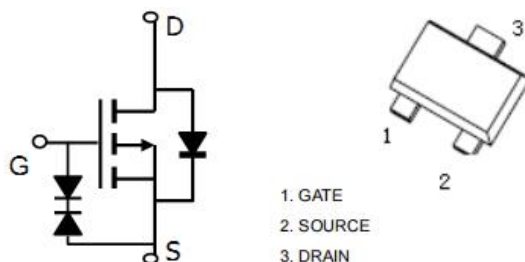


**SOT-723 -20V P Channel Enhancement ESD Protection 沟道增强型带静电保护
MOS Field Effect Transistor 场效应管**



■ **Absolute Maximum Ratings 最大额定值**

Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Drain-Source Voltage 漏极-源极电压	BV_{DSS}	-20	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	± 12	V
Drain Current (continuous)漏极电流-连续	I_D (at $T_A = 25^\circ C$)	-0.66	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	-1.2	A
Total Device Dissipation 总耗散功率	P_D (at $T_A = 25^\circ C$)	150	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	887	$^\circ C/W$
ESD Protected Up to 人体模式静电保护范围	ESD(HBM)	2.0	kV
Junction/Storage Temperature 结温/储存温度	T_J, T_{stg}	-55~150	$^\circ C$

■ **Device Marking 产品字标**

FS3139KT=1*

■ Electrical Characteristics 电特性

($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

Characteristic 特性参数	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Drain-Source Breakdown Voltage 漏极-源极击穿电压($I_D = -250\mu\text{A}, V_{GS}=0\text{V}$)	BV_{DSS}	-20	—	—	V
Gate Threshold Voltage 栅极开启电压($I_D = -250\mu\text{A}, V_{GS}= V_{DS}$)	$V_{GS(th)}$	-0.35	-0.45	-1.1	V
Zero Gate Voltage Drain Current 零栅压漏极电流($V_{GS}=0\text{V}, V_{DS}= -20\text{V}$)	I_{DSS}	—	—	-1	μA
Gate Body Leakage 栅极漏电流($V_{GS}=\pm 10\text{V}, V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 20	μA
Static Drain-Source On-State Resistance 静态漏源导通电阻($I_D = -1\text{A}, V_{GS}= -4.5\text{V}$) ($I_D = -0.8\text{A}, V_{GS}= -2.5\text{V}$) ($I_D = -0.5\text{A}, V_{GS}= -1.8\text{V}$)	$R_{DS(ON)}$	—	530 750 1000	650 900	$\text{m}\Omega$
Diode Forward Voltage Drop 内附二极管压降($I_{SD} = -0.5\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	—	-1.2	V
Input Capacitance 输入电容 ($V_{GS}=0\text{V}, V_{DS}= -16\text{V}, f=1\text{MHz}$)	C_{ISS}	—	113	—	pF
Common Source Output Capacitance 共源输出电容($V_{GS}=0\text{V}, V_{DS}= -16\text{V}, f=1\text{MHz}$)	C_{OSS}	—	15	—	pF
Reverse Transfer Capacitance 反馈电容($V_{GS}=0\text{V}, V_{DS}= -16\text{V}, f=1\text{MHz}$)	C_{RSS}	—	9	—	pF
Total Gate Charge 栅极电荷密度 ($V_{DS}= -10\text{V}, I_D = -150\text{mA}, V_{GS}=10\text{V}$)	Q_g	—	1.7	—	nC
Gate Source Charge 栅源电荷密度 ($V_{DS}= -10\text{V}, I_D = -150\text{mA}, V_{GS}=10\text{V}$)	Q_{gs}	—	0.57	—	nC
Gate Drain Charge 栅漏电荷密度 ($V_{DS}= -10\text{V}, I_D = -150\text{mA}, V_{GS}=10\text{V}$)	Q_{gd}	—	0.25	—	nC
Turn-ON Delay Time 开启延迟时间 ($V_{DS}= -10\text{V}, I_D = -200\text{mA}, R_{GEN}=10\Omega, V_{GS}= -4.5\text{V}$)	$t_{d(on)}$	—	9	—	ns
Turn-ON Rise Time 开启上升时间 ($V_{DS}= -10\text{V}, I_D = -200\text{mA}, R_{GEN}=10\Omega, V_{GS}= -4.5\text{V}$)	t_r	—	5.8	—	ns
Turn-OFF Delay Time 关断延迟时间 ($V_{DS}= -10\text{V}, I_D = -200\text{mA}, R_{GEN}=10\Omega, V_{GS}= -4.5\text{V}$)	$t_{d(off)}$	—	32.7	—	ns
Turn-OFF Fall Time 关断下降时间 ($V_{DS}= -10\text{V}, I_D = -200\text{mA}, R_{GEN}=10\Omega, V_{GS}= -4.5\text{V}$)	t_f	—	20.3	—	ns

■ Typical Characteristic Curve 典型特性曲线

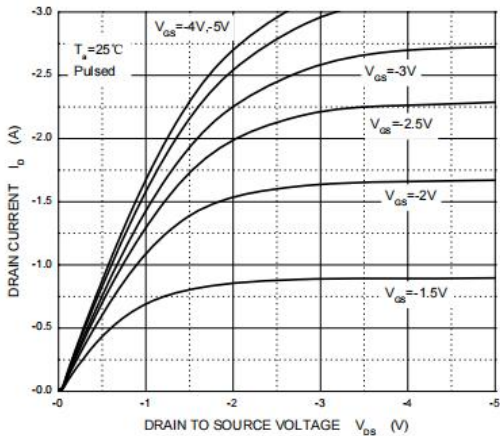


Figure 1: Output Characteristics

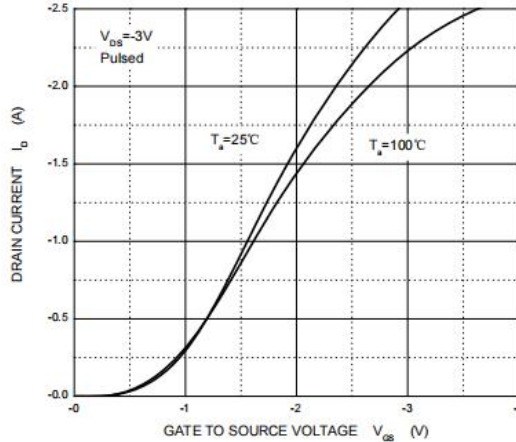


Figure 2: Transfer Characteristics

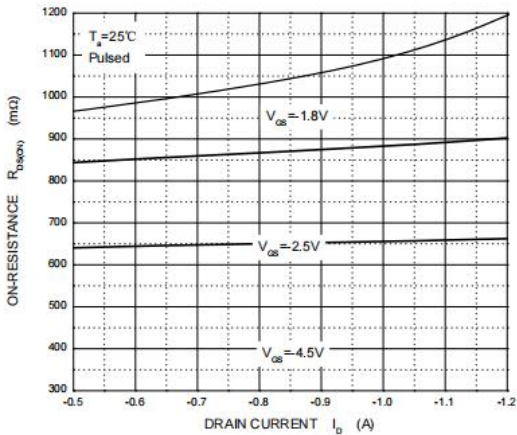


Figure 3: On-Resistance vs. Drain Current

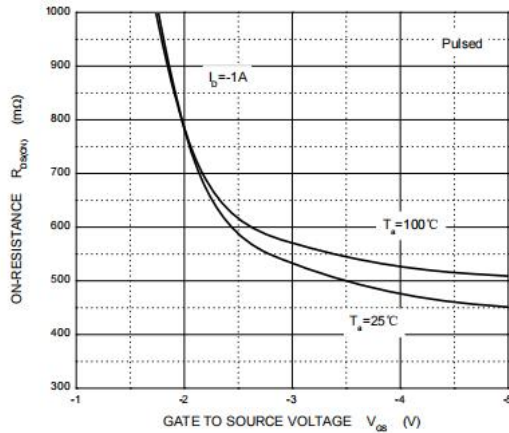


Figure 4: On-Resistance vs. V_{GS}

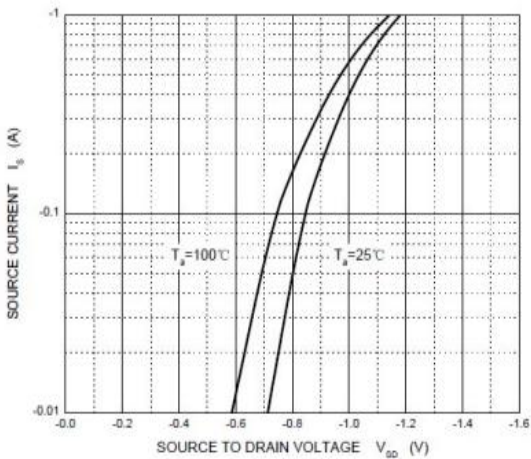


Figure 5: Diode Characteristics

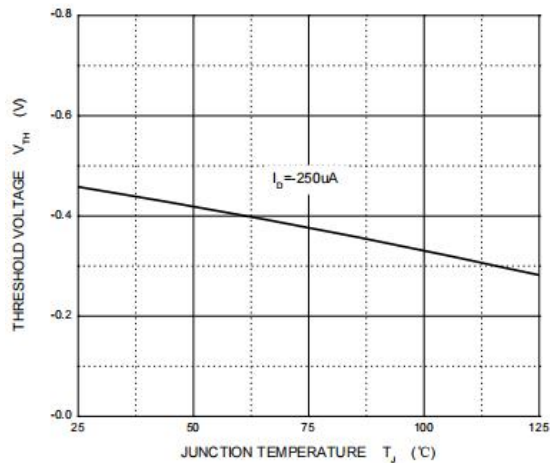
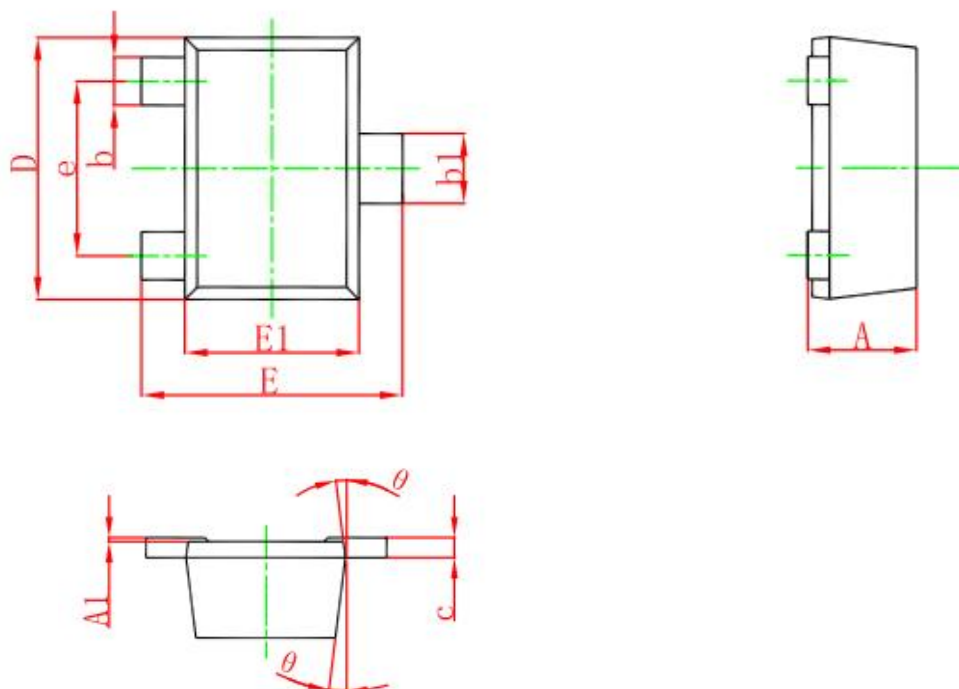


Figure 6: Threshold Characteristics

■ Dimension 外形封装尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	