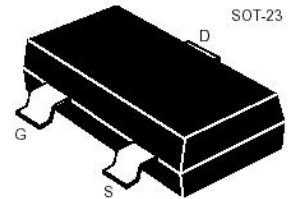




BSS138

SOT-23 場效應晶體管(SOT-23 Field Effect Transistors)



### N-Channel Enhancement-Mode MOS FETs

N 溝道增強型 MOS 場效應管

#### ■ MAXIMUM RATINGS 最大額定值

Characteristic 特性參數	Symbol 符號	Rat 額定值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	$BV_{DSS}$	50	V
Gate- Source Voltage 柵極-源極電壓	$V_{GS}$	$\pm 20$	V
Drain Current (continuous) 漏極電流-連續	$I_{DR}$	220	mA
Drain Current (pulsed) 漏極電流-脈沖	$I_{DRM}$	880	mA

#### ■ THERMAL CHARACTERISTICS 熱特性

Characteristic 特性	Symbol 符號	Max 最大值	Unit 單位
Total Device Dissipation 總耗散功率 $T_A=25^{\circ}\text{C}$ 環境溫度為 $25^{\circ}\text{C}$ Derate above $25^{\circ}\text{C}$ 超過 $25^{\circ}\text{C}$ 遞減	$P_D$	225 1.8	mW mW/ $^{\circ}\text{C}$
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	350	$^{\circ}\text{C}/\text{W}$
Junction and Storage Temperature 結溫和儲存溫度	$T_J, T_{stg}$	$150^{\circ}\text{C}, -55\text{to}+150^{\circ}\text{C}$	



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■DEVICE MARKING 打標

BSS138=SS

■ELECTRICAL CHARACTERISTICS 電特性

( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如無特殊說明，溫度為  $25^{\circ}\text{C}$ )

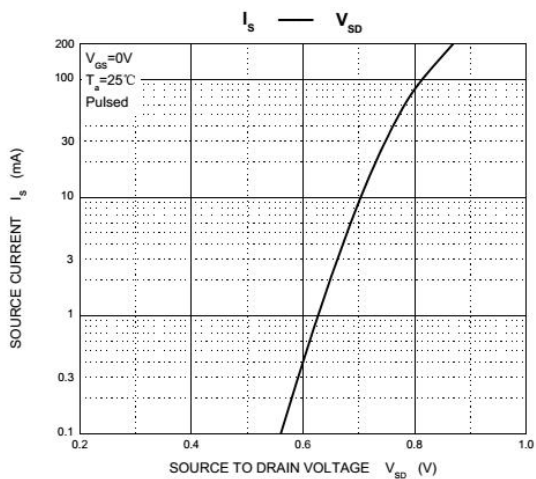
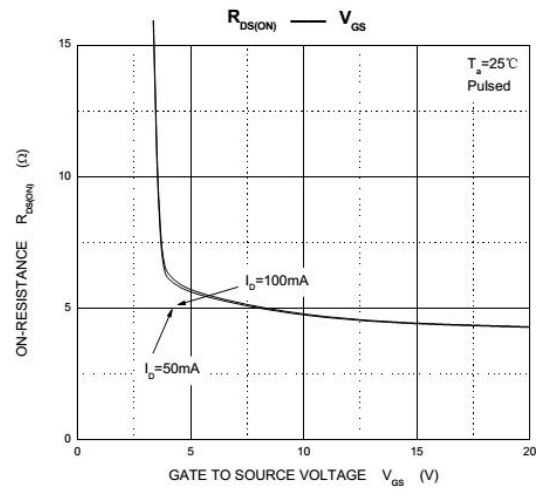
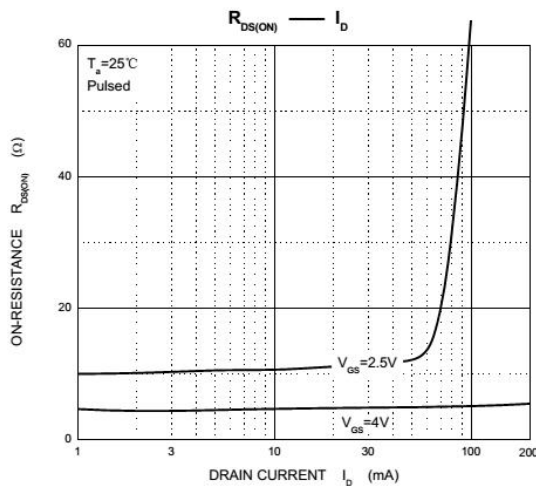
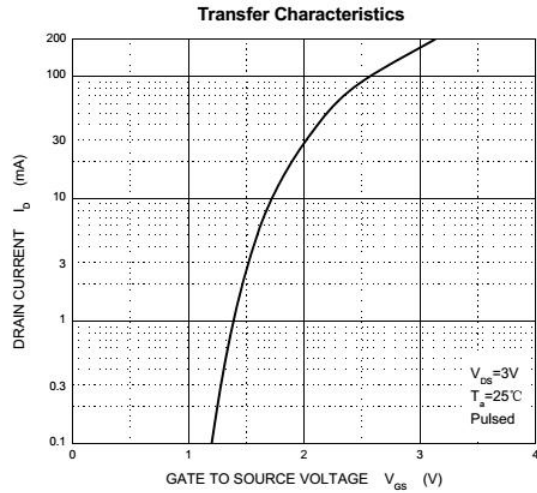
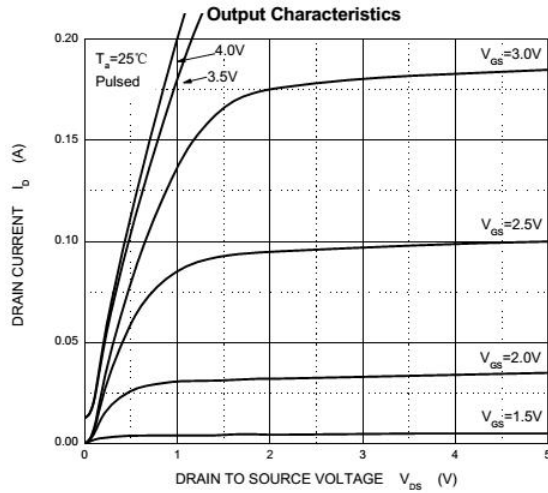
Characteristic 特性參數	Symbol 符號	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
Drain-Source Breakdown Voltage 漏極-源極擊穿電壓( $I_D=250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	50	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D=1\text{mA}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	0.8	—	1.6	V
Diode Forward Voltage Drop 內附二極管正向壓降( $I_{SD}=220\text{mA}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1.4	V
Zero Gate Voltage Drain Current 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS}=BV_{DSS}$ ) ( $V_{GS}=0\text{V}, V_{DS}=0.6BV_{DSS}$ )	$I_{DSS}$	—	—	0.5 100	$\mu\text{A}$ $\text{nA}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 100$	$\text{nA}$
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D=220\text{mA}, V_{GS}=10\text{V}$ ) ( $I_D=220\text{mA}, V_{GS}=4.5\text{V}$ )	$R_{DS(ON)}$	—	—	3.5 6	$\Omega$
Input Capacitance 輸入電容 ( $V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	—	50	$\text{pF}$
Common Source Output Capacitance 共源輸出電容( $V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	—	25	$\text{pF}$
Turn-ON Time 開啓時間 ( $V_{DS}=30\text{V}, I_D=200\text{mA}, R_{GEN}=25\Omega$ )	$t_{(on)}$	—	—	20	ns
Turn-OFF Time 關斷時間 ( $V_{DS}=30\text{V}, I_D=200\text{mA}, R_{GEN}=25\Omega$ )	$t_{(off)}$	—	—	20	ns

1. FR-5=1.0×0.75×0.062in.
2. Alumina=0.4×0.3×0.024in.99.5%alumina.
3. Pulse Width≤300  $\mu\text{s}$ ; Duty Cycle≤2.0%.



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■ TYPICAL CHARACTERISTIC CURVE 典型特性曲线



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