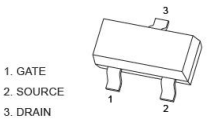
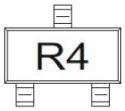
$V_{(BR)DSS}$	$R_{DS(ON)MAX}$	I_D
30V	30mΩ@10V	5.8A
	42mΩ@4.5V	

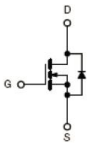
SOT-23



MARKING



Equivalent Circuit



SOT-23 贴片塑封场效应管
SOT-23 Plastic-Encapsulate MOSFET

特征 Features

- High dense cell design for extremely low $R_{DS(on)}$.
- Exceptional on-resistance and maximum DC current capability.
- Load/Power Switching.
- Interfacing Switching

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	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	5.8	A
Drain Current-Pulsed(note 1)	I_{DM}	30	
Junction Temperature	T_j	150	℃
Storage Temperature	Tstg	-50-+150	℃
Thermal Resistance From Junction to Ambient (note 2)	$R_{\theta JA}$	357	℃/W

电特性 (TA = 25℃ 除非另有规定)

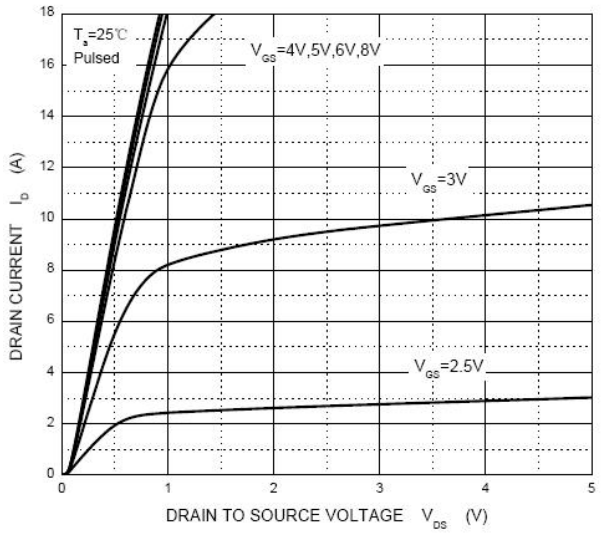
Electrical Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified).

参数 Parameter	符号 Symbols	测试条件 Test Condition	界限 Limits			单位 Unit
			Min	Typ	Max	
Off characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	30			V
Zero Gate Voltage Drain current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	uA
Gate-body Leakage	I_{GSS}	V_{DS}=±20V, V_{DS}=0V			±100	nA
On characteristics						
Drain-Source On-Resistance (note 3)	$R_{DS(ON)}$	V_{GS}=10V, I_D=5.8A		23	30	mΩ
		V_{GS}=4.5V, I_D=4.8A		31	42	
Forward trans conductance	gfs	V_{DS}=5V, I_D=5.8A	5			S
Gate-Threshold voltage*	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	1.0	1.4	3.0	V
Dynamic characteristics (note 4,5)						
Input capacitance	Ciss	V_{DS}=15V, V_{GS}=0V,f=1MHz			820	pF
Output capacitance	Coss			118		
Reverse Transfer capacitance	Crss			85		
Gate resistance	Rg	V_{DS}=0V, V_{GS}=0V,f=1MHz			1.5	Ω
Switching characteristics (note 4,5)						
Turn-on Time	td(on)	V_{GS}=10V, R_L=2.6Ω, V_{DS}=15V, R_{GEN}=3Ω			6.5	ns
Rise time	tr			3.1		
Turn-off Time	td(off)			15.1		
Fall time	tf			2.7		
Drain-source diode characteristics and maximum ratings						
Diode forward voltage	V_{SD}	I_S=1A, V_{GS}=0V			1.0	V

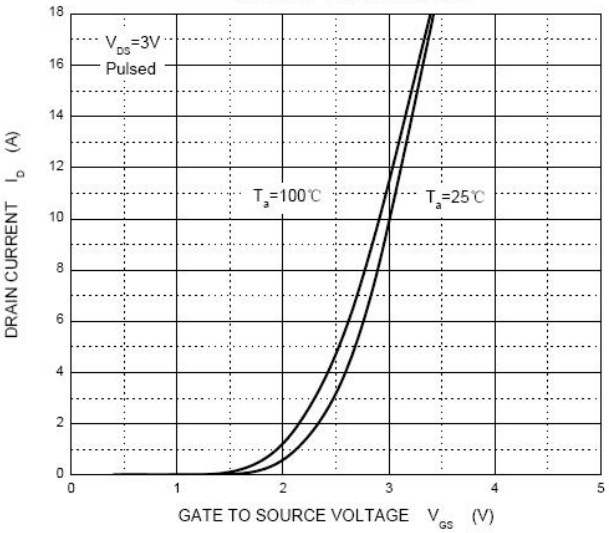
Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t<5 sec.
3. Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
4. Guaranteed by design, not subject to production testing.

Typical characteristics

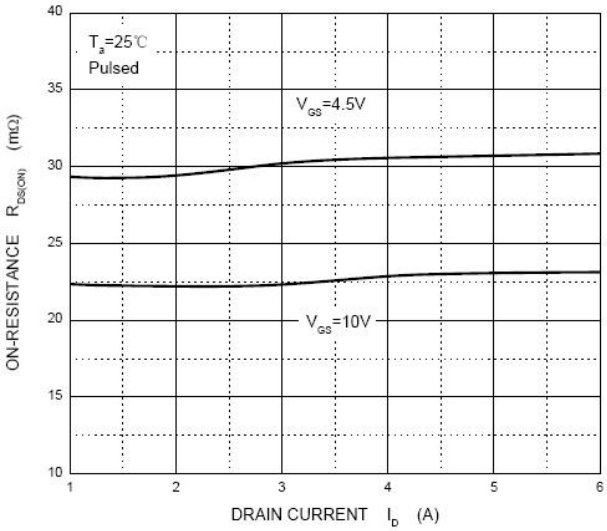
Output Characteristics



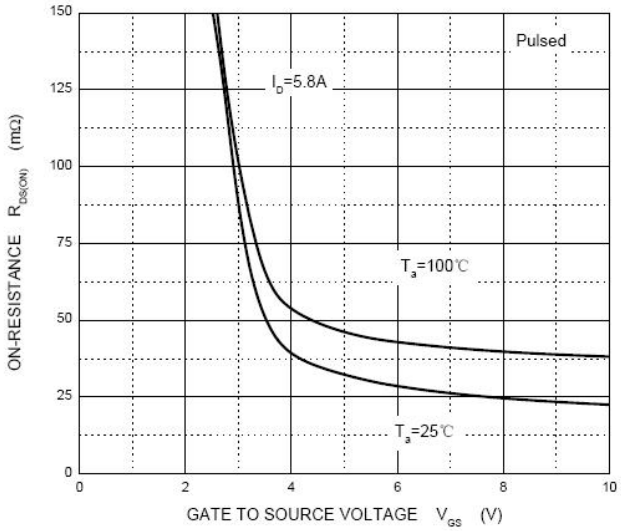
Transfer Characteristics



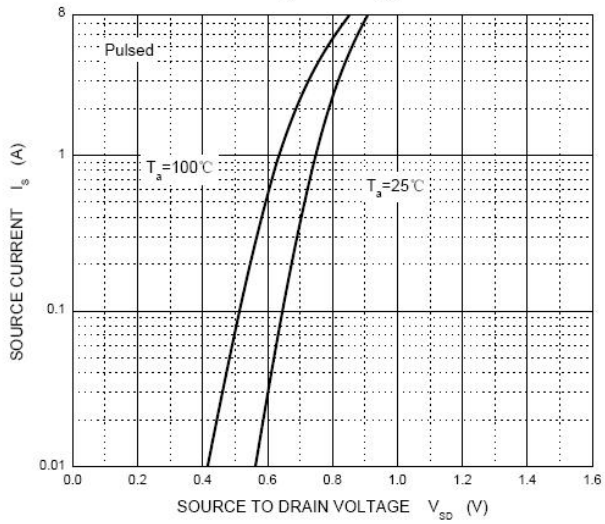
$R_{DS(ON)}$ —— I_D



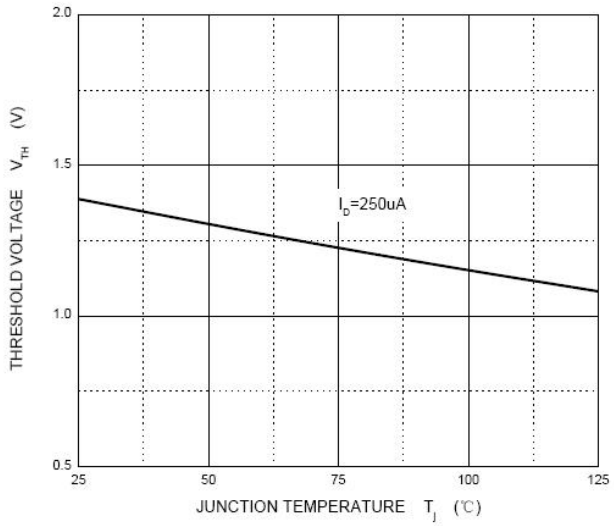
$R_{DS(ON)}$ —— V_{GS}



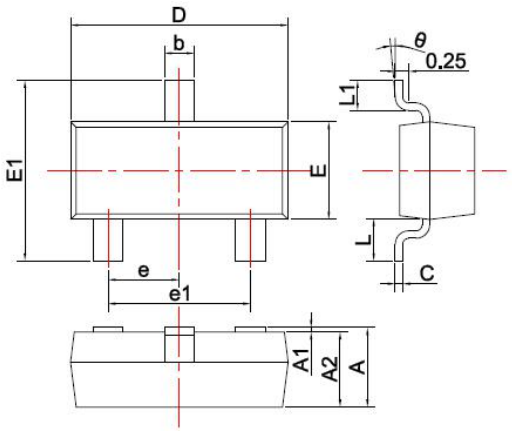
I_S —— V_{SD}



Threshold Voltage



SOT-23 PACKAGE OUTLINE Plastic surface mounted package

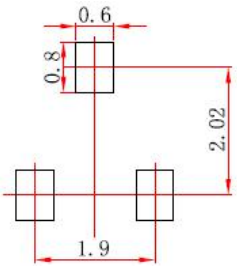


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

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.