

# BSS63LT1G

## High Voltage Transistor

### PNP Silicon

#### Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	$V_{CEO}$	-100	Vdc
Collector - Emitter Voltage $R_{BE} = 10 \text{ k}\Omega$	$V_{CER}$	-110	Vdc
Collector Current - Continuous	$I_C$	-100	mA

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (Note 2) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

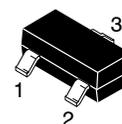
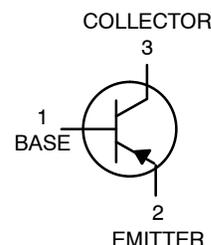
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



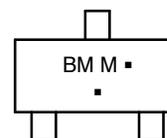
ON Semiconductor®

<http://onsemi.com>



SOT-23  
CASE 318  
STYLE 6

#### MARKING DIAGRAM



BM = Device Code  
M = Date Code\*  
■ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

#### ORDERING INFORMATION

Device	Package	Shipping†
BSS63LT1G	SOT-23 (Pb-free)	3000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# BSS63LT1G

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

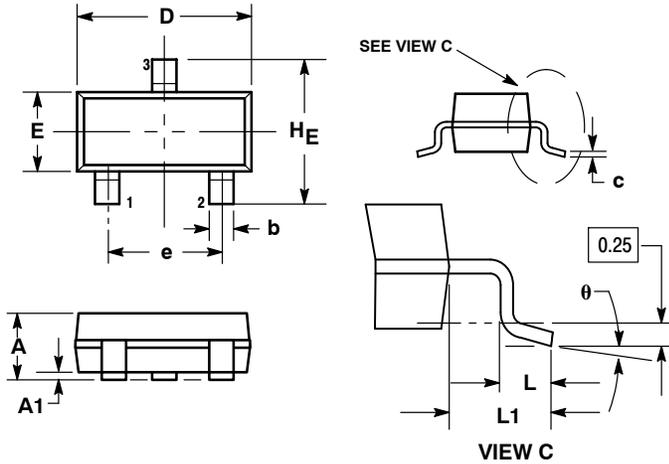
Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector – Emitter Breakdown Voltage (I <sub>C</sub> = -100 μAdc)	V <sub>(BR)CEO</sub>	-100	-	-	Vdc
Collector – Emitter Breakdown Voltage (I <sub>C</sub> = -10 μAdc, I <sub>E</sub> = 0, R <sub>BE</sub> = 10 kΩ)	V <sub>(BR)CER</sub>	-110	-	-	Vdc
Collector – Base Breakdown Voltage (I <sub>E</sub> = -10 μAdc, I <sub>C</sub> = 0)	V <sub>(BR)CBO</sub>	-110	-	-	Vdc
Emitter – Base Breakdown Voltage (I <sub>E</sub> = -10 μAdc)	V <sub>(BR)EBO</sub>	-6.0	-	-	Vdc
Collector Cutoff Current (V <sub>CB</sub> = -90 Vdc, I <sub>E</sub> = 0)	I <sub>CBO</sub>	-	-	-100	nAdc
Collector Cutoff Current (V <sub>CE</sub> = -110 Vdc, R <sub>BE</sub> = 10 kΩ)	I <sub>CER</sub>	-	-	-10	μAdc
Emitter Cutoff Current (V <sub>EB</sub> = -6.0 Vdc, I <sub>C</sub> = 0)	I <sub>EBO</sub>	-	-	-200	nAdc
<b>ON CHARACTERISTICS</b>					
DC Current Gain (I <sub>C</sub> = -10 mAdc, V <sub>CE</sub> = -1.0 Vdc) (I <sub>C</sub> = -25 mAdc, V <sub>CE</sub> = -1.0 Vdc)	h <sub>FE</sub>	30 30	- -	- -	-
Collector – Emitter Saturation Voltage (I <sub>C</sub> = -25 mAdc, I <sub>B</sub> = -2.5 mAdc)	V <sub>CE(sat)</sub>	-	-	-250	mVdc
Base – Emitter Saturation Voltage (I <sub>C</sub> = -25 mAdc, I <sub>B</sub> = -2.5 mAdc)	V <sub>BE(sat)</sub>	-	-	-900	mVdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>					
Current – Gain – Bandwidth Product (I <sub>C</sub> = -25 mAdc, V <sub>CE</sub> = -5.0 Vdc, f = 20 MHz)	f <sub>T</sub>	50	95	-	MHz
Case Capacitance (I <sub>E</sub> = I <sub>C</sub> = 0, V <sub>CB</sub> = -10 Vdc, f = 1.0 MHz)	C <sub>C</sub>	-	-	20	pF

- FR-5 = 1.0 × 0.75 × 0.062 in.
- Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

# BSS63LT1G

## PACKAGE DIMENSIONS

SOT-23 (TO-236)  
CASE 318-08  
ISSUE AN



NOTES:

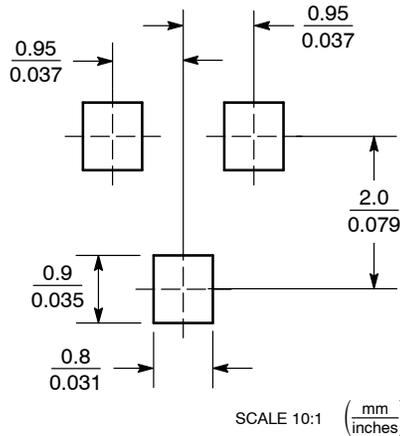
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104

STYLE 6:

1. BASE
2. EMITTER
3. COLLECTOR

### SOLDERING FOOTPRINT\*



\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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