

200V PNP MEDIUM POWER HIGH GAIN TRANSISTOR IN E-LINE

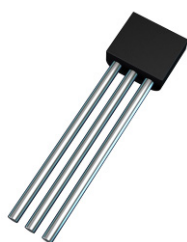
Features

- $BV_{CEO} > -200V$
- $I_C = -0.5A$ High Continuous Collector Current
- $I_{CM} = -1A$ Peak Pulse Current
- T_J up to $200^{\circ}C$ for High Temperature Operation
- $h_{FE} > 250 @ 0.3A$ for High Gain Hold-Up
- $P_D = 1W$ Power dissipation
- Complementary NPN Type: ZTX696B
- **Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

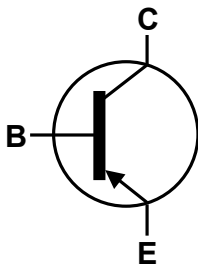
Mechanical Data

- Case: E-Line (TO-92 Compatible)
- Case Material: molded plastic, "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 
- Weight: 0.159 grams (approximate)

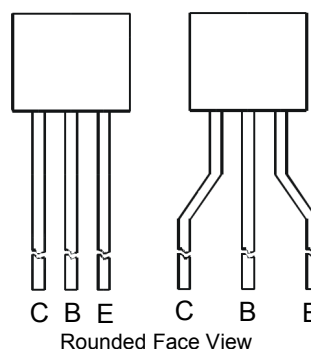
E-Line
(TO-92 Compatible)



Flat Face View



Device Symbol



Rounded Face View

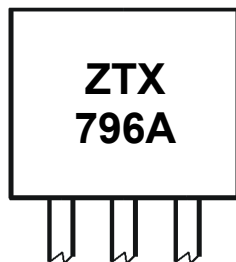
Pin-Out Configuration

Ordering Information (Note 4)

Product	Marking	Package	Leads	Quantity
ZTX796ASTZ	ZTX796A	E-Line	Joggled	2,000 Taped per Ammo Box
ZTX796A	ZTX796A	E-Line	Straight	4,000 Loose in a Box

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



Rounded Face View

ZTX796A = Product Type Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

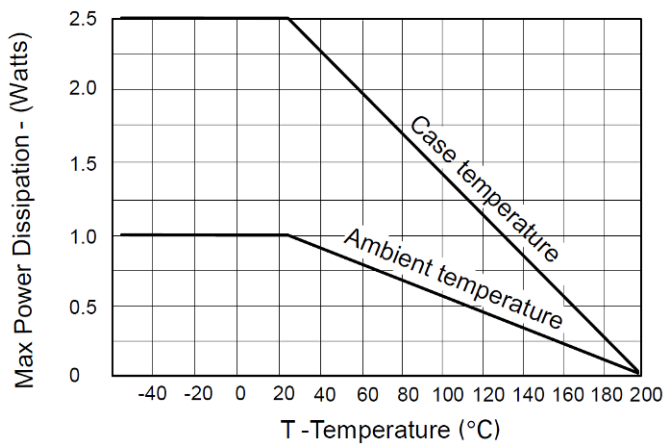
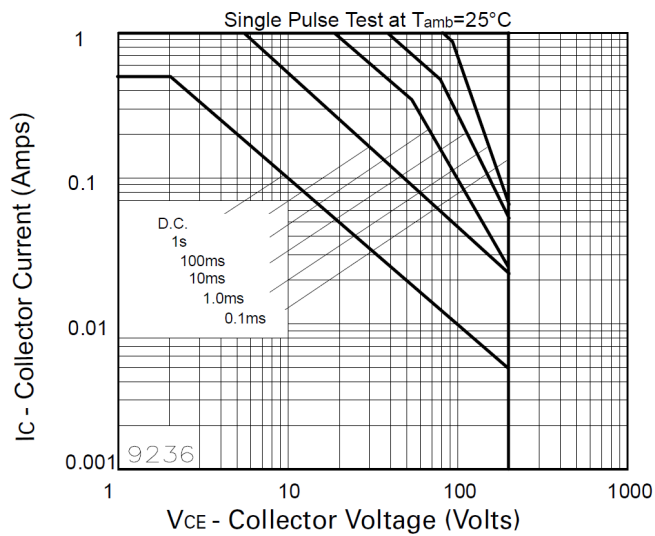
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-200	V
Collector-Emitter Voltage	V _{CEO}	-200	V
Emitter-Base Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-0.5	A
Peak Pulse Current	I _{CM}	-1	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

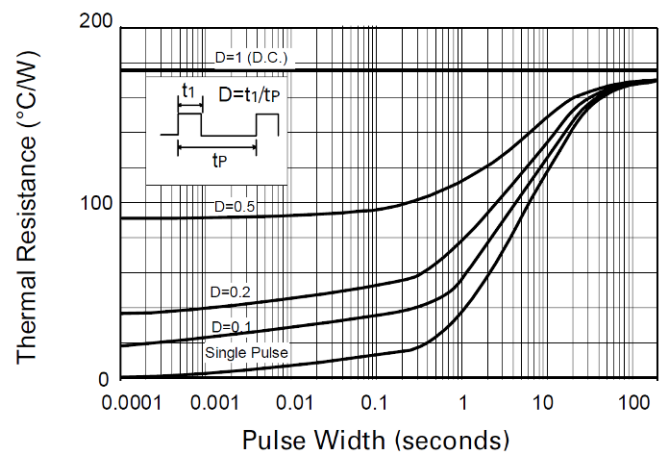
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	1.5	W
Power Dissipation (Note 6)	P _D	1	W
Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	116	°C/W
Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	175	°C/W
Thermal Resistance Junction to Lead (Note 7)	R _{θJL}	70	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +200	°C

- Notes:
- For a through-hole device mounted at the seating plane (2.5mm lead length) with the collector lead on 25mm x 25mm 1oz copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 - Same as note (5), except the device is mounted on minimum recommended pad layout with 12mm lead length from the bottom of package to the board.
 - Thermal resistance from junction to solder-point at the seating plane (2.5mm from the bottom of package along the collector lead).

Thermal Characteristics and Derating Information



Derating curve



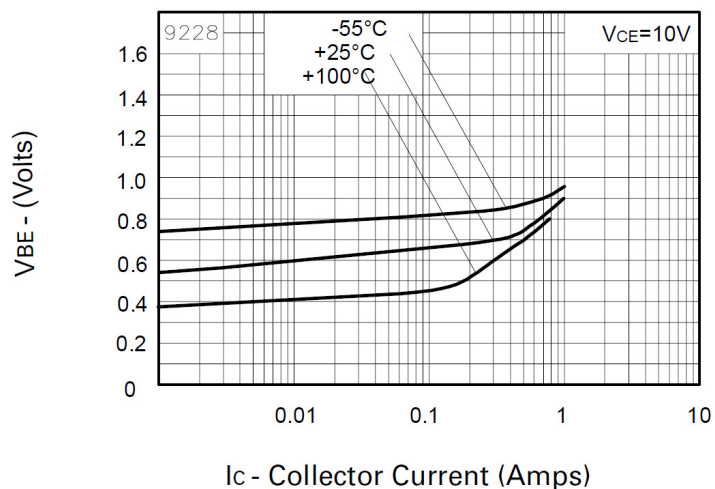
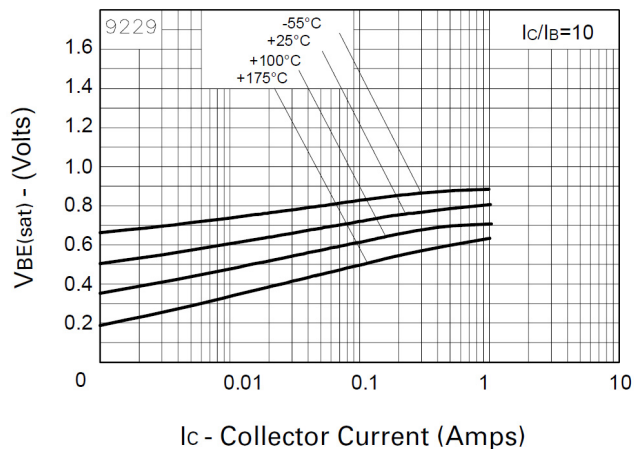
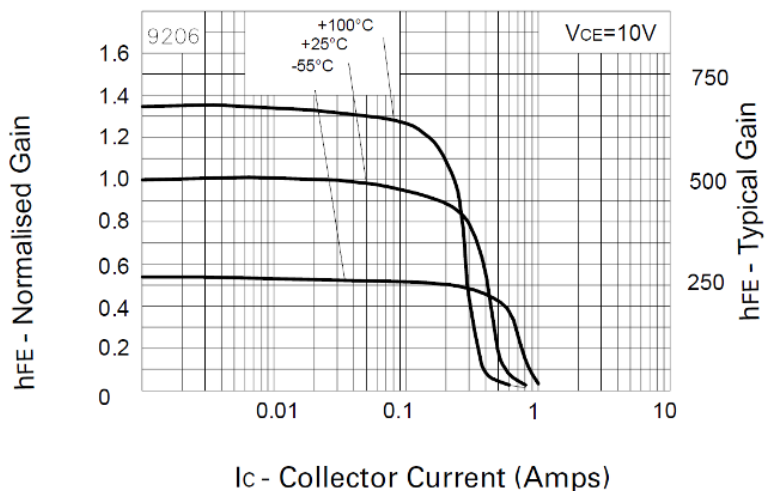
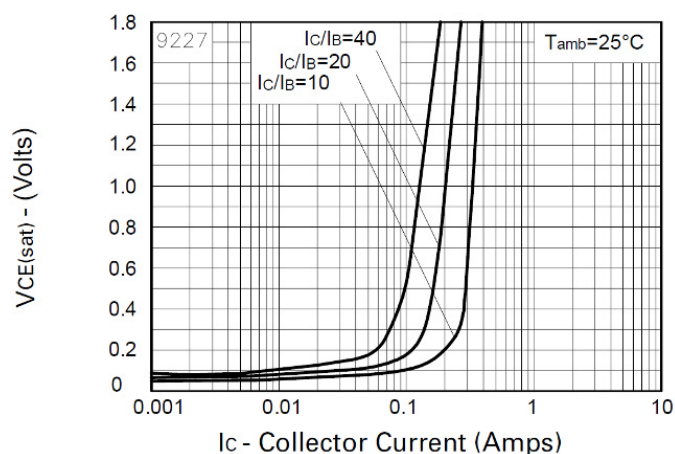
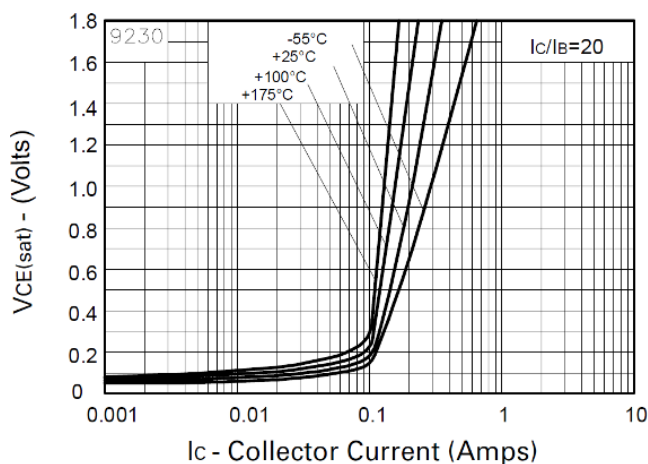
Maximum transient thermal impedance

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV _{CBO}	-200	—	—	V	I _C = -100μA
Collector-Emitter Breakdown Voltage (Note 7)	BV _{CEO}	-200	—	—	V	I _C = -1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	-5	—	—	V	I _E = -100μA
Collector-Emitter Cutoff Current	I _{CES}	—	—	-0.1	μA	V _{CE} = -150V
Collector-Base Cutoff Current	I _{CBO}	—	—	-0.1	μA	V _{CB} = -150V
Emitter-Base Cutoff Current	I _{EBO}	—	—	-0.1	μA	V _{EB} = -4V
Collector-Emitter Saturation Voltage (Note 7)	V _{CE(sat)}	—	—	-0.2	mV	I _C = -50mA, I _B = -2mA
		—	—	-0.3	mV	I _C = -100mA, I _B = -5mA
		—	—	-0.3	mV	I _C = -200mA, I _B = -20mA
Base-Emitter Saturation Voltage (Note 7)	V _{BE(sat)}	—	—	-0.95	mV	I _C = -200mA, I _B = -20mA
Base-Emitter Turn-On Voltage (Note 7)	V _{BE(on)}	—	-0.67	—	mV	I _C = -200mA, V _{CE} = -10V
Static Forward Current Transfer Ratio (Note 7)	h _{FE}	300	—	800	—	I _C = -10mA, V _{CE} = -10V
		300	—	—	—	I _C = -100mA, V _{CE} = -10V
		250	—	—	—	I _C = -300mA, V _{CE} = -10V
		100	—	—	—	I _C = -400mA, V _{CE} = -10V
Transition Frequency	f _T	100	—	—	MHz	V _{CE} = -5V, I _C = -50mA f = 50MHz
Input Capacitance	C _{ibo}	—	225	—	pF	V _{EB} = -0.5V, f = 1MHz
Output Capacitance	C _{obo}	—	12	—	pF	V _{CB} = -10V, f = 1MHz
Switching Times	t _{on}	—	100	—	ns	V _{CC} = -50V, I _C = -100mA
	t _{off}	—	3200	—	ns	I _{B1} = -I _{B2} = -10mA

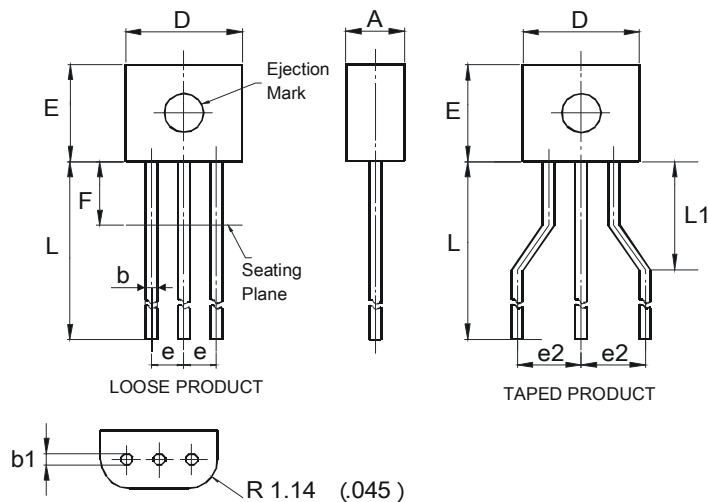
Note: 7. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



E-Line			
Dim	Min	Max	Typ
A	2.16	2.41	—
b	0.41	0.495	—
b1	0.41	0.495	—
D	4.37	4.77	—
E	3.61	4.01	—
e	—	—	1.27
e2	—	—	2.54
F	—	2.50	—
L	13.00	13.97	—
L1	2.50	3.50	—
All Dimensions in mm			

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to voltage spacing between terminals.

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