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°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°C(1) Derate above 25°C	P_D	0.8 6.4	W mW/°C
Storage Temperature Range	T_{stg}	−65 to 150	°C
Junction Temperature	T_J	150	°C

THERMAL CHARACTERISTICS

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

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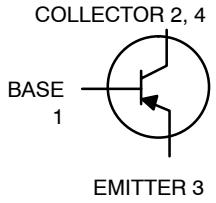
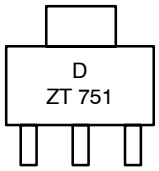
SOT−223 PACKAGE HIGH CURRENT PNP SILICON TRANSISTOR SURFACE MOUNT



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.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Breakdown Voltage (I_C = 10 mAdc, I_B = 0)	$V_{(BR)CEO}$	60	−	Vdc
Collector−Emitter Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	$V_{(BR)CBO}$	80	−	Vdc
Emitter−Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)	$V_{(BR)EBO}$	5.0	−	Vdc
Base−Emitter Cutoff Current (V_{EB} = 4.0 Vdc)	I_{EBO}	−	0.1	μAdc
Collector−Base Cutoff Current (V_{CB} = 80 Vdc, I_E = 0)	I_{CBO}	−	100	nAdc
ON CHARACTERISTICS (Note 2)				
DC Current Gain (I_C = 50 mAdc, V_{CE} = 2.0 Vdc) (I_C = 500 mAdc, V_{CE} = 2.0 Vdc) (I_C = 1.0 Adc, V_{CE} = 2.0 Vdc) (I_C = 2.0 Adc, V_{CE} = 2.0 Vdc)	h_{FE}	 75 75 75 40	 − − − −	−
Collector−Emitter Saturation Voltages (I_C = 2.0 Adc, I_B = 200 mAdc) (I_C = 1.0 Adc, I_B = 100 mAdc)	$V_{CE(sat)}$	 − −	 0.5 0.3	Vdc
Base−Emitter Voltages (I_C = 1.0 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$	−	1.0	Vdc
Base−Emitter Saturation Voltage (I_C = 1.0 Adc, I_B = 100 mAdc)	$V_{BE(sat)}$	−	1.2	Vdc
Current−Gain−Bandwidth (I_C = 50 mAdc, V_{CE} = 5.0 Vdc, f = 100 MHz)	f_T	75	−	MHz

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

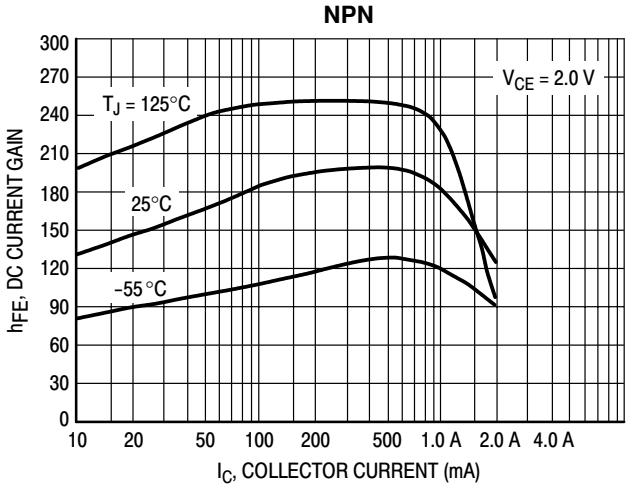


Figure 1. Typical DC Current Gain

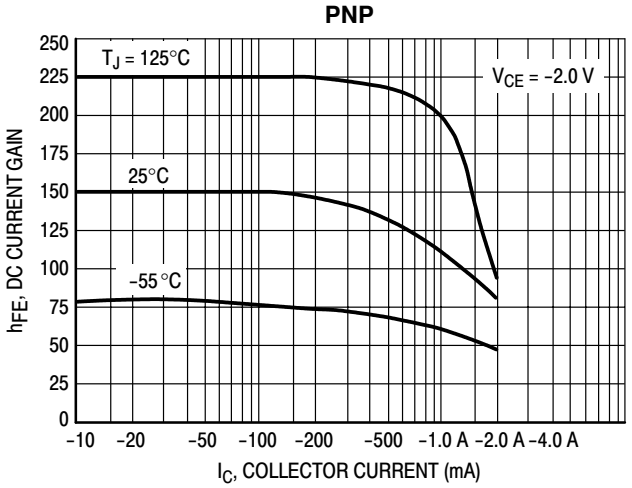


Figure 2. Typical DC Current Gain

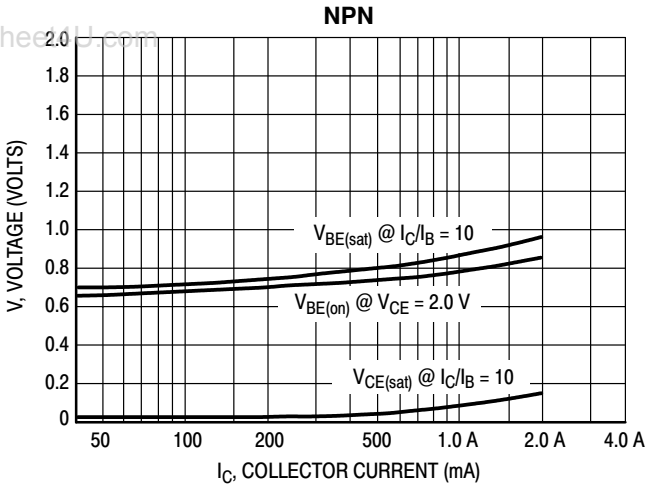


Figure 3. On Voltages

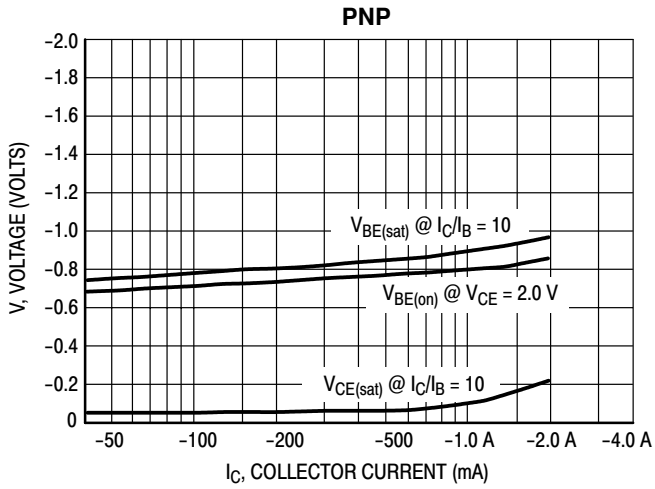


Figure 4. On Voltages

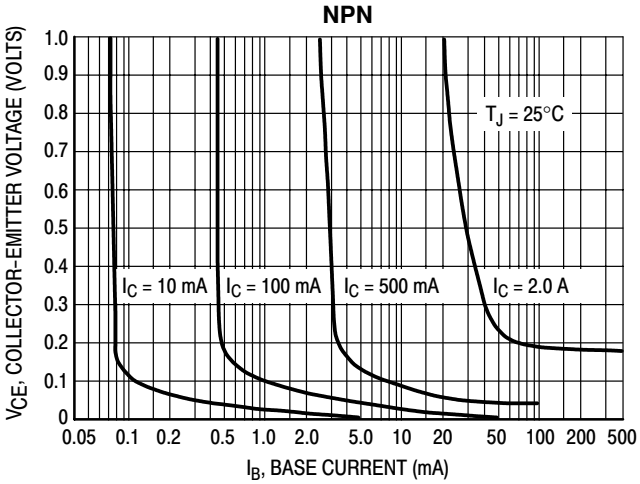


Figure 5. Collector Saturation Region

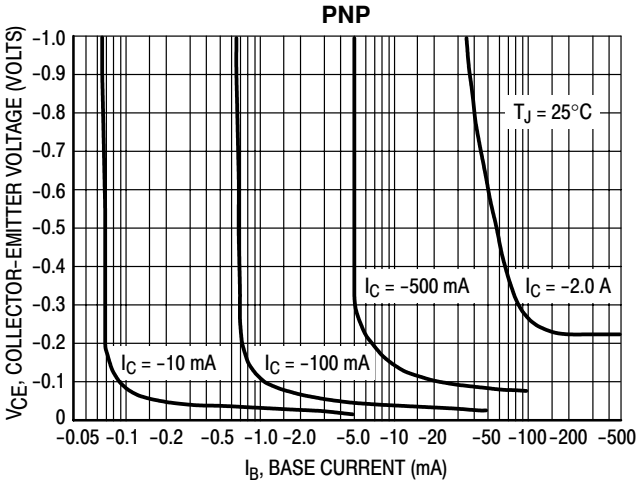


Figure 6. Collector Saturation Region

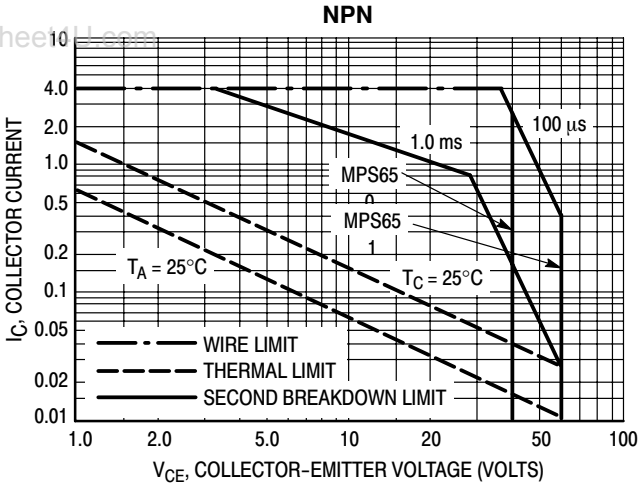


Figure 7. Safe Operating Area

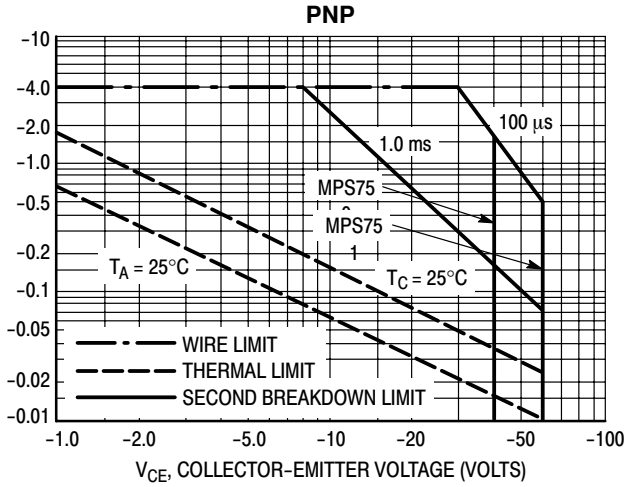
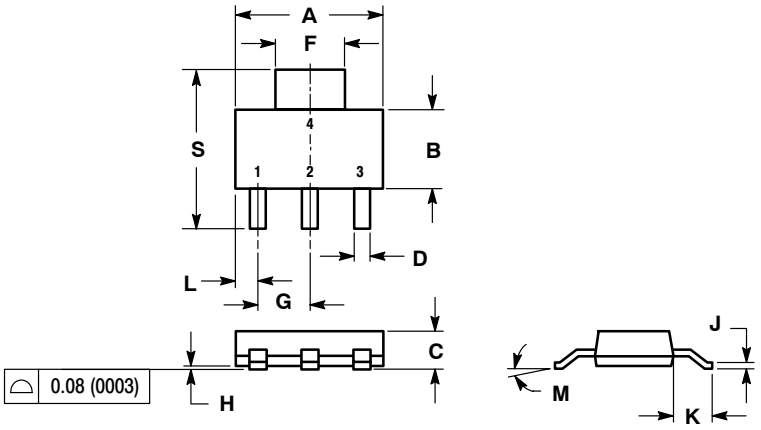


Figure 8. Safe Operating Area

PACKAGE DIMENSIONS

SOT−223 (TO−261)
CASE 318E−04
ISSUE K

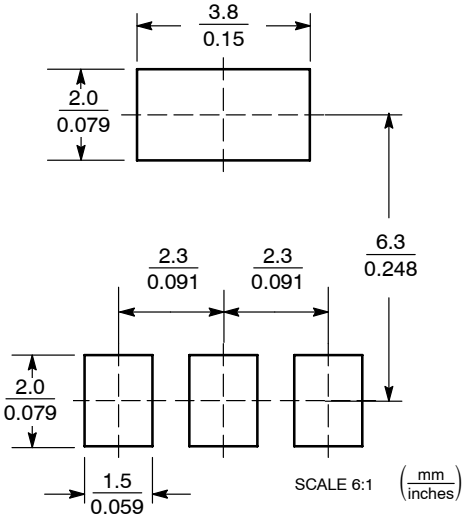


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
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ON Semiconductor Website: http://onsemi.com

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For additional information, please contact your local Sales Representative.

PZT751T1/D