

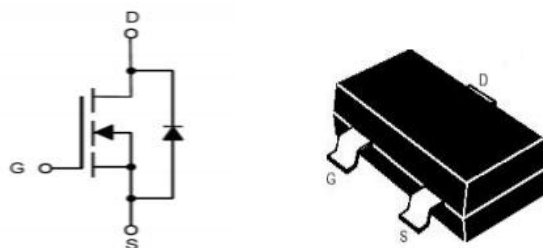


安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO. , LTD.

BSS138W

SOT-323 50V N Channel Enhancement 沟道增强型 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}	50	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	± 20	V
Drain Current (continuous)漏极电流-连续	I_D (at $T_A = 25^\circ\text{C}$)	200	mA
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	1	A
Total Device Dissipation 总耗散功率	P_D (at $T_A = 25^\circ\text{C}$)	300	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction/Storage Temperature 结温/储存温度	T_J, T_{stg}	-55~150	$^\circ\text{C}$



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■ 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}	50	—	—	V
Gate Threshold Voltage 栅极开启电压($I_D=250\mu\text{A}$, $V_{GS}=V_{DS}$)	$V_{GS(th)}$	0.5	1.0	1.5	V
Zero Gate Voltage Drain Current 零栅压漏极电流($V_{GS}=0\text{V}$, $V_{DS}=50\text{V}$)	I_{DSS}	—	—	0.5	μA
Gate Body Leakage 栅极漏电流($V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 100	nA
Static Drain-Source On-State Resistance 静态漏源导通电阻($I_D=200\text{mA}$, $V_{GS}=10\text{V}$)	$R_{DS(ON)}$	—	—	3.5	Ω
Input Capacitance 输入电容 ($V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$)	C_{ISS}	—	30	—	pF
Common Source Output Capacitance 共源输出电容($V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$)	C_{OSS}	—	8	—	pF
Reverse Transfer Capacitance 反馈电容($V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$)	C_{RSS}	—	3	—	pF
Total Gate Charge 栅极电荷密度 ($V_{DS}=25\text{V}$, $I_D=200\text{mA}$, $V_{GS}=10\text{V}$)	Q_g	—	1.7	—	nC
Gate Source Charge 栅源电荷密度 ($V_{DS}=25\text{V}$, $I_D=200\text{mA}$, $V_{GS}=10\text{V}$)	Q_{gs}	—	0.47	—	nC
Gate Drain Charge 栅漏电荷密度 ($V_{DS}=25\text{V}$, $I_D=200\text{mA}$, $V_{GS}=10\text{V}$)	Q_{gd}	—	0.25	—	nC
Turn-ON Delay Time 开启延迟时间 ($V_{DS}=25\text{V}$ $I_D=200\text{mA}$, $R_{GEN}=6\Omega$, $V_{GS}=10\text{V}$)	$t_{d(on)}$	—	2.6	—	ns
Turn-ON Rise Time 开启上升时间 ($V_{DS}=25\text{V}$ $I_D=200\text{mA}$, $R_{GEN}=6\Omega$, $V_{GS}=10\text{V}$)	t_r	—	19	—	ns
Turn-OFF Delay Time 关断延迟时间 ($V_{DS}=25\text{V}$ $I_D=200\text{mA}$, $R_{GEN}=6\Omega$, $V_{GS}=10\text{V}$)	$t_{d(off)}$	—	9.6	—	ns
Turn-OFF Fall Time 关断下降时间 ($V_{DS}=25\text{V}$ $I_D=200\text{mA}$, $R_{GEN}=6\Omega$, $V_{GS}=10\text{V}$)	t_f	—	49	—	ns

■ Typical Characteristic Curve 典型特性曲线

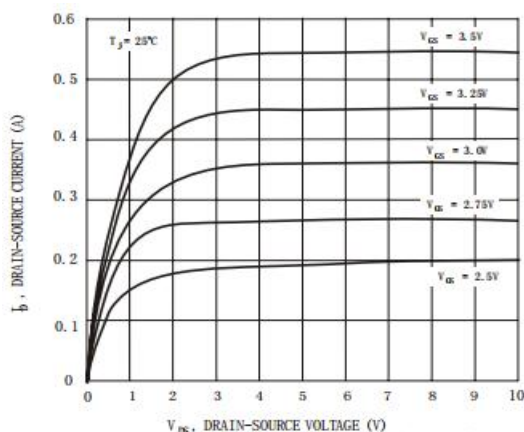


Figure 1: Output Characteristics

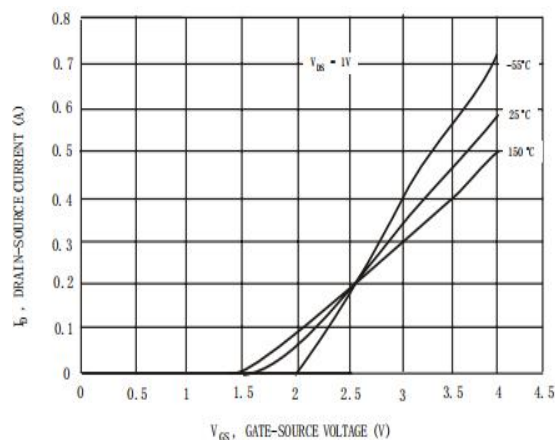


Figure 2: Transfer Characteristics

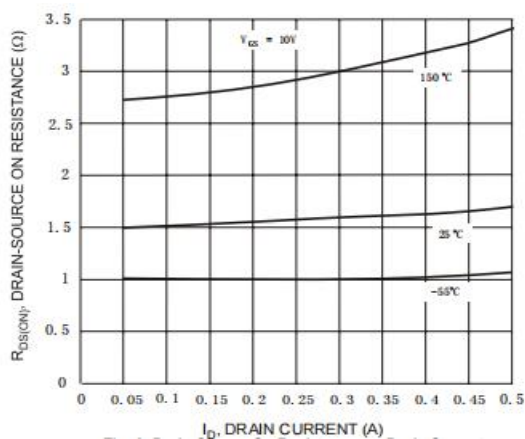


Figure 3: On-Resistance vs. Drain Current

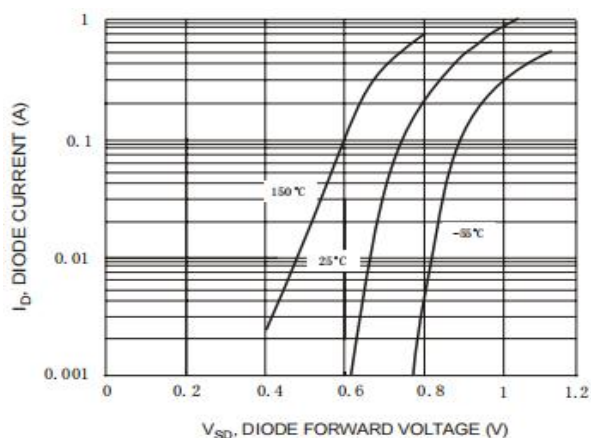


Figure 4: Diode Characteristics

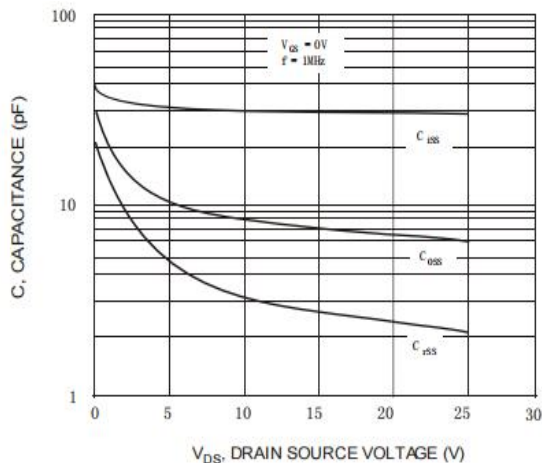


Figure 5: Capacitance Characteristics

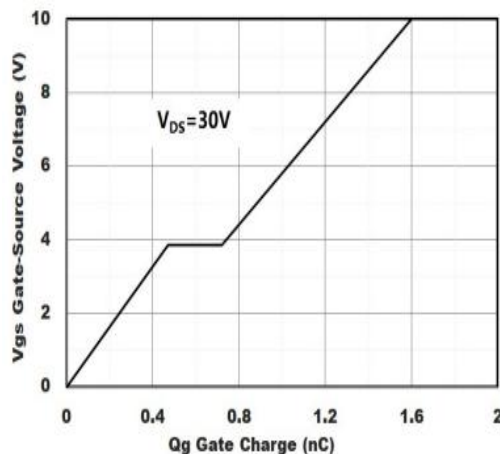
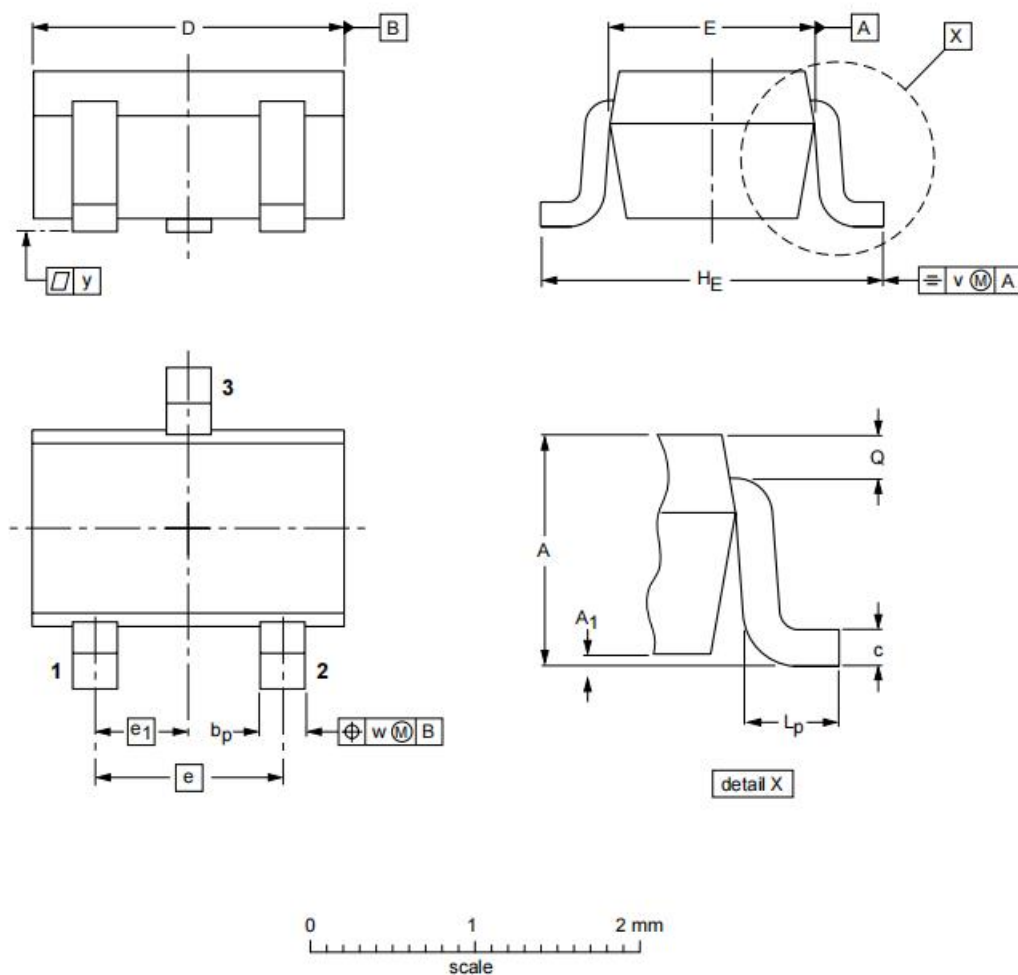


Figure 6: Gate-Charge Characteristics

■ Dimension 外形封装尺寸



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2