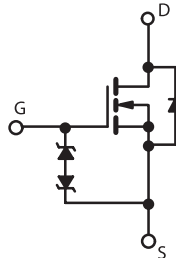


RoHS
Compliant



Features

- V_{DS} (V) =50V
- I_D =300mA (V_{GS} =10V)
- $R_{DS(ON)}$ <2.5 Ω (V_{GS} =10V)
- $R_{DS(ON)}$ <3.5 Ω (V_{GS} =-4.5V)
- Low On-Resistance
- ESD Rating: 1.5KV HBM

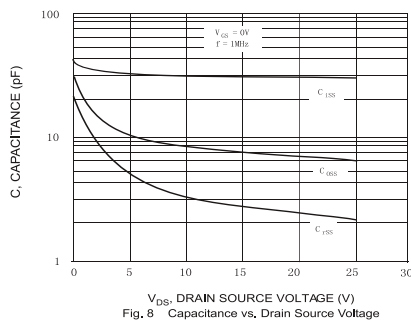
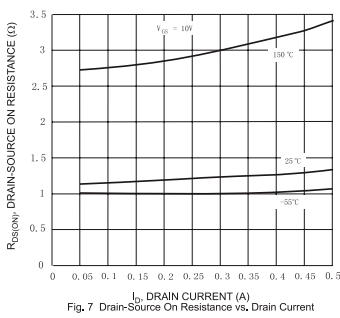
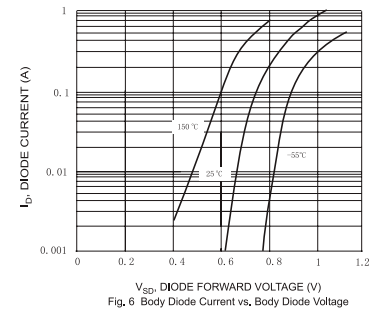
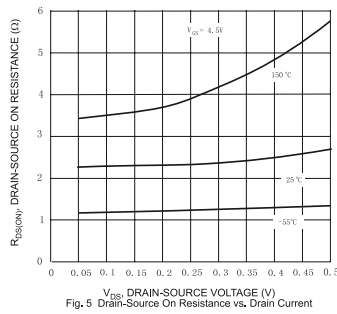
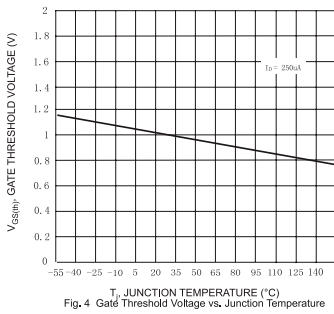
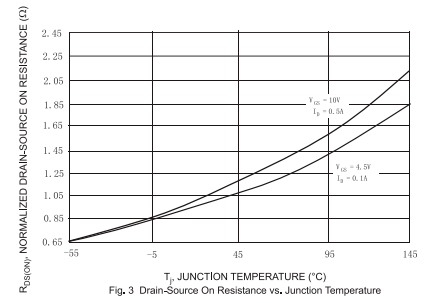
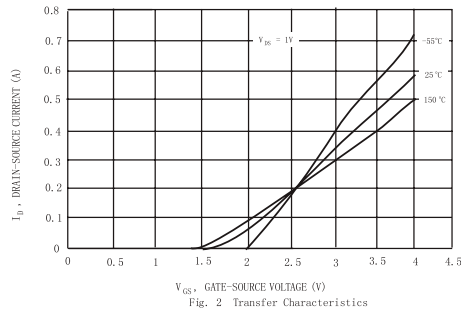
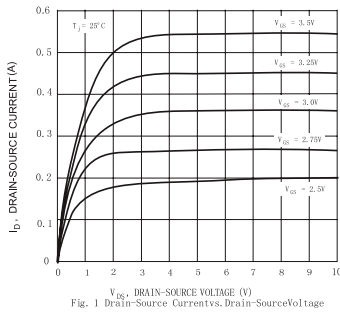
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Drain-Gate Voltage $R_{GS} \leq 20K\Omega$	V_{DG}	50	
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	300	mA
Power Dissipation	P_D	300	mW
Thermal Resistance. Junction- to-Ambient	R_{thJA}	417	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 to 150	

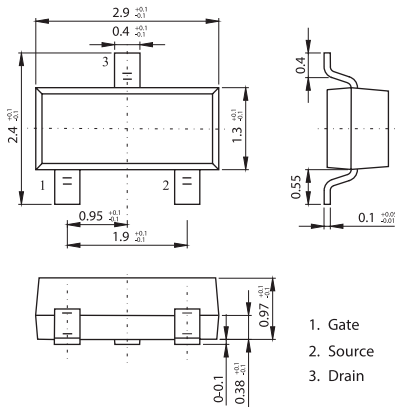
Electrical Characteristics Ta = 25°C

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=250\mu A, V_{GS}=0V$	50			V
Zero Gate Voltage Drain Current	I_{BSS}	$V_{DS}=50V, V_{GS}=0V$			0.5	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 5	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=220mA$			2.5	Ω
		$V_{GS}=4.5V, I_D=220mA$			3.5	
Forward Transconductance	g_{FS}	$V_{DS}=25V, I_D=0.3A, f=1KHz$	100			ms
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=10V, f=1MHz$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				8	
Turn-On DelayTime	$t_{d(on)}$	$V_{DS}=30V, I_D=0.3A, R_G=50\Omega$			20	ns
Turn-Off DelayTime	$t_{d(off)}$				20	

Typical Characteristics



Diagram



Dimensions : Millimetres

Part Number Table

Description	Part Number
MOSFET, N Channel, 0.3A, 50V, SOT23	BSS138

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