

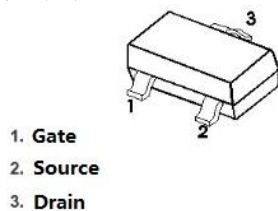
SOT-23

P沟道20V漏-源电压MOS管
P-Channel 20V(D-S) Mosfet

产品特性总结Product Summary	
VDS	-20V
RDSON(@VGS= -4.5V)	<90mΩ
RDSON(@VGS= -3.3V)	<100mΩ

根据客户要求打印 According to customer requirement

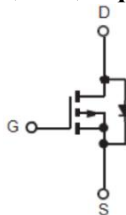
脚位定义Pin Definition

特征 Features

- 低导通电阻Low Rds(on)@VGS= -4.5V
- 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

- 用于便携式设备的直流/直流转换DC/DC Converter for Portable Devices
- 用于便携式设备的负载开关Load Switch for Portable Devices
- 小型无刷电机驱动Small brushless DC motor drive
- 电源管理功能Power Management Functions

等效电路Equivalent circuit

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
漏源电压Drain-Source Voltage	V _{DS}	-20	V
栅源电压Gate-Source Voltage	V _{GS}	±10	V
漏极连续电流Continuous Drain Current	I _D	-4.2	A
漏极脉冲电流Pulsed Drain Current (note 1)	I _{DM}	-16.8	A
最大功耗Maximum Power Dissipation	P _D	1.25	W
结环热阻Thermal Resistance from Junction to Ambient (note 2)	R _{θJA}	100	°C/W
结温和存储温度Junction and Storage Temperature	T _J , T _{STG}	-50~+150	°C

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 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	-20	--	--	V
零栅压漏极电流 Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V	--	--	-1	μA
栅源漏电流Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, 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	-0.4	-0.6	-1.0	V
漏源极导通电阻 Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} = -4.5V, I _D = -4A	--	37	48	mΩ
		V _{GS} = -3.3V, I _D = -3A	--	40	55	mΩ
		V _{GS} = -2.5V, I _D = -2A	--	45	60	mΩ
二极管正向电压 Diode forward voltage (note 3)	V _{SD}	I _S = -2A, V _{GS} = 0V	--	-0.87	-1.2	V

动态特性Dynamic Characteristics (note4)						
输入电容Input Capacitance	Ciss	VDS= -10V,VGS=0V, f=1MHz	--	760	--	pF
输出电容Output Capacitance	Coss		--	94	--	pF
反向传输电容 Reverse Transfer Capacitance	Crss		--	76	--	pF
开关特性Switching Characteristics (note 4)						
开启延迟时间Turn-on delay time	td(on)	VDD= -10V,Id= -2A,RG= 3.3Ω, VGS= -4.5V	--	5.5	--	ns
开启上升沿时间Turn-on rise time	tr		--	3.9	--	ns
关断延迟时间Turn-off delay time	td(off)		--	11.3	--	ns
关断下降沿时间Turn-off fall time	tf		--	36	--	ns
总栅极电荷Total Gate Charge	Qg	VDS= -10V,Id=-3A, VGS=-4.5V	--	7.6	--	nC
栅源电荷Gate-Source Charge	Qgs		--	0.9	--	nC
栅漏电荷Gate-Drain Charge	Qgd		--	1.8	--	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

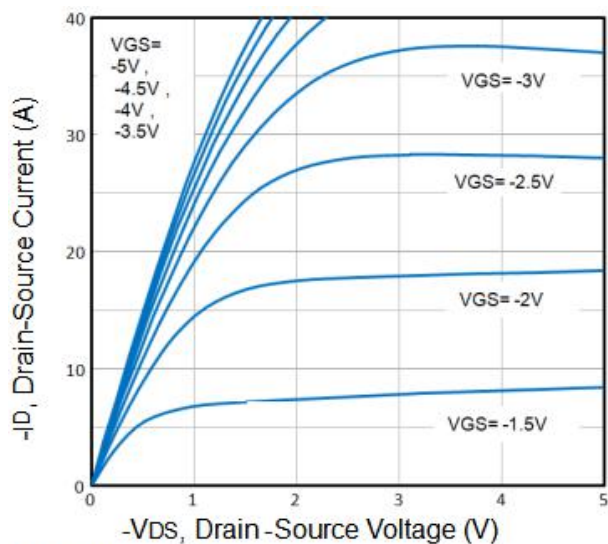


Fig1. Typical Output Characteristics

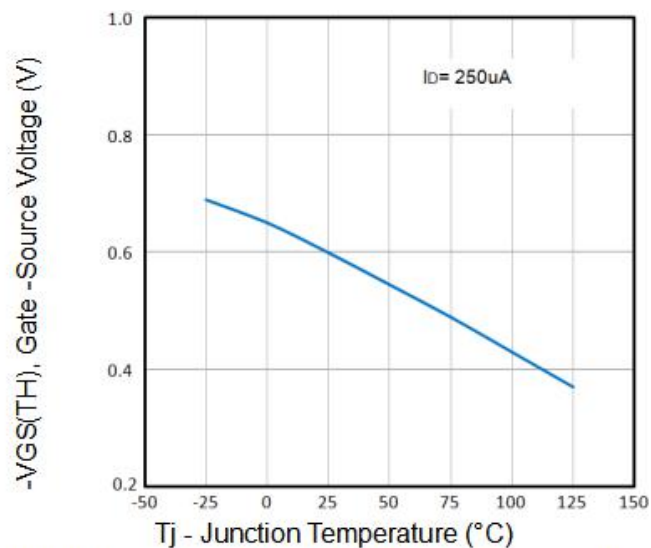


Fig2. Normalized Threshold Voltage Vs. Temperature

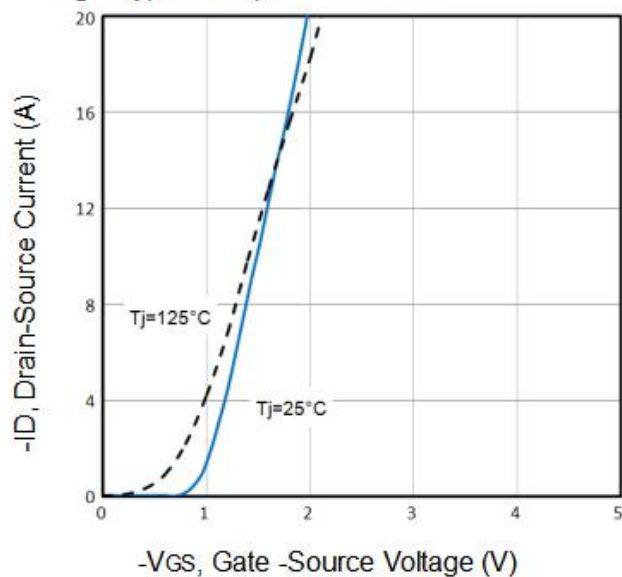


Fig3. Typical Transfer Characteristics

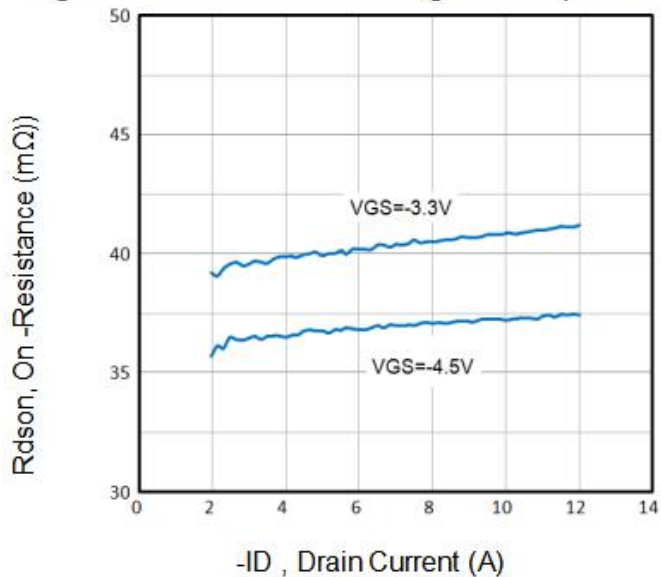


Fig4. On-Resistance vs. Drain Current and Gate Voltage

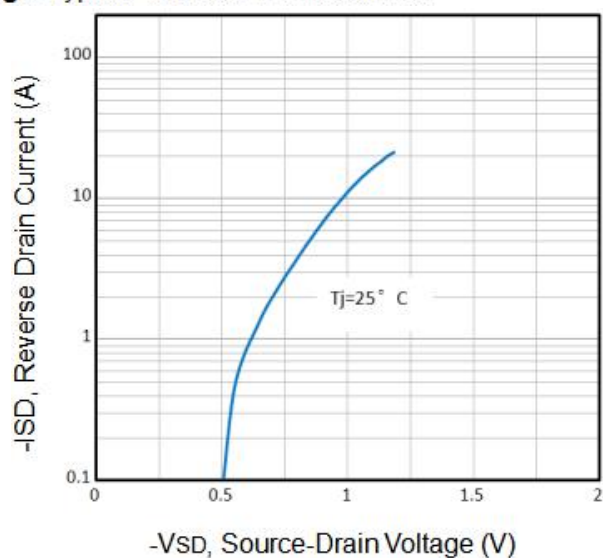


Fig5. Typical Source-Drain Diode Forward Voltage

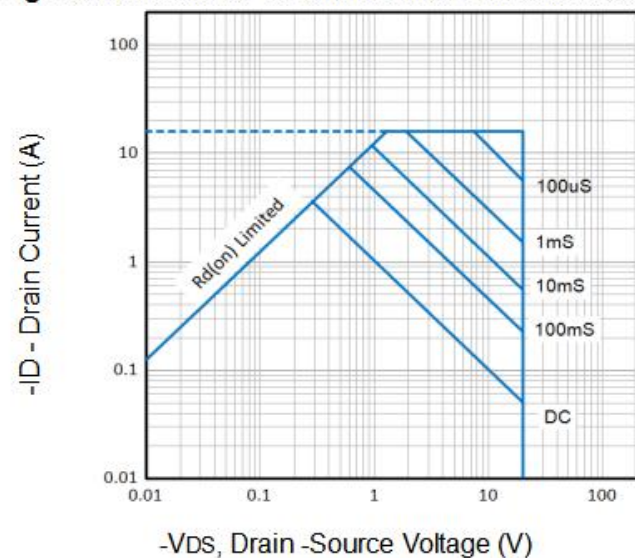


Fig6. Maximum Safe Operating Area

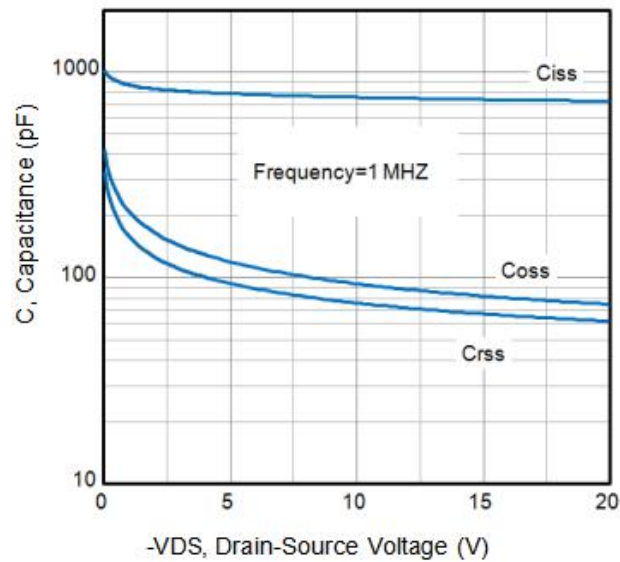


Fig7. Typical Capacitance Vs. Drain-Source Voltage

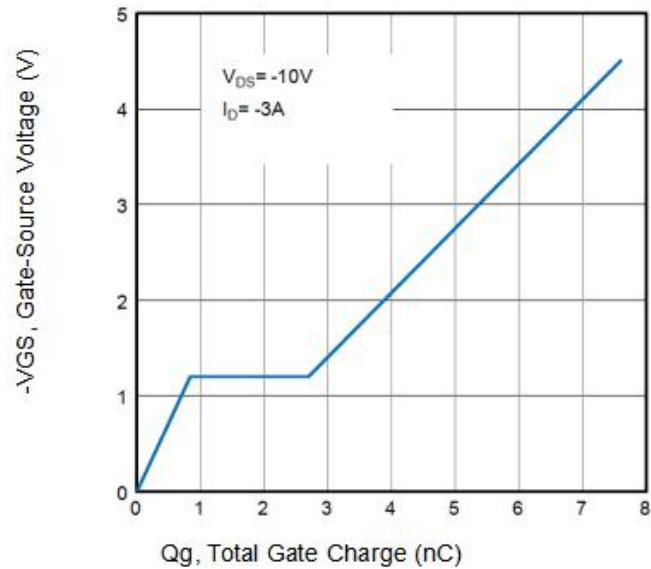
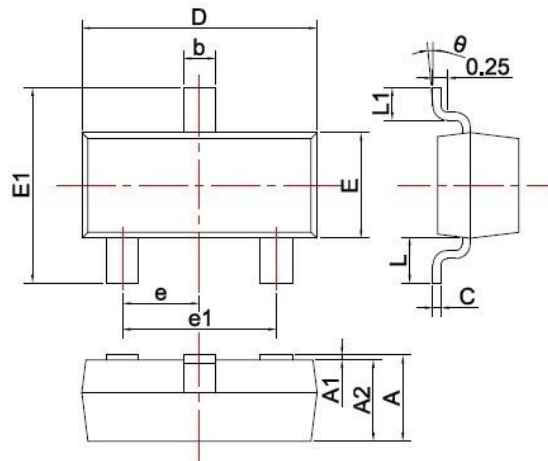


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

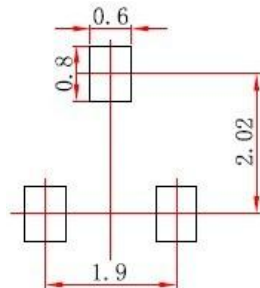
封装外形图 SOT-23 Package Outline Dimensions



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



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