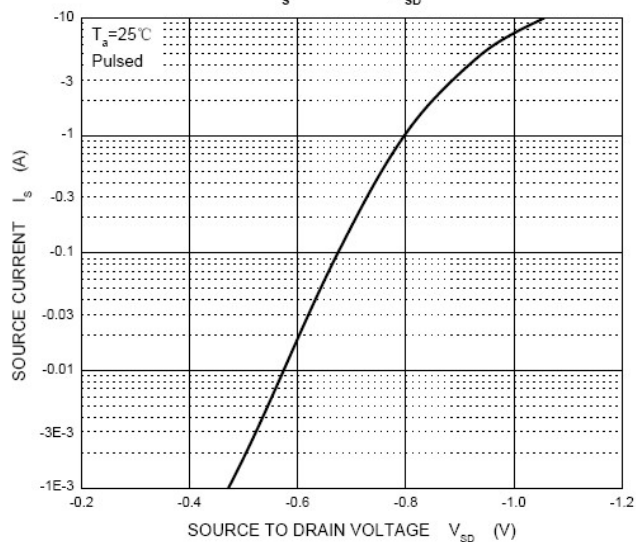
$R_{DS(ON)}$  —  $I_d$



$R_{DS(ON)}$  —  $V_{gs}$



$I_s$  —  $V_{SD}$

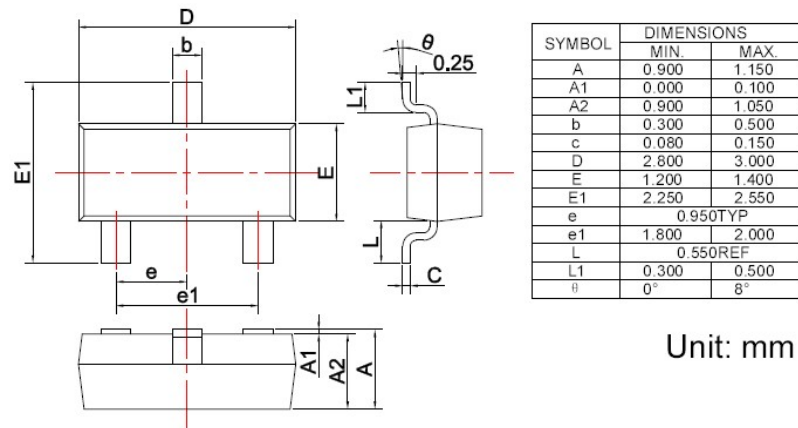




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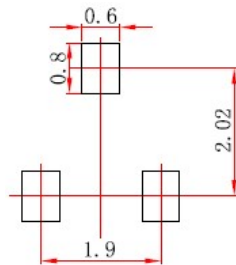
# N-Channel Enhancement Mode Power MOSFET

## SOT-23 PACKAGE OUTLINE Plastic surface mounted package



### 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:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

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