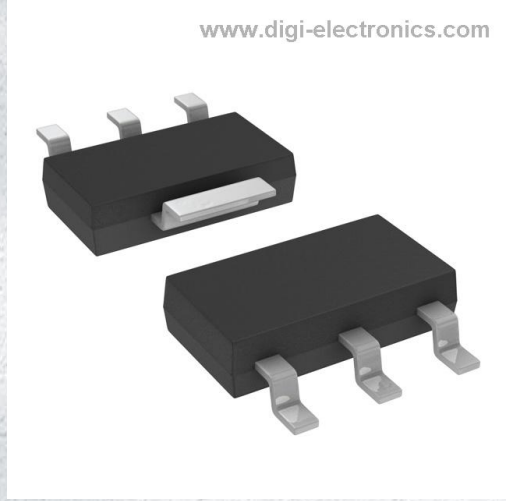
SPZT751T1G Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	SPZT751T1G-DG
Manufacturer	onsemi
Manufacturer Product Number	SPZT751T1G
Description	TRANS PNP 60V 2A SOT223
Detailed Description	Bipolar (BJT) Transistor PNP 60 V 2 A 75MHz 800 mW Surface Mount SOT-223 (TO-261)

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
SPZT751T1G	onsemi
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	2 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
60 V	500mV @ 200mA, 2A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	75 @ 1A, 2V
Power - Max:	Frequency - Transition:
800 mW	75MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-261-4, TO-261AA	SOT-223 (TO-261)
Base Product Number:	
SPZT751	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0095	

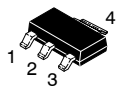
onsemi

DATA SHEET
www.onsemi.com

PNP Silicon Planar Epitaxial Transistor PZT751T1

SOT−223 PACKAGE HIGH CURRENT NPN SILICON TRANSISTOR SURFACE MOUNT

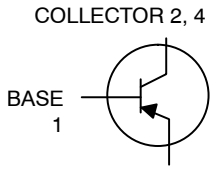
This PNP Silicon Epitaxial transistor is designed for use in industrial and consumer applications. The device is housed in the SOT−223 package which is designed for medium power surface mount applications.



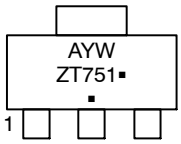
SOT−223
CASE 318E
STYLE 1

Features

- High Current
- 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 PZT651T1G
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant*



MARKING DIAGRAM



A = Assembly Location
Y = Year
W = Work Week
▪ = Pb−Free Package

(Note: Microdot may be in either location)

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 (Note 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

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

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

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

ORDERING INFORMATION

Device	Package	Shipping†
PZT751T1G	SOT−223 (Pb−Free)	1,000 / Tape & Reel
SPZT751T1G	SOT−223 (Pb−Free)	1,000 / 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.

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%.

PZT751T1

TYPICAL CHARACTERISTICS

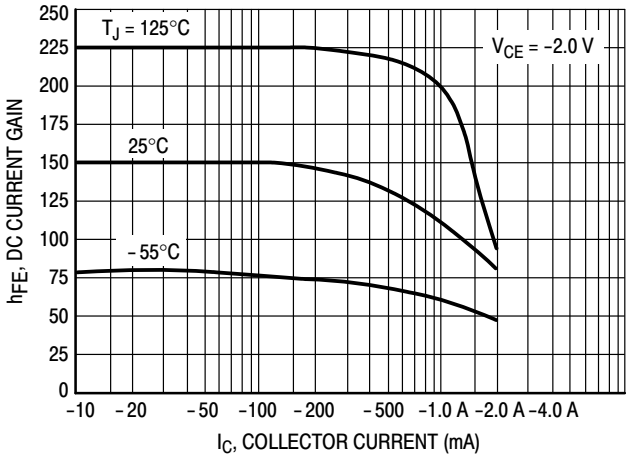


Figure 1. Typical DC Current Gain

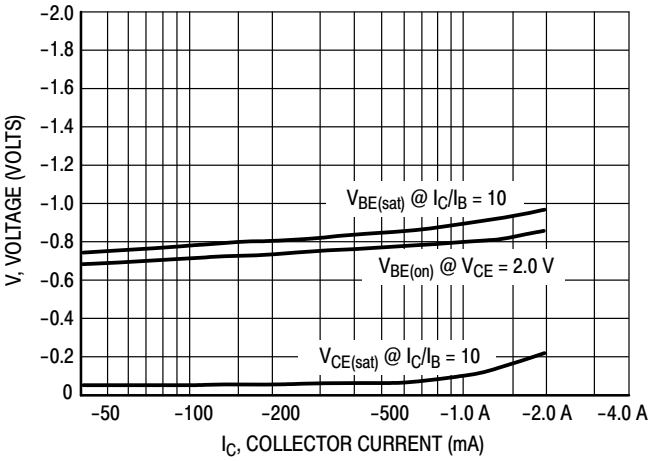


Figure 2. On Voltages

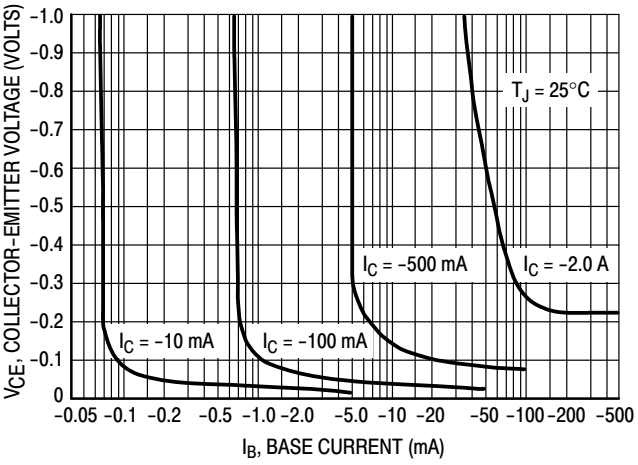


Figure 3. Collector Saturation Region

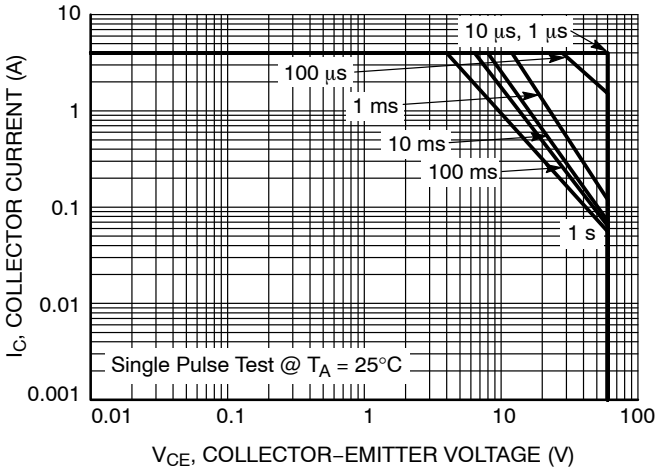


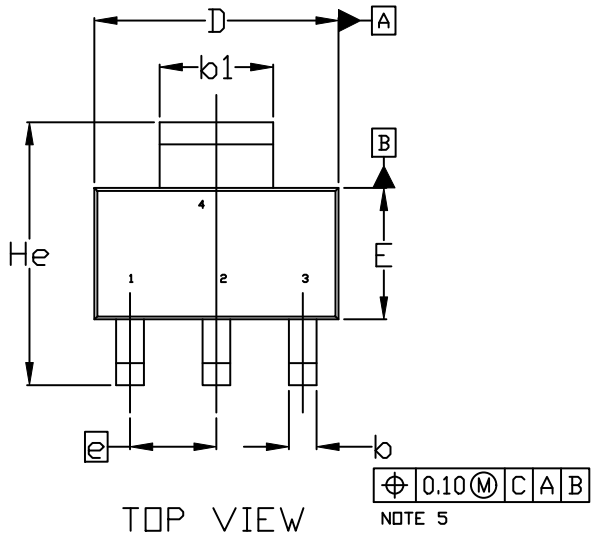
Figure 4. Safe Operating Area

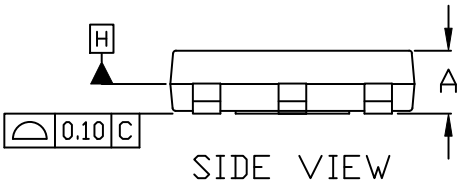
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

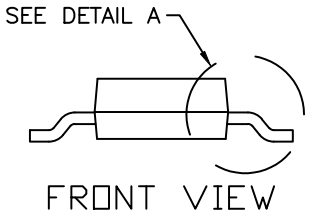
SCALE 1:1

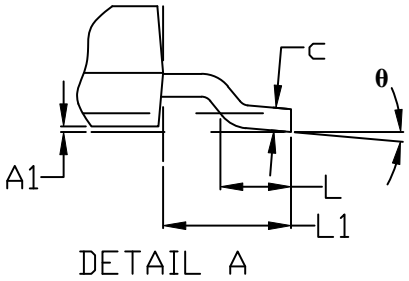
SOT−223 (TO−261)
CASE 318E−04
ISSUE R

DATE 02 OCT 2018



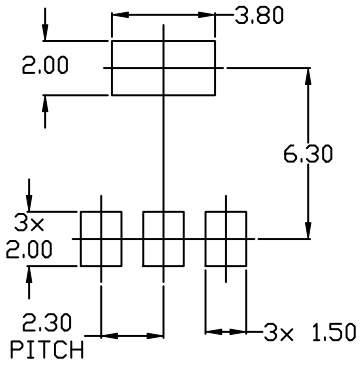






NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSIONS D & E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.200MM PER SIDE.
4. DATUMS A AND B ARE DETERMINED AT DATUM H.
5. A1 IS DEFINED AS THE VERTICAL DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT OF THE PACKAGE BODY.
6. POSITIONAL TOLERANCE APPLIES TO DIMENSIONS b AND b1.

	MILLIMETERS		
DIM	MIN.	NOM.	MAX.
A	1.50	1.63	1.75
A1	0.02	0.06	0.10
b	0.60	0.75	0.89
b1	2.90	3.06	3.20
c	0.24	0.29	0.35
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	2.30 BSC		
L	0.20	---	---
L1	1.50	1.75	2.00
He	6.70	7.00	7.30
θ	0°	---	10°



RECOMMENDED MOUNTING FOOTPRINT

DOCUMENT NUMBER:	**98ASB42680B**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	**SOT−223 (TO−261)**	**PAGE 1 OF 2**

SOT−223 (TO−261)
CASE 318E−04
ISSUE R

DATE 02 OCT 2018

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. CATHODE
3. NC
4. CATHODE

STYLE 3:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN

STYLE 4:
PIN 1. SOURCE
2. DRAIN
3. GATE
4. DRAIN

STYLE 5:
PIN 1. DRAIN
2. GATE
3. SOURCE
4. GATE

STYLE 6:
PIN 1. RETURN
2. INPUT
3. OUTPUT
4. INPUT

STYLE 7:
PIN 1. ANODE 1
2. CATHODE
3. ANODE 2
4. CATHODE

STYLE 8:
CANCELLED

STYLE 9:
PIN 1. INPUT
2. GROUND
3. LOGIC
4. GROUND

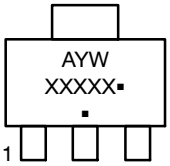
STYLE 10:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

STYLE 11:
PIN 1. MT 1
2. MT 2
3. GATE
4. MT 2

STYLE 12:
PIN 1. INPUT
2. OUTPUT
3. NC
4. OUTPUT

STYLE 13:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

GENERIC MARKING DIAGRAM*



A = Assembly Location
Y = Year
W = Work Week
XXXXX = Specific Device Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

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DESCRIPTION:	**SOT−223 (TO−261)**		**PAGE 2 OF 2**

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
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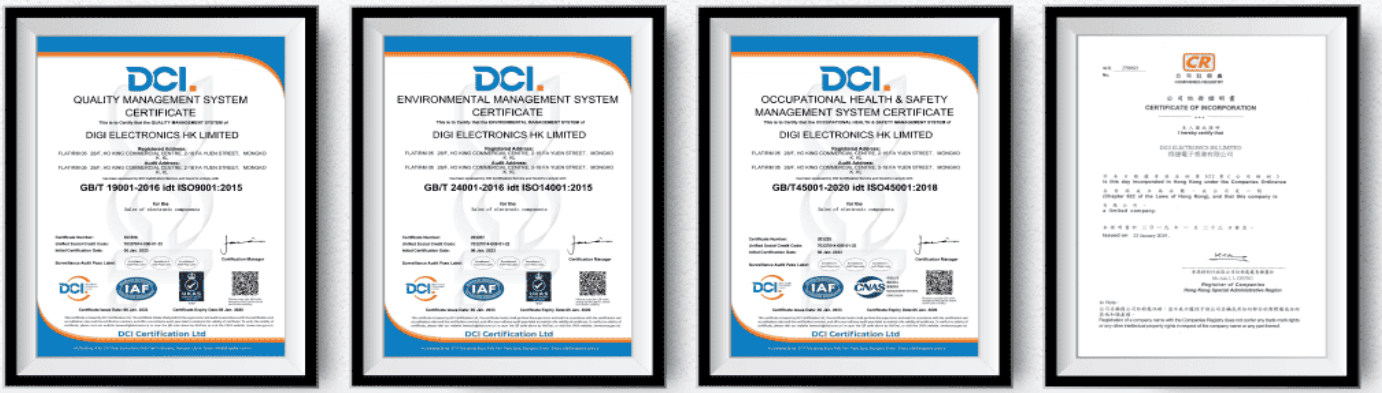

Tel: +00 852-30501935

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