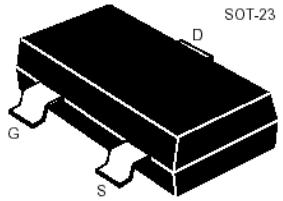
BSS138

N-Channel Enhancement-Mode MOS FETs



MAXIMUM RATINGS

Characteristic	Symbol	Max	Unit
Drain-Source Voltage	BV_{DSS}	50	V
Gate- Source Voltage	V_{GS}	±20	V
Drain Current (continuous)	I_{DR}	220	mA
Drain Current (pulsed)	I_{DRM}	880	mA

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation T_A=25℃ Derate above25℃	P_D	225 1.8	mW mW/℃
Thermal Resistance Junction to Ambient	$R_{\Theta JA}$	350	℃/W
Junction and Storage Temperature	T_J,T_{stg}	150℃, -55to+150℃	

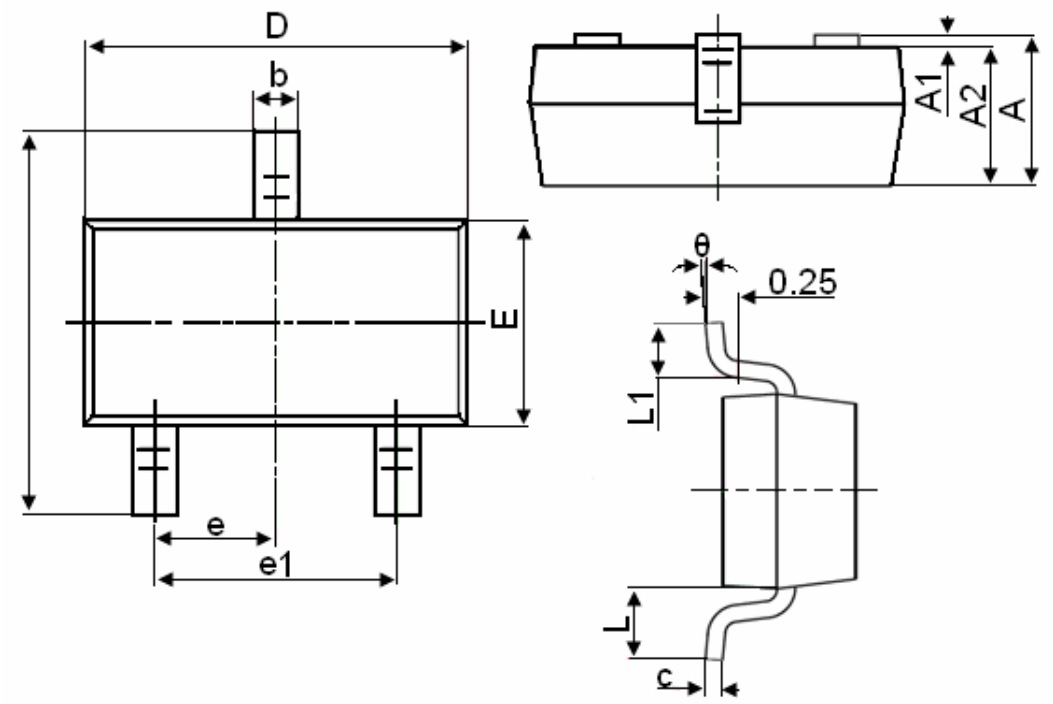
ELECTRICAL CHARACTERISTICS

(T_A=25℃ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage (I_D =250uA,V_{GS}=0V)	BV_{DSS}	50	—	—	V
Gate Threshold Voltage (I_D =1mA,V_{GS}= V_{DS})	$V_{GS(th)}$	0.8	—	1.6	V
Diode Forward Voltage Drop (I_{SD}=220mA,V_{GS}=0V)	V_{SD}	—	—	1.4	V
Zero Gate Voltage Drain Current (V_{GS}=0V, V_{DS}= BV_{DSS}) (V_{GS}=0V, V_{DS}=0.6BV_{DSS})	I_{DSS}	—	—	0.5 100	uA nA
Gate Body Leakage (V_{GS}=±20V, V_{DS}=0V)	I_{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance (I_D=220mA,V_{GS}=10V) (I_D=220mA,V_{GS}=4.5V)	$R_{DS(ON)}$	—	—	3.5 6	Ω
Input Capacitance (V_{GS}=0V, V_{DS}=25V,f=1MHz)	C_{ISS}	—	—	50	pF
Common Source Output Capacitance (V_{GS}=0V, V_{DS}=25V,f=1MHz)	C_{OSS}	—	—	25	pF
Turn-ON Time (V_{DS}=30V, I_D=200mA, R_{GEN}=25Ω)	$t_{(on)}$	—	—	20	ns
Turn-OFF Time (V_{DS}=30V, I_D=200mA, R_{GEN}=25Ω)	$t_{(off)}$	—	—	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 μs; Duty Cycle≤2.0%.

SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	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°