



DESCRIPTION

The BSS138L is available in SOT-23 package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	BSS138L
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

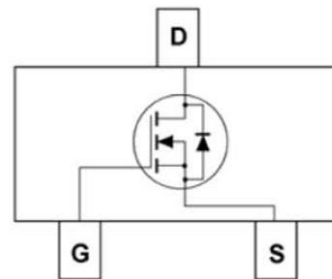
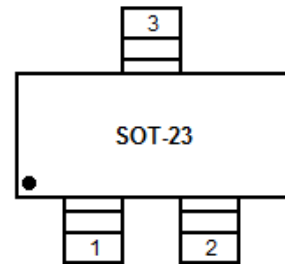
FEATURES

- 50V/0.2A
 $R_{DS(ON)} = 3.5\Omega$ (Max) @ $V_{GS}=5V$ $I_D=0.2A$
 $R_{DS(ON)} = 10\Omega$ (Max) @ $V_{GS}=2.75V$ $I_D=0.2A$
- Super High dense cell design for extremely low $R_{DS(ON)}$
- Reliable and Rugged
- Low Threshold Voltage(0.5V-1.5V) Make it Ideal for Low Voltage Applications.
- Available in SOT-23 package

APPLICATION

- Power Management in DC/DC Converters
Portable and Battery-powered Products.

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

T_A=25°C, unless otherwise noted

V _{DS} , Drain-Source Voltage	50V
V _{GS} , Gate Source Voltage	±20V
I _D , Drain Current-Continuous	0.2A

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

T_A=25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain to Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	50	-	-	V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =50V, V _{GS} =0V	-	-	0.5	μA
		V _{DS} =25V, V _{GS} =0V	-	-	0.1	
Gate Body Leakage Current, Forward	I _{GSSF}	V _{GS} =20V, V _{DS} =0V	-	-	100	nA
Gate Body Leakage Current, Reverse	I _{GSSR}	V _{GS} =-20V, V _{DS} =0V	-	-	-100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =1.0mA	0.5	-	1.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =5.0V, I _D =0.2A	-	-	3.5	Ω
		V _{GS} =2.75V, I _D =0.2A	-	-	10	
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =0.2A	-	-	2.5	V



TYPICAL CHARACTERISTICS

Figure 1. Output Characteristics

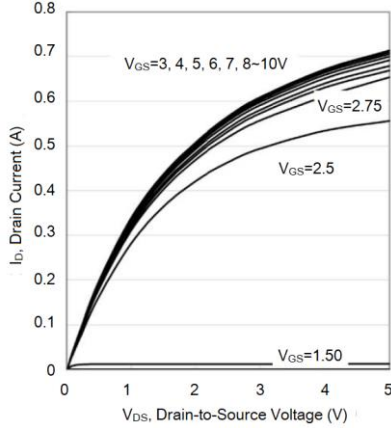


Figure 2. Transfer Characteristics

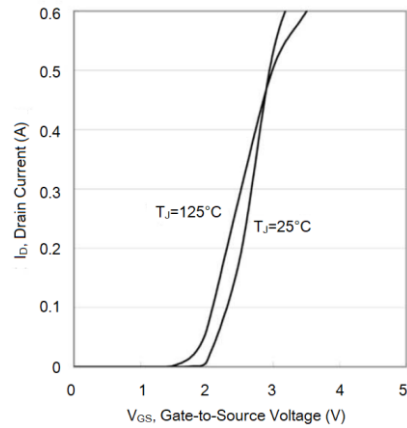


Figure 3. Breakdown Voltage Variation with Temperature

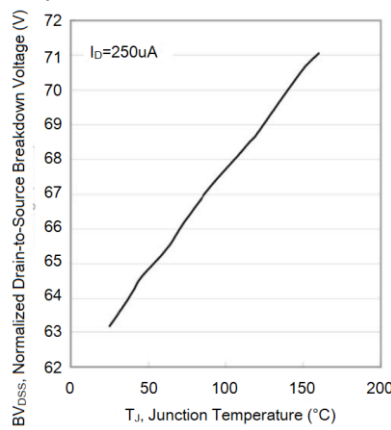


Figure 4. Gate Threshold Variation with Temperature

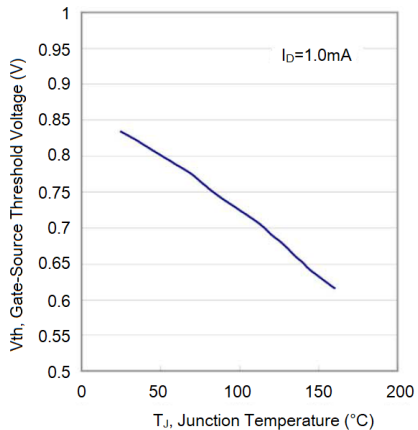


Figure 5. On-Resistance Variation with Temperature

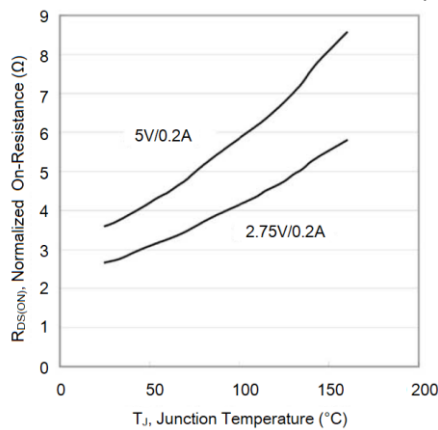


Figure 6. On-Resistance vs. Drain Current

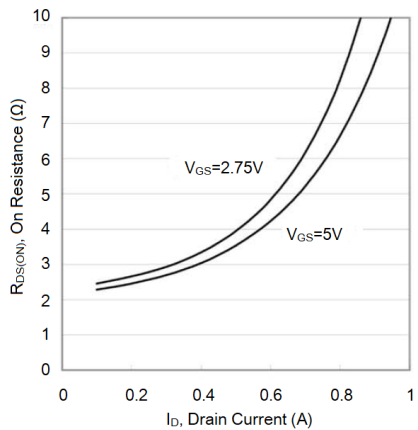




Figure 7. On-Resistance vs. Gate-to-Source Voltage

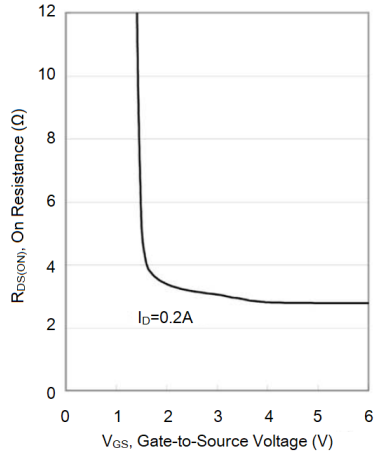
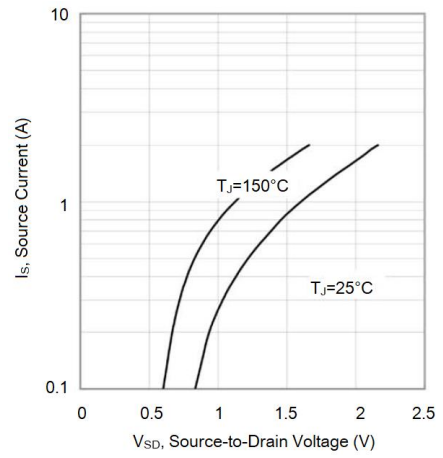


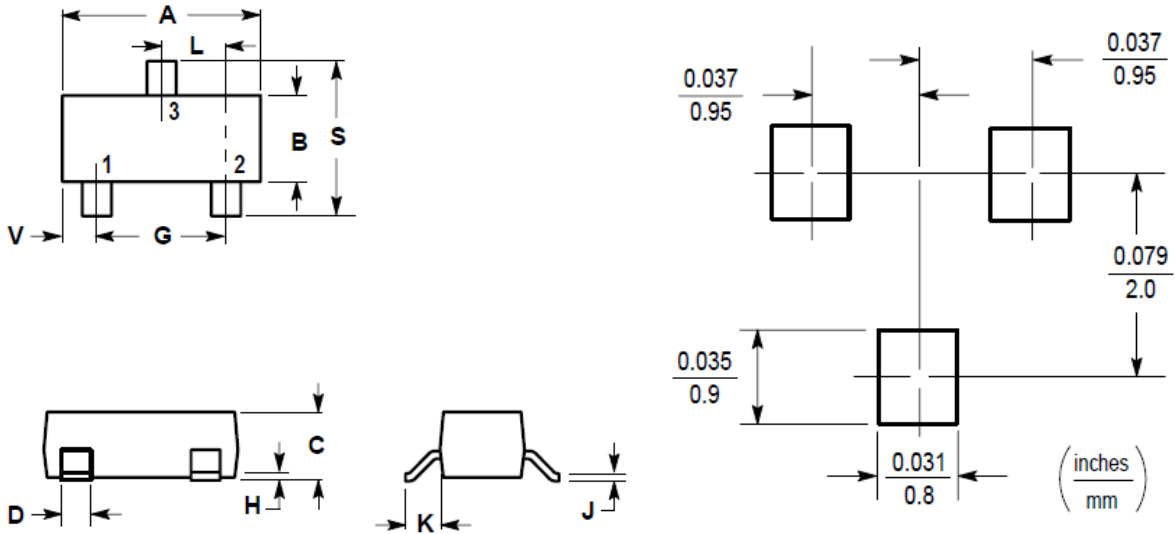
Figure 8. Source-Drain Diode Forward Voltage





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	0.89	1.11	0.0350	0.0440
D	0.37	0.50	0.0150	0.0200
G	1.78	2.04	0.0701	0.0807
H	0.013	0.100	0.0005	0.0040
J	0.085	0.177	0.0034	0.0070
K	0.35	0.69	0.0140	0.0285
L	0.89	1.02	0.0350	0.0401
S	2.10	2.64	0.0830	0.1039
V	0.45	0.60	0.0177	0.0236



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