

# BSP16T1

Preferred Device

## High Voltage Transistors

### PNP Silicon

#### Features

- Pb-Free Package is Available

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	-300	Vdc
Collector-Base Voltage	$V_{CBO}$	-350	Vdc
Emitter-Base Voltage	$V_{EBO}$	-6.0	Vdc
Collector Current	$I_C$	-100	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ (Note 1)	$P_D$	1.5	W
Storage Temperature Range	$P_D$	-65 to +150	$^\circ\text{C}$
Junction Temperature	$T_J$	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.

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C}/\text{W}$

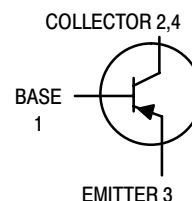
- Device mounted on a glass epoxy printed circuit board 1.575 in x 1.575 in x 0.059 in; mounting pad for the collector lead min. 0.93 sq. in.



ON Semiconductor®

<http://onsemi.com>

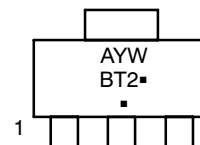
### PNP SILICON HIGH VOLTAGE TRANSISTOR SURFACE MOUNT



#### MARKING DIAGRAM



TO-223  
CASE 318E  
STYLE 1



A = Assembly Location  
Y = Year  
W = Work Week  
BT2 = Device Code  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

#### ORDERING INFORMATION

Device	Package	Shipping†
BSP16T1	TO-223	1000/Tape & Reel
BSP16T1G	TO-223 (Pb-Free)	1000/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.

Preferred devices are recommended choices for future use and best overall value.

# BSP16T1

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

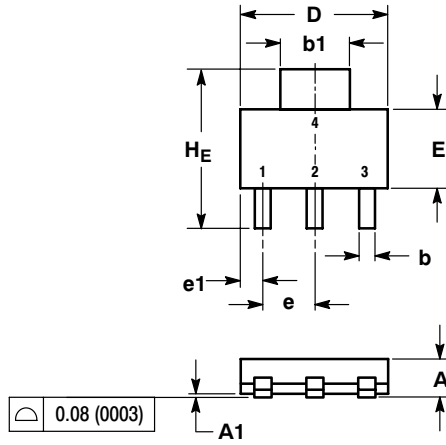
Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = -50 mA <sub>dc</sub> , I <sub>B</sub> = 0, L = 25 mH)	V <sub>(BR)CEO</sub>	-300	-	V <sub>dc</sub>
Collector-Base Breakdown Voltage (I <sub>C</sub> = -100 μA <sub>dc</sub> , I <sub>E</sub> = 0)	V <sub>(BR)CBO</sub>	-300	-	V <sub>dc</sub>
Collector-Emitter Cutoff Current (V <sub>CE</sub> = -250 V <sub>dc</sub> , I <sub>B</sub> = 0)	I <sub>CES</sub>	-	-50	μA <sub>dc</sub>
Collector-Base Cutoff Current (V <sub>CB</sub> = -280 V <sub>dc</sub> , I <sub>E</sub> = 0)	I <sub>CBO</sub>	-	-1.0	μA <sub>dc</sub>
Emitter-Base Cutoff Current (V <sub>EB</sub> = -6.0 V <sub>dc</sub> , I <sub>C</sub> = 0)	I <sub>EBO</sub>	-	-20	μA <sub>dc</sub>
<b>ON CHARACTERISTICS</b>				
DC Current Gain (V <sub>CE</sub> = -10 V <sub>dc</sub> , I <sub>C</sub> = -50 mA <sub>dc</sub> )	h <sub>FE</sub>	30	120	-
Collector-Emitter Saturation Voltage (I <sub>C</sub> = -50 mA <sub>dc</sub> , I <sub>B</sub> = -5.0 mA <sub>dc</sub> )	V <sub>CE(sat)</sub>	-	-2.0	V <sub>dc</sub>
<b>DYNAMIC CHARACTERISTICS</b>				
Current Gain - Bandwidth Product (V <sub>CE</sub> = -10 V <sub>dc</sub> , I <sub>C</sub> = -10 mA <sub>dc</sub> , f = 30 MHz)	f <sub>T</sub>	15	-	MHz
Collector-Base Capacitance (V <sub>CB</sub> = -10 V <sub>dc</sub> , I <sub>E</sub> = 0, f = 1.0 MHz)	C <sub>obo</sub>	-	15	pF

# BSP16T1

## PACKAGE DIMENSIONS

SOT-223 (TO-261)  
CASE 318E-04  
ISSUE L

SCALE 1:1



NOTES:

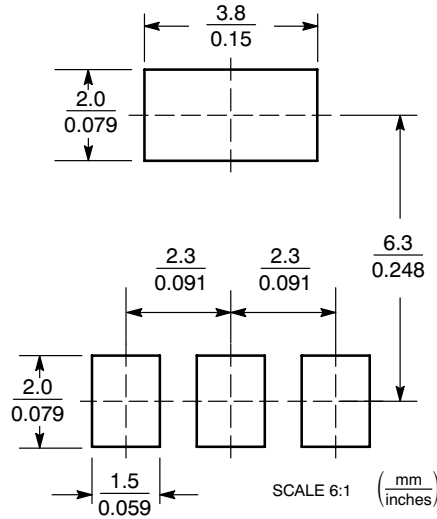
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.50	1.63	1.75	0.060	0.064	0.068
A1	0.02	0.06	0.10	0.001	0.002	0.004
b	0.60	0.75	0.89	0.024	0.030	0.035
b1	2.90	3.06	3.20	0.115	0.121	0.126
c	0.24	0.29	0.35	0.009	0.012	0.014
D	6.30	6.50	6.70	0.249	0.256	0.263
E	3.30	3.50	3.70	0.130	0.138	0.145
e	2.20	2.30	2.40	0.087	0.091	0.094
e1	0.85	0.94	1.05	0.033	0.037	0.041
L1	1.50	1.75	2.00	0.060	0.069	0.078
HE	6.70	7.00	7.30	0.264	0.276	0.287
θ	0°	-	10°	0°	-	10°

STYLE 1:

1. BASE
2. COLLECTOR
3. EMITTER
4. 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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