

PZT751T1

Preferred Device

PNP Silicon Planar Epitaxial Transistor

This PNP Silicon Epitaxial transistor is designed for use in industrial and consumer applications. The device is housed in the SOT-223 package which is designed for medium power surface mount applications.

Features

- High Current: 2.0 A
- The SOT-223 Package can be soldered using wave or reflow.
- SOT-223 package ensures level mounting, resulting in improved thermal conduction, and allows visual inspection of soldered joints. The formed leads absorb thermal stress during soldering, eliminating the possibility of damage to the die
- NPN Complement is PZT651T1
- Pb-Free Package is Available

MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CBO}	80	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current	I_C	2.0	Adc
Total Power Dissipation @ $T_A = 25^\circ\text{C}^{(1)}$ Derate above 25°C	P_D	0.8 6.4	W mW/ $^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to 150	$^\circ\text{C}$
Junction Temperature	T_J	150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance from Junction-to-Ambient in Free Air	$R_{\theta JA}$	156	$^\circ\text{C}/\text{W}$
Maximum Temperature for Soldering Purposes Time in Solder Bath	T_L	260 10	$^\circ\text{C}$ Sec

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

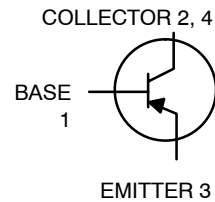
1. Device mounted on a FR-4 glass epoxy printed circuit board using minimum recommended footprint.



ON Semiconductor®

<http://onsemi.com>

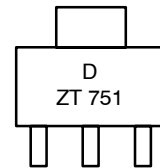
SOT-223 PACKAGE HIGH CURRENT PNP SILICON TRANSISTOR SURFACE MOUNT



MARKING DIAGRAM



TO-261AA
CASE 318E
STYLE 1



ZT 751 = Specific Device Code
D = Date Code

ORDERING INFORMATION

Device	Package	Shipping
PZT751T1	SOT-223	1000 / Tape & Reel
PZT751T1G	SOT-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.

PZT751T1

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min	Max	Unit
-----------------	--------	-----	-----	------

OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 10 \text{ mAdc}$, $I_B = 0$)	$V_{(BR)CEO}$	60	-	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 100 \mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	80	-	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10 \mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	5.0	-	Vdc
Base-Emitter Cutoff Current ($V_{EB} = 4.0 \text{ Vdc}$)	I_{EBO}	-	0.1	μA
Collector-Base Cutoff Current ($V_{CB} = 80 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	-	100	nA

ON CHARACTERISTICS (Note 2)

DC Current Gain ($I_C = 50 \text{ mA}$, $V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 500 \text{ mA}$, $V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 1.0 \text{ A}$, $V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 2.0 \text{ A}$, $V_{CE} = 2.0 \text{ Vdc}$)	h_{FE}	75 75 75 40	- - - -	-
Collector-Emitter Saturation Voltages ($I_C = 2.0 \text{ A}$, $I_B = 200 \text{ mA}$) ($I_C = 1.0 \text{ A}$, $I_B = 100 \text{ mA}$)	$V_{CE(sat)}$	- -	0.5 0.3	Vdc
Base-Emitter Voltages ($I_C = 1.0 \text{ A}$, $V_{CE} = 2.0 \text{ Vdc}$)	$V_{BE(on)}$	-	1.0	Vdc
Base-Emitter Saturation Voltage ($I_C = 1.0 \text{ A}$, $I_B = 100 \text{ mA}$)	$V_{BE(sat)}$	-	1.2	Vdc
Current-Gain-Bandwidth ($I_C = 50 \text{ mA}$, $V_{CE} = 5.0 \text{ Vdc}$, $f = 100 \text{ MHz}$)	f_T	75	-	MHz

2. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle = 2.0%.

PZT751T1

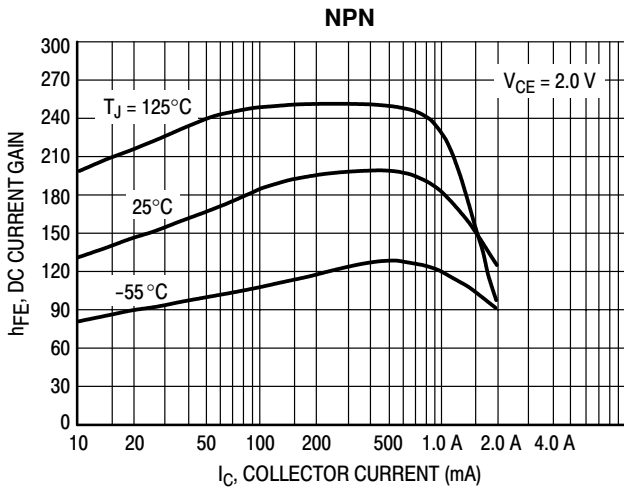


Figure 1. Typical DC Current Gain

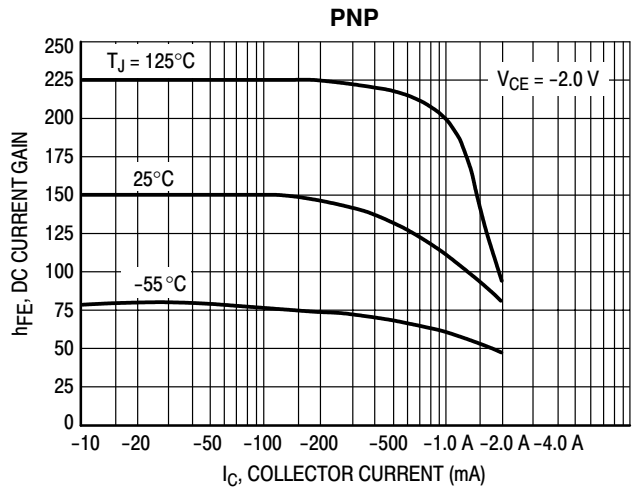


Figure 2. Typical DC Current Gain

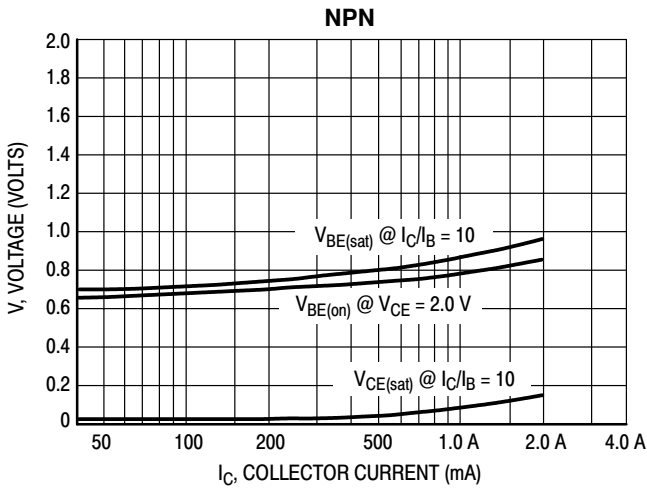


Figure 3. On Voltages

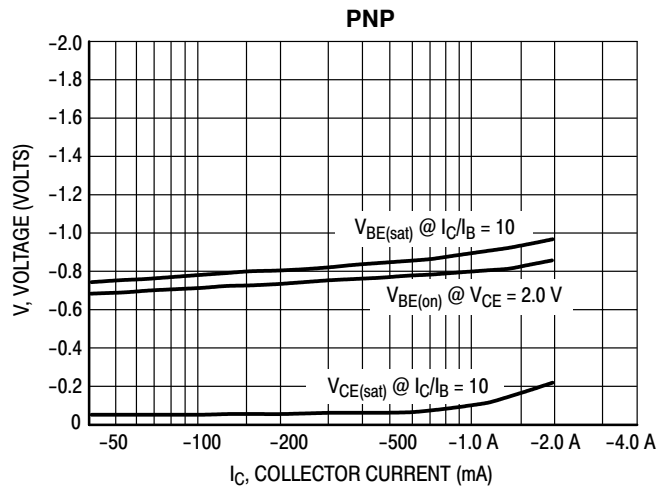


Figure 4. On Voltages

PZT751T1

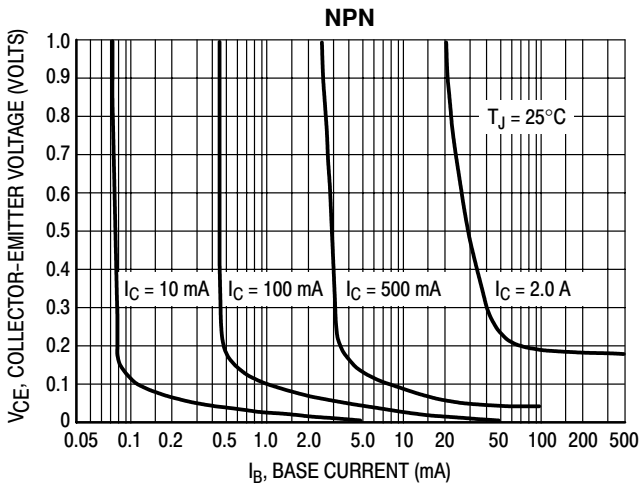


Figure 5. Collector Saturation Region

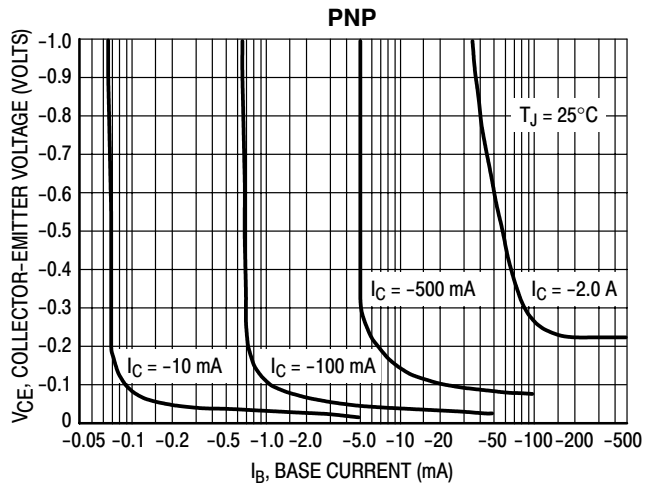


Figure 6. Collector Saturation Region

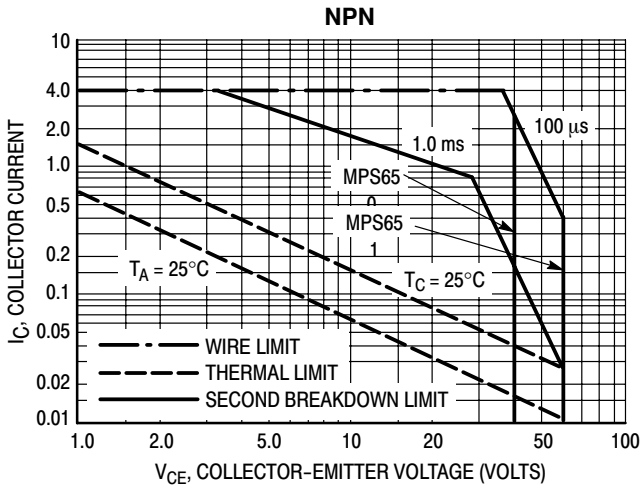


Figure 7. Safe Operating Area

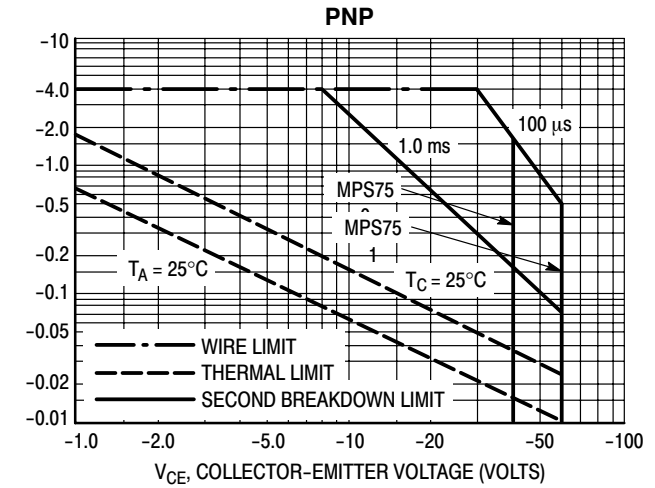
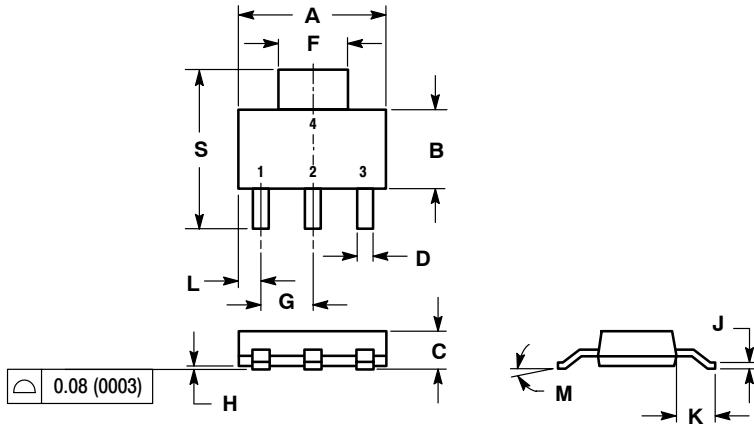


Figure 8. Safe Operating Area

PZT751T1

PACKAGE DIMENSIONS

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

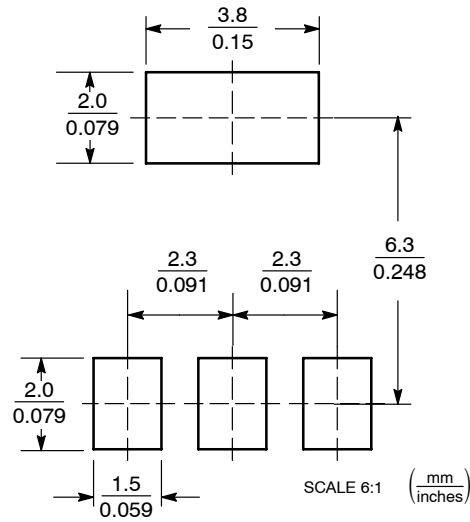


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.249	0.263	6.30	6.70
B	0.130	0.145	3.30	3.70
C	0.060	0.068	1.50	1.75
D	0.024	0.035	0.60	0.89
F	0.115	0.126	2.90	3.20
G	0.087	0.094	2.20	2.40
H	0.0008	0.0040	0.020	0.100
J	0.009	0.014	0.24	0.35
K	0.060	0.078	1.50	2.00
L	0.033	0.041	0.85	1.05
M	0°	10°	0°	10°
S	0.264	0.287	6.70	7.30


- STYLE 1:
PIN 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.

PZT751T1

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082-1312 USA
Phone: 480-829-7710 or 800-344-3860 Toll Free USA/Canada
Fax: 480-829-7709 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051
Phone: 81-3-5773-3850

ON Semiconductor Website: <http://onsemi.com>

Order Literature: <http://www.onsemi.com/litorder>

For additional information, please contact your
local Sales Representative.