DESCRIPTION

These miniature surface mount MOSFETs reduce power loss conserve energy, making this device ideal for use in small power management circuitry. Typical applications are dc–dc converters, load switching, power management in portable and battery–powered products such as computers, printers, cellular and cordless telephones.

The BSS84L is available in SOT-23 Package

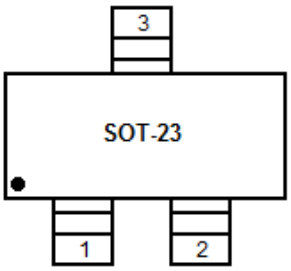
FEATURES

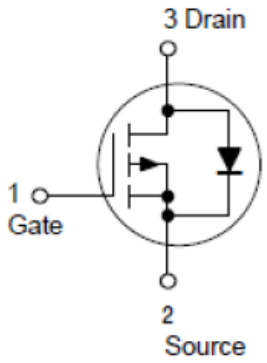
- Energy Efficient
- Available in SOT-23 Package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	BSS84L
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

T_A = 25°C

V_{DSS}, Drain–to–Source Voltage	50Vdc
V_{GS}, Gate–to–Source Voltage–Continuous	±20Vdc
I_D, Drain Current–Continuous @ T_A = 25°C	130mA
I_{DM}, Pulsed Drain Current (tp ≤10μs)	520mA
P_D, Total Power Dissipation @ T_A = 25°C	225mW
T_J, T_{STG}, Junction and Storage temperature	-55°C ~150°C
$R_{\theta JA}$, Thermal Resistance – Junction–to–Ambient	556°C /W
T_L, Maximum Lead Temperature for Soldering Purposes, for 10 seconds	260°C

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain–to–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0Vdc, I_D=250μAdc	50	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=25Vdc, V_{GS}=0Vdc V_{DS}=50Vdc, V_{GS}=0Vdc V_{DS}=50Vdc, V_{GS}=0Vdc, T_J=125°C	- - -	- - -	0.1 15 60	μA
Gate–Body Leakage Current	I_{GSS}	V_{GS}=±20Vdc, V_{DS}=0Vdc	-	-	±10	nA
ON CHARACTERISTICS[NOTE1]						
Gate–Source Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μAdc	0.8	-	2.0	V
Static Drain–to–Source On–Resistance	$R_{DS(on)}$	V_{GS}=5.0Vdc, I_D=100mAdc	-	5.0	10	Ohms
Transfer Admittance	|yfs|	V_{DS}=25Vdc, I_D=100mAdc, f=1.0kHz	50	-	-	mS
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	V_{DS}=5.0Vdc	-	30	-	pF
Output Capacitance	C_{oss}	V_{DS}=5.0Vdc	-	10	-	
Transfer Capacitance	C_{rss}	V_{DS}=5.0Vdc	-	5	-	
SWITCHING CHARACTERISTICS[NOTE2]						
Turn–On Delay Time	$t_{d(on)}$	V_{DD}=-15Vdc , I_D=-2.5Adc, R_L=50Ω	-	2.5	-	ns
Rise Time	t_r		-	1	-	
Turn–Off Delay Time	$t_{d(off)}$		-	16	-	
Fall Time	t_f		-	8	-	
Gate Charge	Q_T		-	6000	-	pC
SOURCE–DRAIN DIODE CHARACTERISTICS						
Continuous Current	I_S		-	-	0.13	A
Pulsed Current	I_{SM}		-	-	0.52	A
Forward Voltage[NOTE2]	V_{SD}		-	2.5	-	V

NOTE1: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.

NOTE2: Switching characteristics are independent of operating junction temperature.

TYPICAL CHARACTERISTICS

T_A = 25℃

Figure 1. Transfer Characteristics

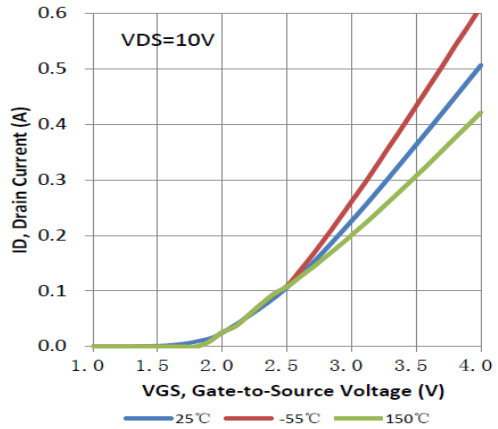


Figure 2. On-Region Characteristics

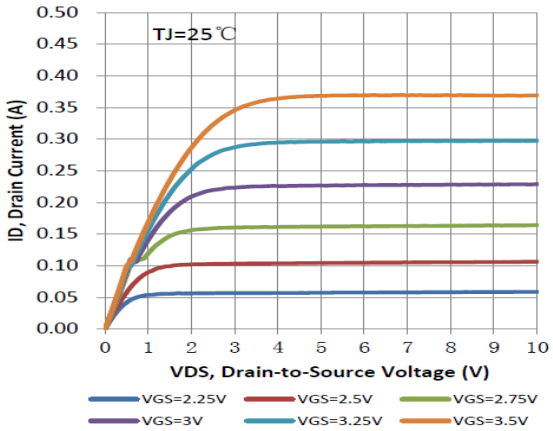


Figure 3. On-Resistance vs. Drain Current

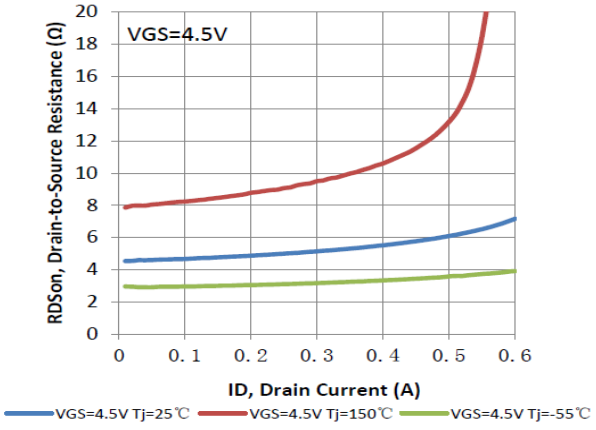


Figure 4. On-Resistance vs. Drain Current

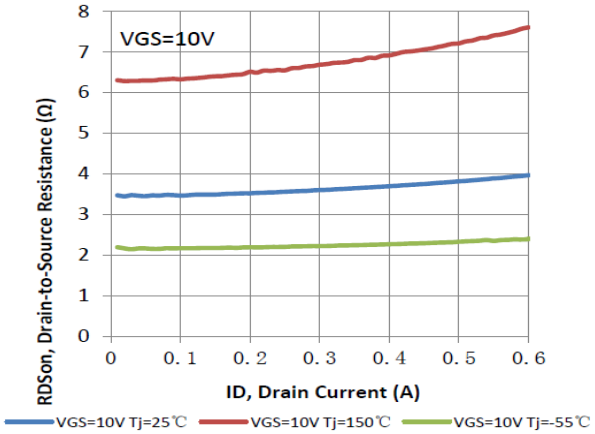


Figure 5. On-Resistance Variation with Temperature

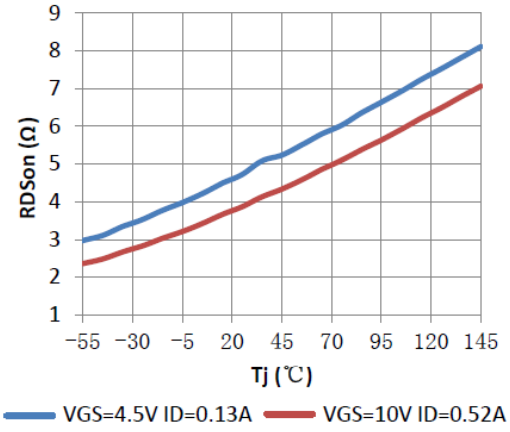
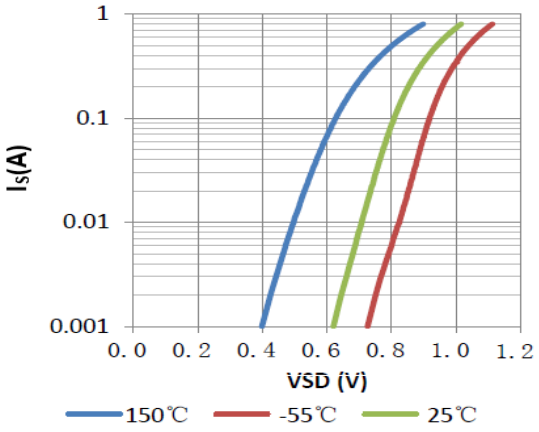
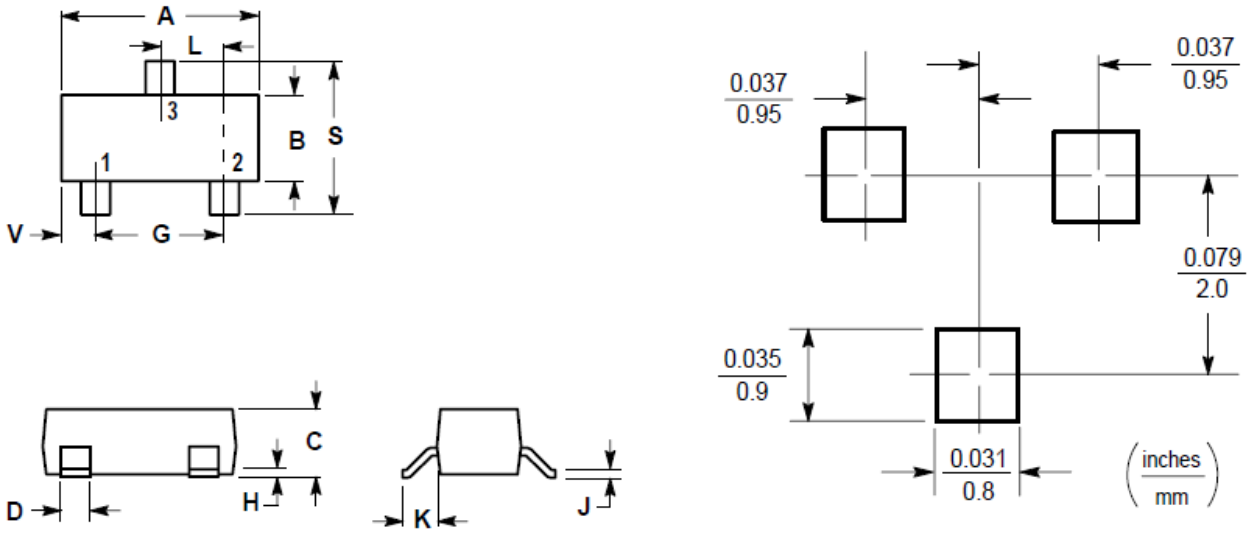


Figure 6. Body Diode Forward Voltage



PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



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

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