



DESCRIPTION

The BSS316L is available in SOT-23 Package.

BVDSS	RDSON	ID
30V	90mΩ	2A

APPLICATION

- PWM Applications
- Load Switch

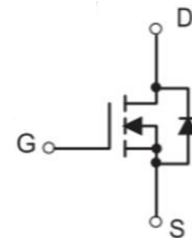
ORDERING INFORMATION

Package Type	Part Number
SOT-23	BSS316L
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS products	

FEATURE

- $V_{DS} = 30V, I_D = 2A$
 $R_{DS(ON)} < 90m\Omega @ V_{GS}=10V$
 $R_{DS(ON)} < 120m\Omega @ V_{GS}=4.5V$

PIN DESCRIPTION



Pin#	Symbol	Function
1	G	Gate
2	S	Source
3	D	Drain

ABSOLUTE MAXIMUM RATINGS

T_A=25°C Unless otherwise noted

V _{DS} , Drain-Source Voltage	30V
V _{GS} , Gate-Source Voltage	±20V
I _D , Drain Current- Continuous	2A
I _{DM} ⁽¹⁾ , Drain Current Pulsed	8A
P _D , Power Dissipation	0.9W
T _J , Operating Junction Temperature Range	-55°C~+150°C
T _{STG} , Storage Temperature Range	-55°C~+150°C
R _{θJA} ⁽²⁾ , Thermal Resistance Junction-ro-Ambient	138°C/W

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.

(1) Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

(2) Surface Mounted on FR4 Board, t ≤ 10 sec.

**ELECTRICAL CHARACTERISTICS**T_A=25°C, unless otherwise specified.

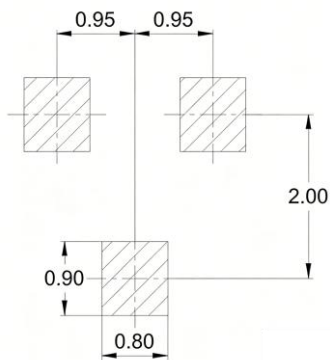
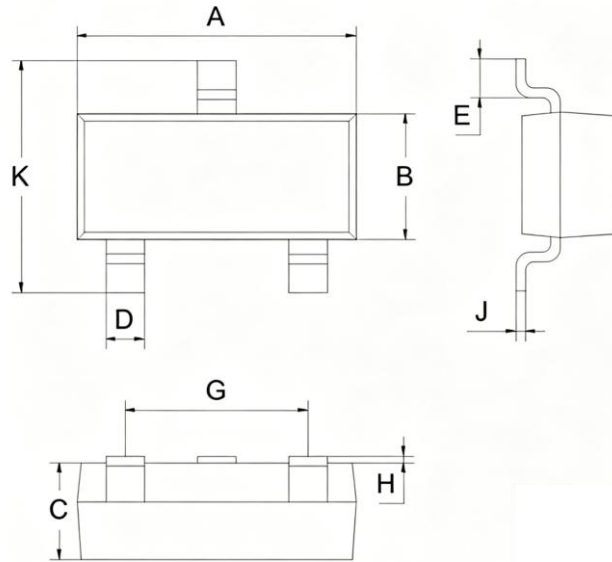
Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D = 250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	1	1.50	3	V
Drain-Source On-Static Resistance	R _{DS(on)}	V _{GS} =10V, I _D = 2A	-	-	90	mΩ
		V _{GS} = 4.5V, I _D = 2A	-	-	120	
Forward Transconductance	g _{FS}	V _{DS} = 5V, I _D = 2.5A	14	-	-	S
Dynamic Characteristics*						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, F=1MHz	-	235	-	pF
Output Capacitance	C _{oss}		-	35	-	
Reverse Transfer Capacitance	C _{rss}		-	18	-	
Switching Characteristics *						
Turn-on Delay Time	t _{d(on)}	V _{DD} = 15V, I _D =1A, V _{GS} =10V, R _{GEN} =6Ω	-	3.50	-	nS
Turn-on Rise Time	t _r		-	1.50	-	
Turn-off Delay Time	t _{d(off)}		-	17.50	-	
Turn-off Fall Time	t _f		-	2.50	-	
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} = 10V, I _D =2A	-	10	-	nC
Gate-Source Charge	Q _{gs}		-	0.95	-	
Gate-Drain Charge	Q _{gd}		-	1.60	-	
Source- Drain Diode Characteristics						
Diode Forward Current	I _S	-	-	-	2	A
Diode Forward Voltage	V _{SD}	I _S =2.5A, V _{GS} =0V	-	-	1.20	V

* Pulse Test: PulseWidth≤300μs, Duty Cycle≤2%



PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



The recommended mounting pad size

SYMBOL	MIN	MAX
A	2.700	3.100
B	1.100	1.500
C	0.900	1.100
D	0.300	0.500
E	0.350	0.480
G	1.800	2.000
H	0.020	0.100
J	0.050	0.150
K	2.200	2.600



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