

SOT-23

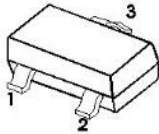
N沟道30V漏-源电压MOS管
N-Channel 30V(D-S) Mosfet

产品特性总结Product Summary

VDS	30V
RDSON(@VGS= 10V)	<36mΩ
RDSON(@VGS= 4.5V)	<50mΩ

根据客户要求打印 According to customer requirement

脚位定义Pin Definition



1. Gate
2. Source
3. Drain

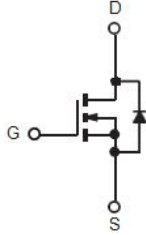
特征 Features

- 低导通电阻Low Rds(on)@VGS= 10V
- 沟道功率MOS管TrenchFET Power MOSFET
- 无卤、RoHS认证Halogen-free、RoHS Compliant
- 表贴型封装Surface Mount Package

应用 Applications

- 便携式设备的直流/直流转换DC/DC Converter for Portable Devices
- 开关电路Switching Circuits
- 电源管理Power Management
- 高速线路驱动High-speed Line Driver

等效电路Equivalent circuit



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
漏源电压Drain-Source Voltage	V _{DS}	30	V
栅源电压Gate-Source Voltage	V _{GS}	±20	V
漏极连续电流Continuous Drain Current	I _D	5.1	A
漏极脉冲电流Pulsed Drain Current (note 1)	I _{DM}	20.4	A
最大功耗Maximum Power Dissipation	P _D	1.5	W
结环热阻Thermal Resistance from Junction to Ambient (note 2)	R _{θJA}	80	℃/W
结温和存储温度Junction and Storage Temperature	T _J , T _{STG}	-50~+150	℃

电特性 (TA = 25℃ 除非另有规定)

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

参数 Parameters	符号 Symbol	测试条件 Test Condition	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
静态特性Static Characteristics						
漏源击穿电压 Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30	--	--	V
零栅压漏极电流 Zero gate voltage drain current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V	--	--	1	μA
栅源漏电流Gate-body leakage current	I _{GSS}	V _{GS} = ± 20V, V _{DS} = 0V	--	--	±100	nA
栅源阈值电压 Gate threshold voltage (note 3)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.6	2.5	V
漏源极导通电阻 Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} = 10V, I _D = 4A	--	28	36	mΩ
		V _{GS} = 4.5V, I _D = 3A	--	38	50	mΩ
二极管正向电压 Diode forward voltage (note 3)	V _{SD}	I _S = 4A, V _{GS} = 0V	--	0.85	1.2	V

动态特性Dynamic Characteristics (note4)						
输入电容Input Capacitance	C _{iss}	V _{DS} = 15V,V _{GS} =0V, f=1MHz	--	240	--	pF
输出电容Output Capacitance	C _{oss}		--	35	--	pF
反向传输电容 Reverse Transfer Capacitance	C _{rss}		--	30	--	pF
开关特性Switching Characteristics (note 4)						
开启延迟时间Turn-on delay time	td(on)	V _{DD} = 15V,I _D = 1A,R _G = 3.3Ω, V _{GS} = 10V	--	4.4	--	ns
开启上升沿时间Turn-on rise time	tr		--	2.6	--	ns
关断延迟时间Turn-off delay time	td(off)		--	25.5	--	ns
关断下降沿时间Turn-off fall time	tf		--	3.3	--	ns
总栅极电荷Total Gate Charge	Q _g	V _{DS} = 15V,I _D =4A, V _{GS} =10V	--	6	--	nC
栅源电荷Gate-Source Charge	Q _{gs}		--	0.5	--	nC
栅漏电荷Gate-Drain Charge	Q _{gd}		--	1.3	--	nC

***Notes :**

1. Repetitive rating: Pluse width limited by maximum junction temperature
2. Surface Mounted on FR4 board, t_≤10 sec.
3. Pulse test : Pulse width≤300μs, duty cycle≤2%.
4. Guaranteed by design, not subject to production.

典型特性曲线 Typical characteristics

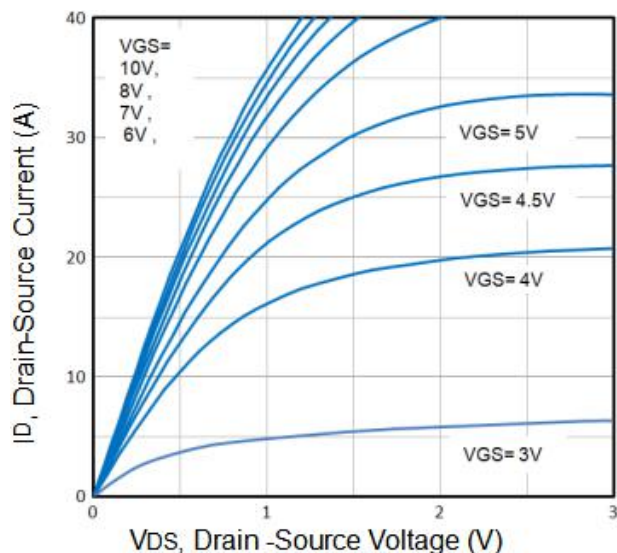


Fig1. Typical Output Characteristics

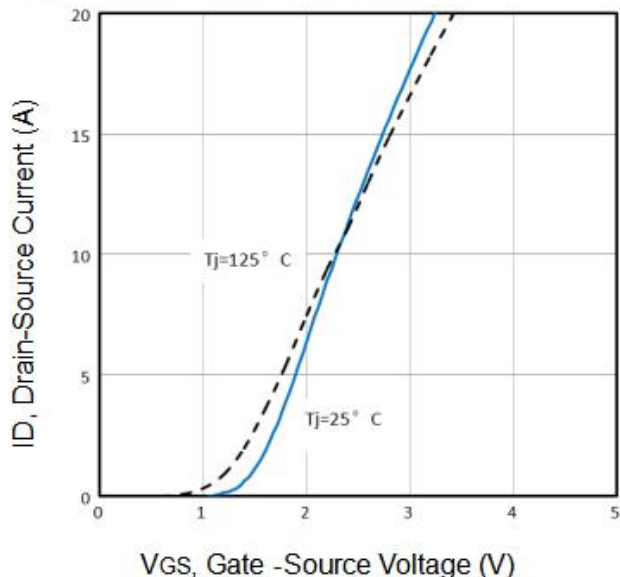


Fig3. Typical Transfer Characteristics

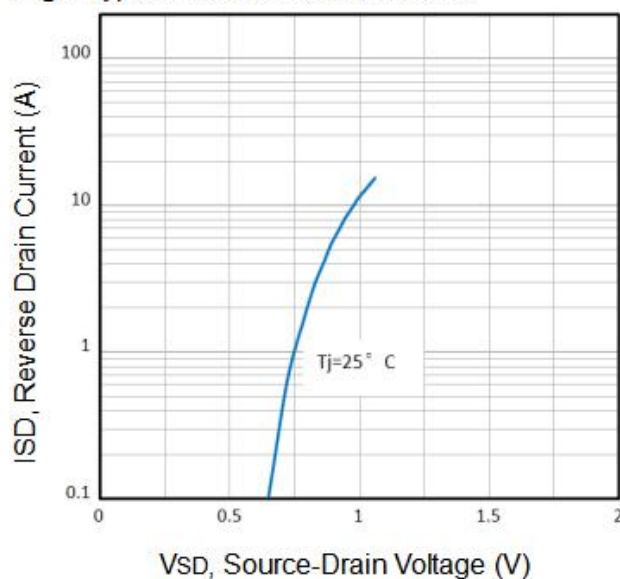


Fig5. Typical Source-Drain Diode Forward Voltage

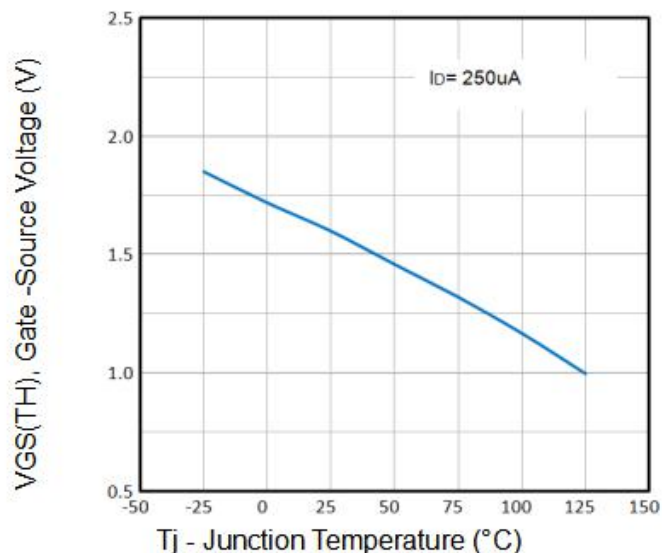


Fig2. Normalized Threshold Voltage Vs. Temperature

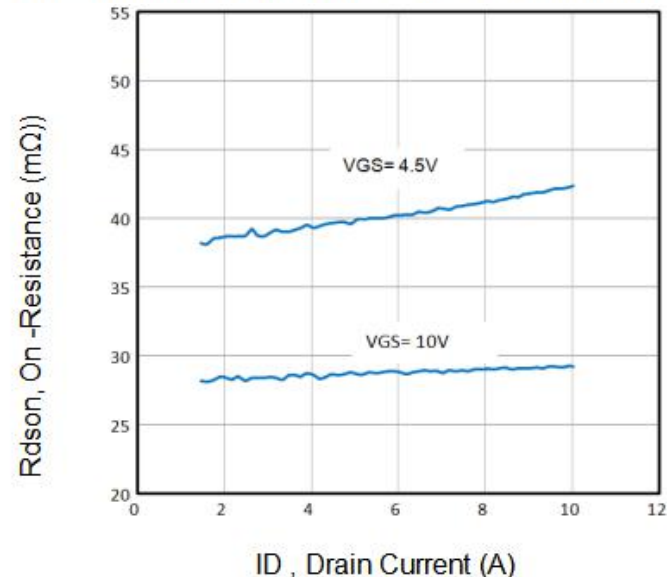


Fig4. On-Resistance vs. Drain Current and Gate

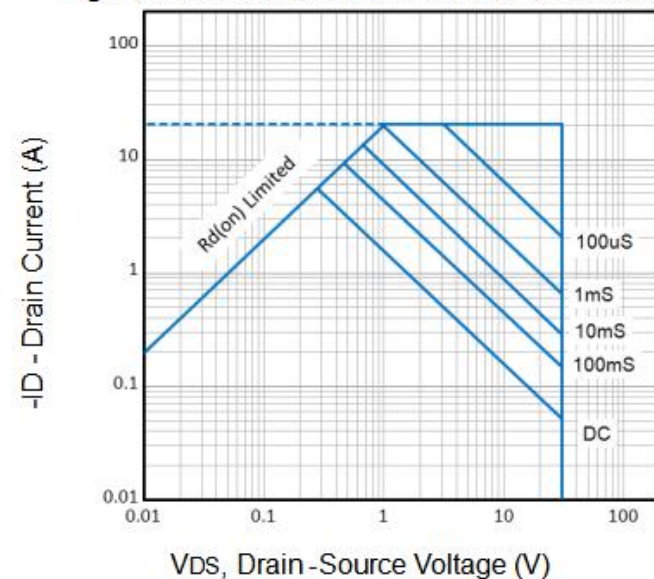


Fig6. Maximum Safe Operating Area

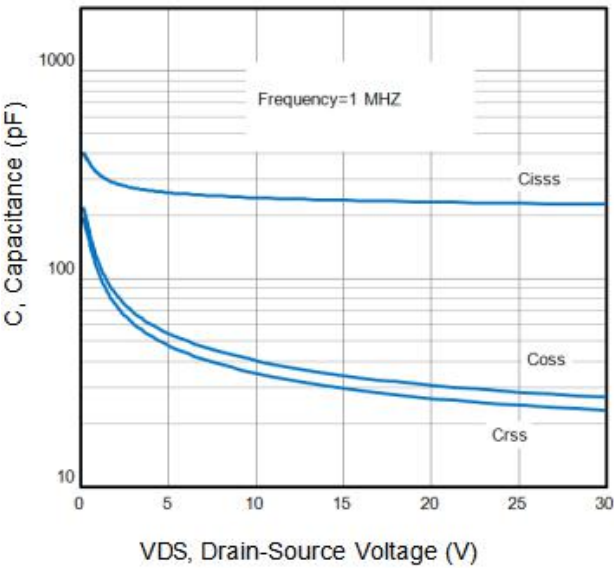


Fig7. Typical Capacitance Vs. Drain-Source Voltage

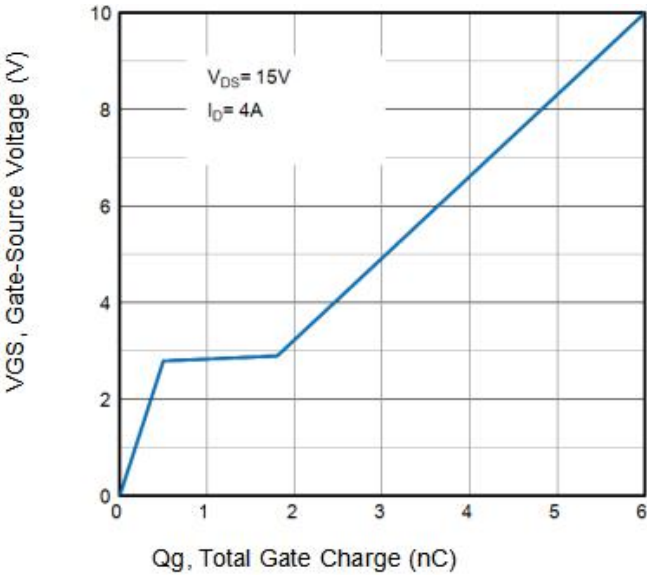
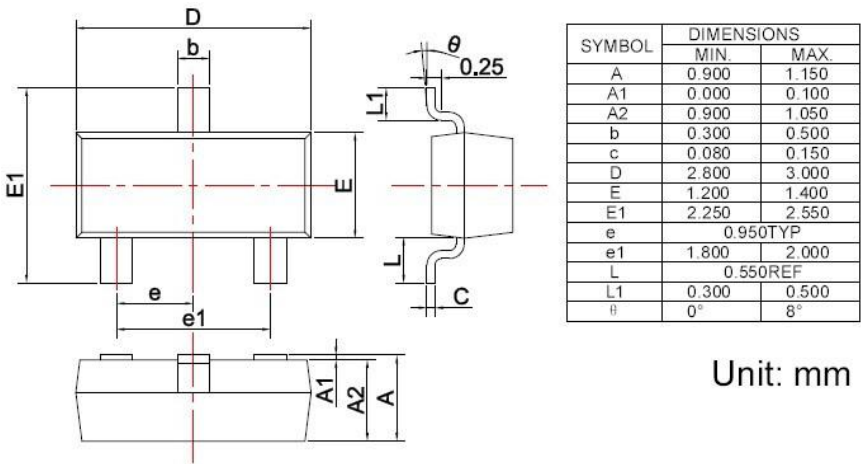
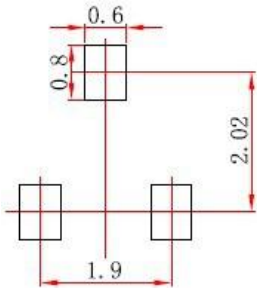


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

封装外形图 SOT-23 Package Outline Dimensions



焊盘设计参考Precautions: PCB Design



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