PZTA92T1G, NSVPZTA92T1G

High Voltage Transistor

PNP Silicon

ON Semiconductor®

http://onsemi.com

SOT−223 PACKAGE
PNP SILICON
HIGH VOLTAGE TRANSISTOR
SURFACE MOUNT

Features

- Complement to PZTA42T1G
- NSV 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

MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector−Emitter Voltage	V_{CEO}	−300	Vdc
Collector−Base Voltage	V_{CBO}	−300	Vdc
Emitter−Base Voltage	V_{EBO}	−5.0	Vdc
Collector Current	I_C	−500	mAdc
Total Power Dissipation up to @ T_A = 25°C (Note 1)	P_D	1.5	W
Storage Temperature Range	T_{stg}	−65 to +150	°C
Junction Temperature	T_J	150	°C

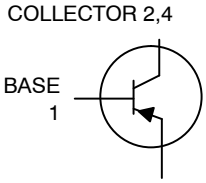
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

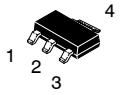
1. Device mounted on a FR-4 glass epoxy printed circuit board 1.575 in x 1.575 in x 0.0625 in; mounting pad for the collector lead = 0.93 sq in.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JA}$	83.3	°C/W

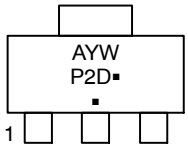
2. Device mounted on a FR−4 glass epoxy printed circuit board 1.575 in x 1.575 in x 0.0625 in; mounting pad for the collector lead = 0.93 sq in.





SOT−223
CASE 318E
STYLE 1

MARKING DIAGRAM



P2D = Specific Device Code
A = Assembly Location
Y = Year
W = Work Week
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
PZTA92T1G	SOT−223 (Pb−Free)	1,000 / Tape & Reel
NSVPZTA92T1G	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 Specification Brochure, BRD8011/D.

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

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Breakdown Voltage (Note 3) (I_C = −1.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	−300	−	Vdc
Collector−Base Breakdown Voltage (I_C = −100 μAdc, I_E = 0)	$V_{(BR)CBO}$	−300	−	Vdc
Emitter−Base Breakdown Voltage (I_E = −100 μAdc, I_C = 0)	$V_{(BR)EBO}$	−5.0	−	Vdc
Collector-Base Cutoff Current (V_{CB} = −200 Vdc, I_E = 0)	I_{CBO}	−	−0.25	μAdc
Emitter−Base Cutoff Current (V_{BE} = −3.0 Vdc, I_C = 0)	I_{EBO}	−	−0.1	μAdc
ON CHARACTERISTICS				
DC Current Gain (I_C = −1.0 mAdc, V_{CE} = −10 Vdc) (I_C = −10 mAdc, V_{CE} = −10 Vdc) (I_C = −30 mAdc, V_{CE} = −10 Vdc)	h_{FE}	 25 40 40	 − − −	−
Saturation Voltages (I_C = −20 mAdc, I_B = −2.0 mAdc) (I_C = −20 mAdc, I_B = −2.0 mAdc)	 $V_{CE(sat)}$ $V_{BE(sat)}$	 − −	 −0.5 −0.9	Vdc
DYNAMIC CHARACTERISTICS				
Collector−Base Capacitance @ f = 1.0 MHz (V_{CB} = −20 Vdc, I_E = 0)	C_{cb}	−	6.0	pF
Current−Gain − Bandwidth Product (I_C = −10 mAdc, V_{CE} = − 20 Vdc, f = 100 MHz)	f_T	50	−	MHz

3. Pulse Test Conditions, t_p = 300 μs, δ 0.02.

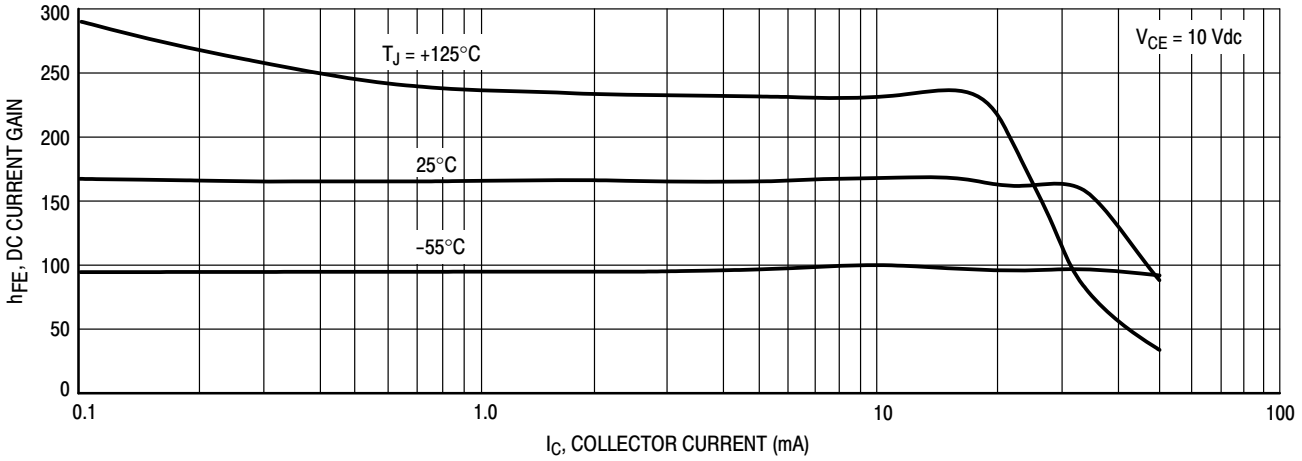


Figure 1. DC Current Gain

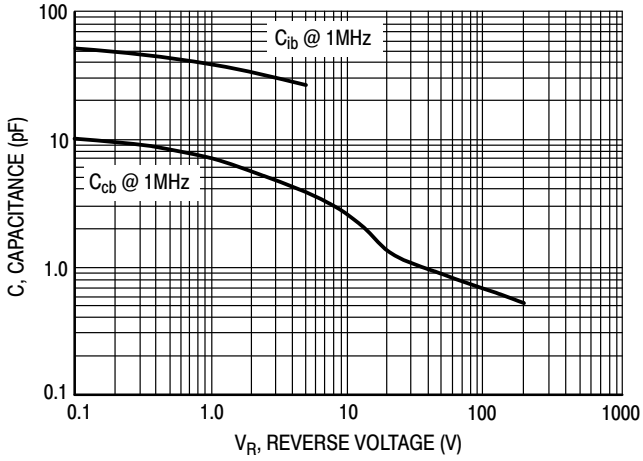


Figure 2. Capacitance

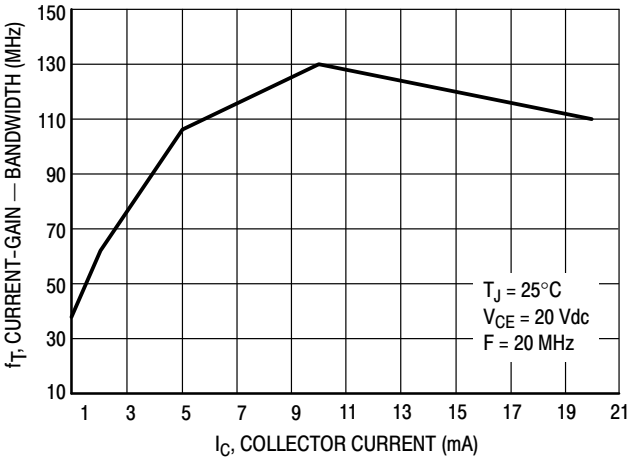
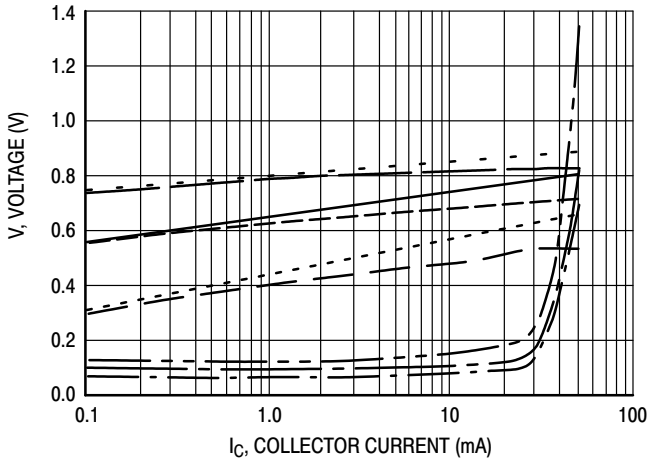


Figure 3. Current−Gain − Bandwidth



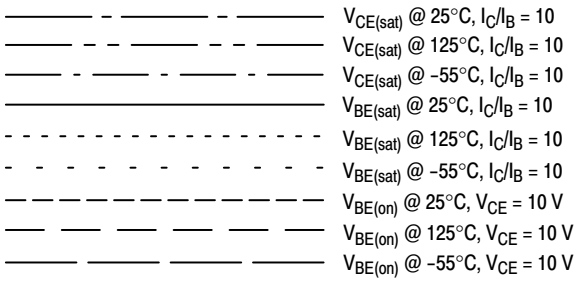


Figure 4. "ON" Voltages

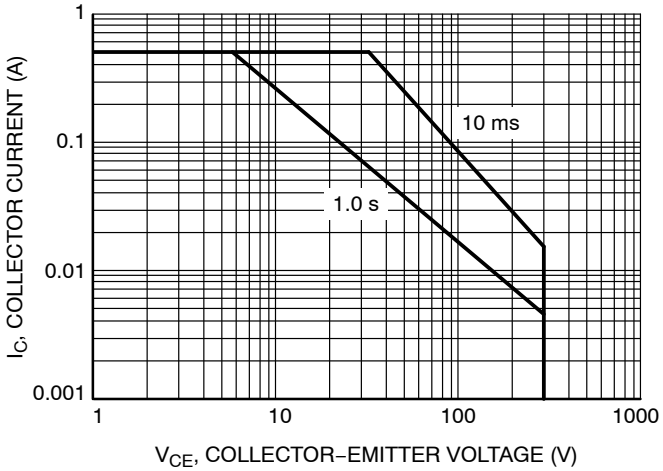
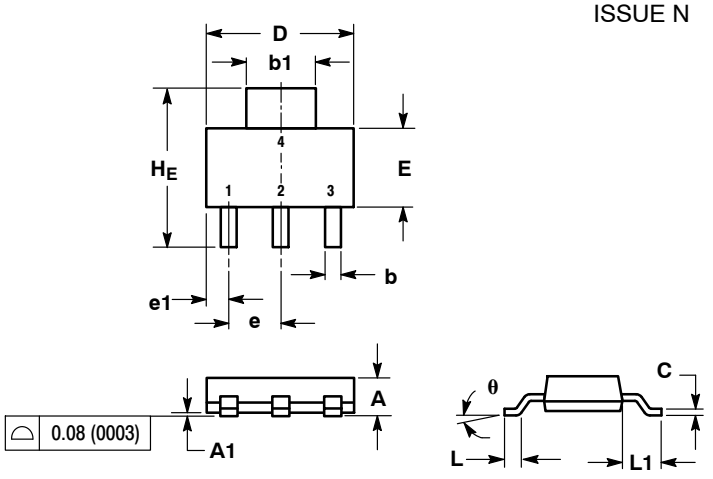


Figure 5. Safe Operating Area

PACKAGE DIMENSIONS

SOT−223 (TO−261)
CASE 318E−04
ISSUE N

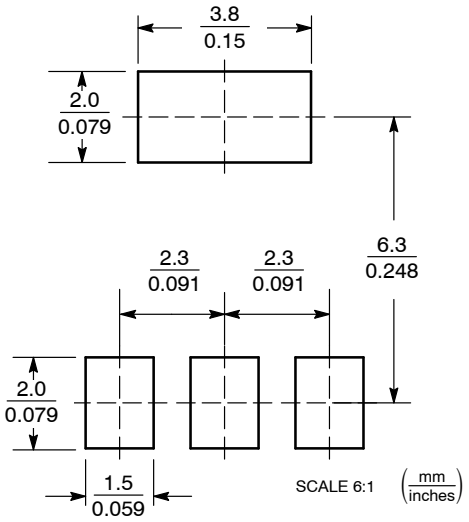


NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	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
L	0.20	−−−	−−−	0.008	−−−	−−−
L1	1.50	1.75	2.00	0.060	0.069	0.078
H_E	6.70	7.00	7.30	0.264	0.276	0.287
θ	0°	–	10°	0°	–	10°

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
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