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

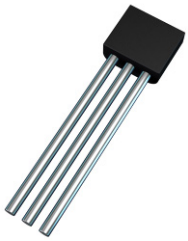
Features

- BV_{CEO} > -200V
- I_C = -0.5A High Continuous Collector Current
- I_{CM} = -1A Peak Pulse Current
- T_J up to 200°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**

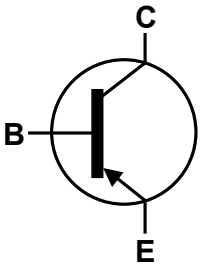
Mechanical Data

- 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 e3
- Weight: 0.159 grams (approximate)

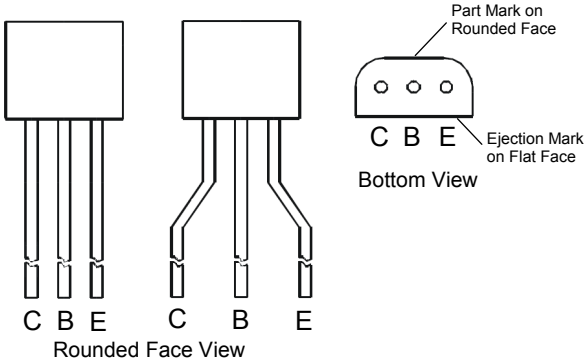
E-Line
(TO-92 Compatible)



Flat Face View



Device Symbol



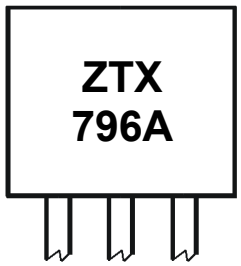
Pin-Out Configuration

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.)

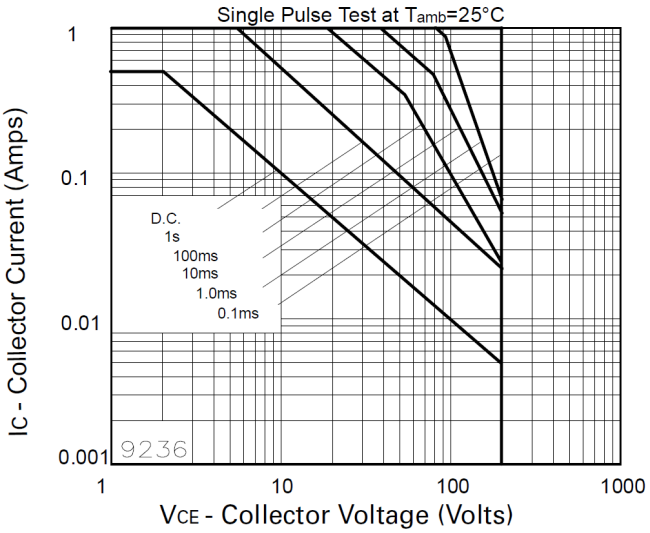
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-200	V
Collector-Emitter Voltage	V_{CEO}	-200	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-0.5	A
Peak Pulse Current	I_{CM}	-1	A

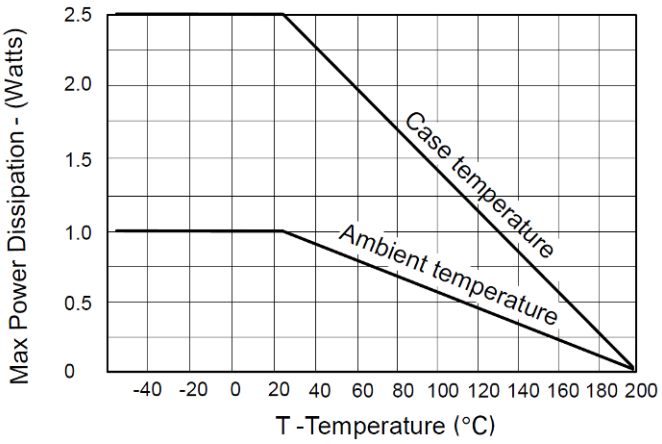
Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

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)	$R_{\theta JA}$	116	°C/W
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	175	°C/W
Thermal Resistance Junction to Lead (Note 7)	$R_{\theta JL}$	70	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +200	°C

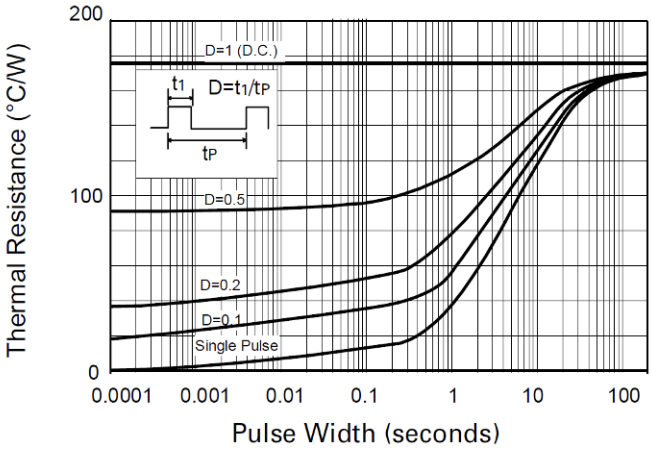
Notes:
5. For a through-hole device mounted at the seating plane (2.5mm lead length) with the collector lead on 25mm x 25mm 1oz copper that is on a single-sided FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
6. Same as note (5), except the device is mounted on minimum recommended pad layout with 12mm lead length from the bottom of package to the board.
7. 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



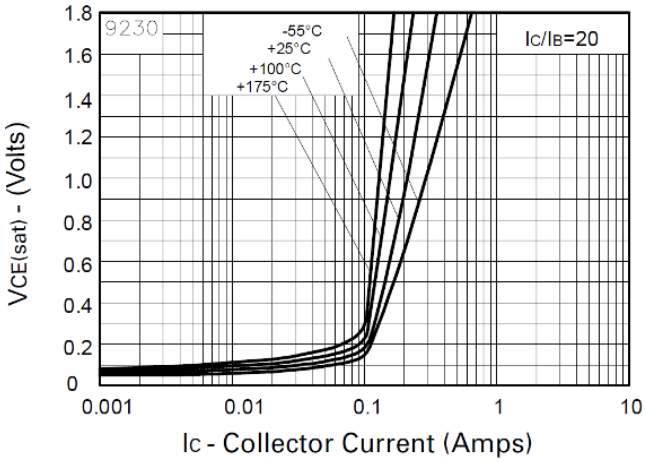
Maximum transient thermal impedance

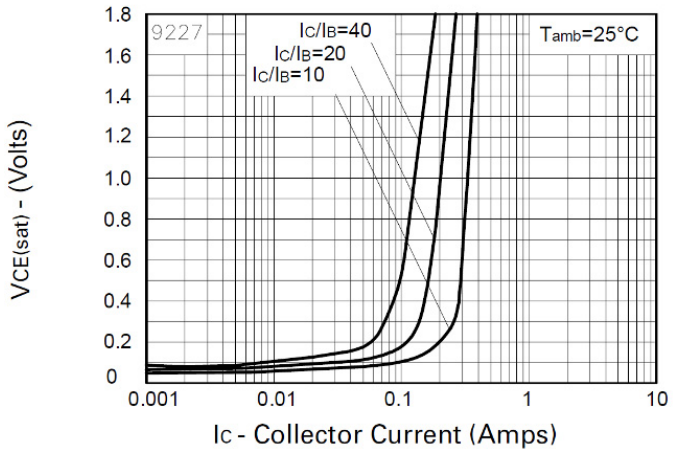
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

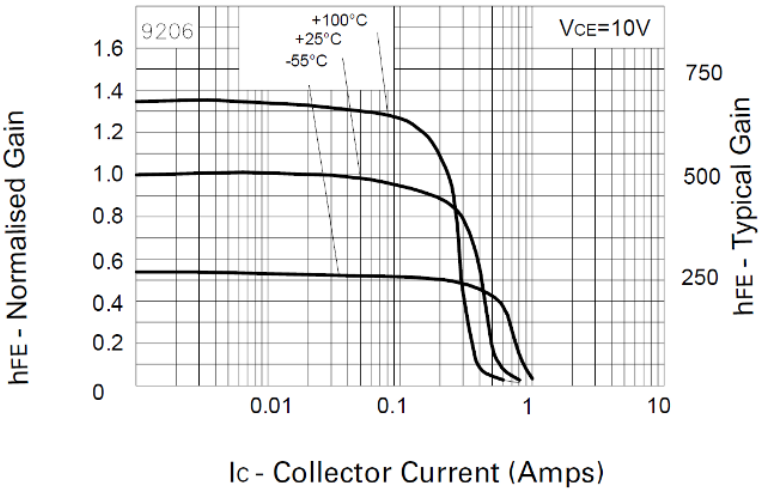
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV_{CBO}	-200	—	—	V	I_C = -100µA
Collector-Emitter Breakdown Voltage (Note 7)	BV_{CEO}	-200	—	—	V	I_C = -1mA
Emitter-Base Breakdown Voltage	BV_{EBO}	-5	—	—	V	I_E = -100µA
Collector-Emitter Cutoff Current	I_{CES}	—	—	-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 -0.3 -0.3	mV mV mV	I_C = -50mA, I_B = -2mA I_C = -100mA, I_B = -5mA 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}	300 300 250 100	— — — —	800 — — —	— — — —	I_C = -10mA, V_{CE} = -10V I_C = -100mA, V_{CE} = -10V I_C = -300mA, V_{CE} = -10V 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

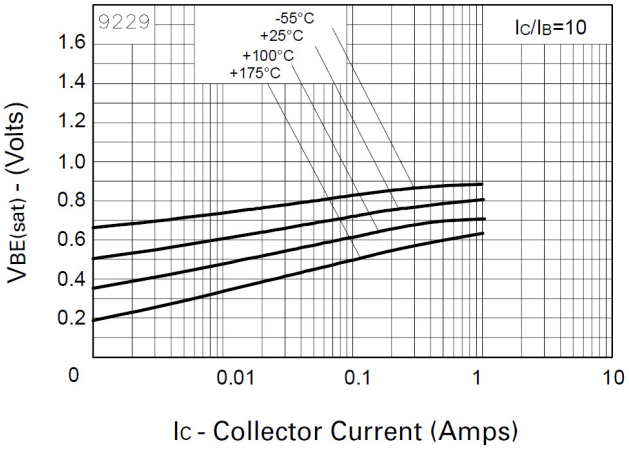
Note: 7. Measured under pulsed conditions. Pulse width ≤ 300 µs. Duty cycle ≤ 2%

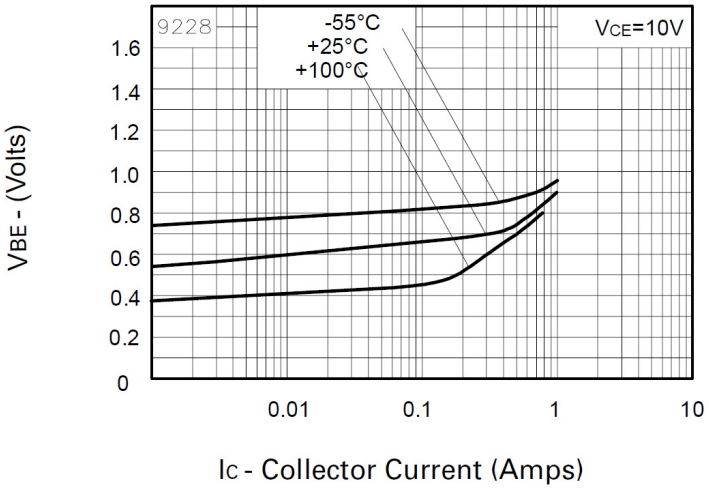
Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)





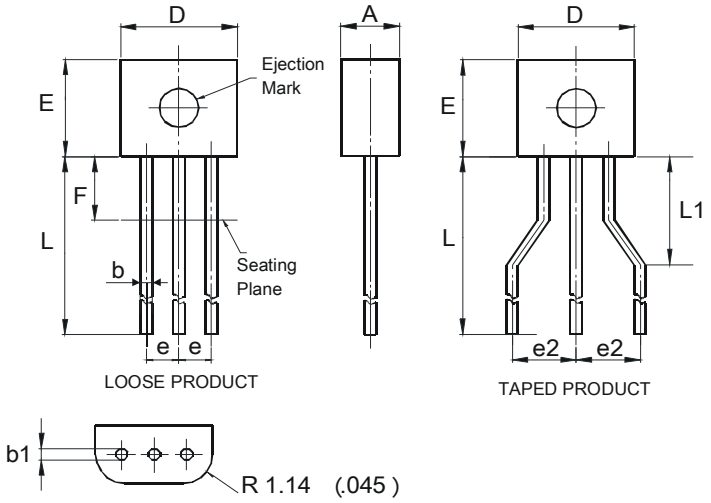






Package Outline Dimensions

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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