


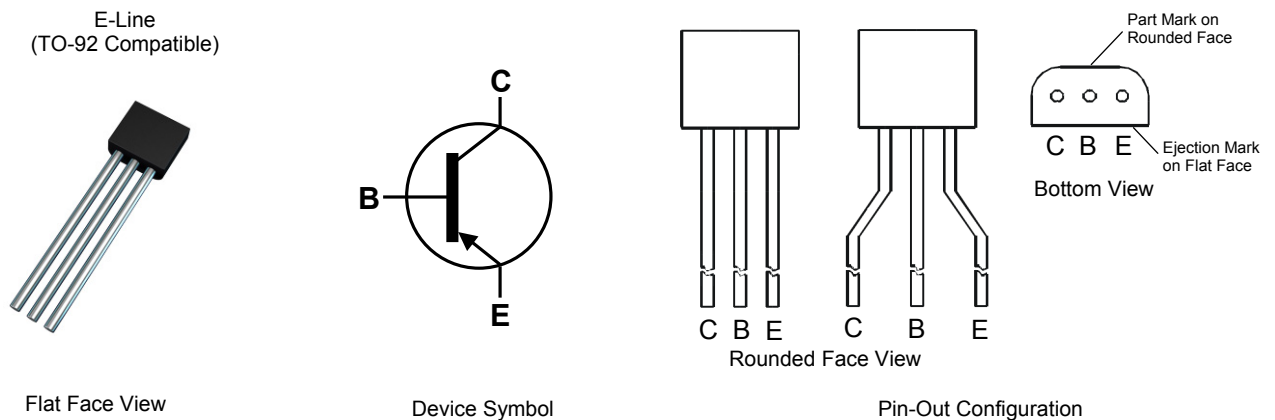
200V PNP MEDIUM POWER HIGH GAIN TRANSISTOR IN E-LINE

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 
- Weight: 0.159 grams (approximate)

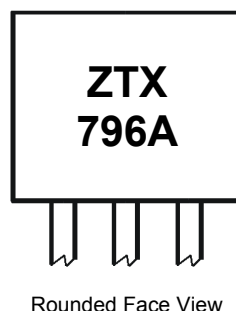


Ordering Information (Note 4)

| 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



ZTX796A = Product Type Marking Code

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

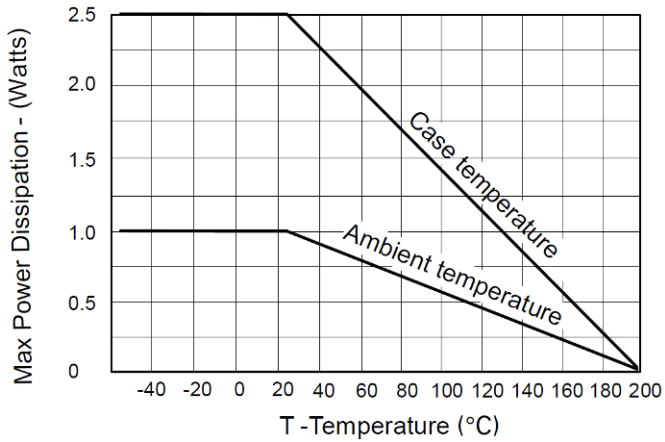
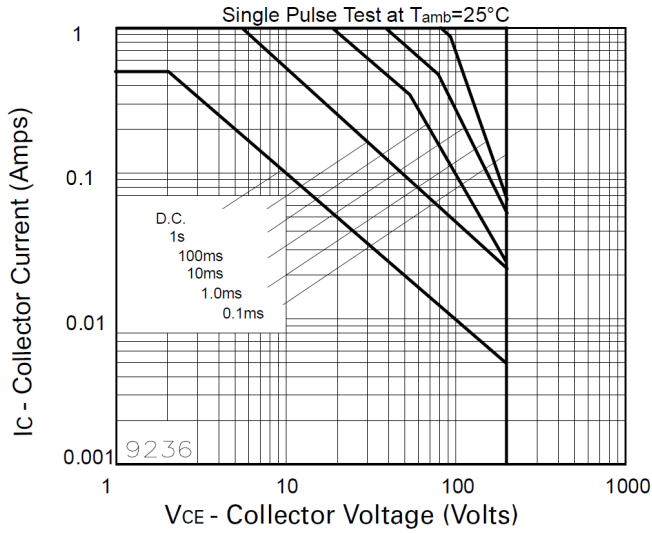
| Characteristic | Symbol | Value | Unit |
|------------------------------|-----------|-------|------|
| Collector-Base Voltage | V_{CBO} | -200 | V |
| Collector-Emitter Voltage | V_{CEO} | -200 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Continuous Collector Current | I_C | -0.5 | A |
| Peak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

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

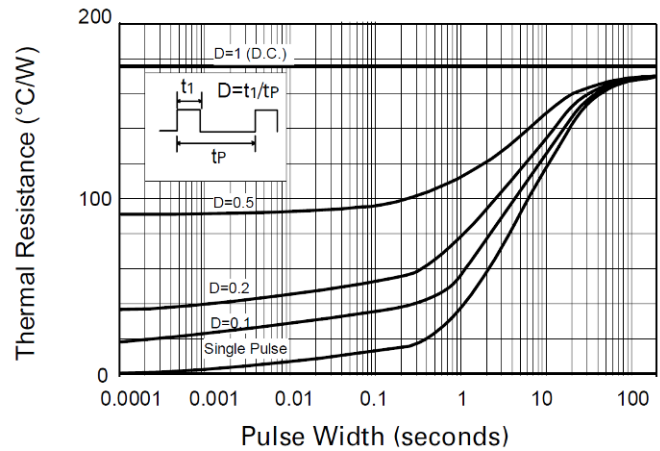
| Characteristic | Symbol | Value | Unit |
|-------------------------------------------------|-----------------|-------------|--------------------|
| Power Dissipation (Note 5) | P_D | 1.5 | W |
| Power Dissipation (Note 6) | P_D | 1 | W |
| Thermal Resistance Junction to Ambient (Note 5) | $R_{\theta JA}$ | 116 | $^\circ\text{C/W}$ |
| Thermal Resistance Junction to Ambient (Note 6) | $R_{\theta JA}$ | 175 | $^\circ\text{C/W}$ |
| Thermal Resistance Junction to Lead (Note 7) | $R_{\theta JL}$ | 70 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +200 | $^\circ\text{C}$ |

- 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



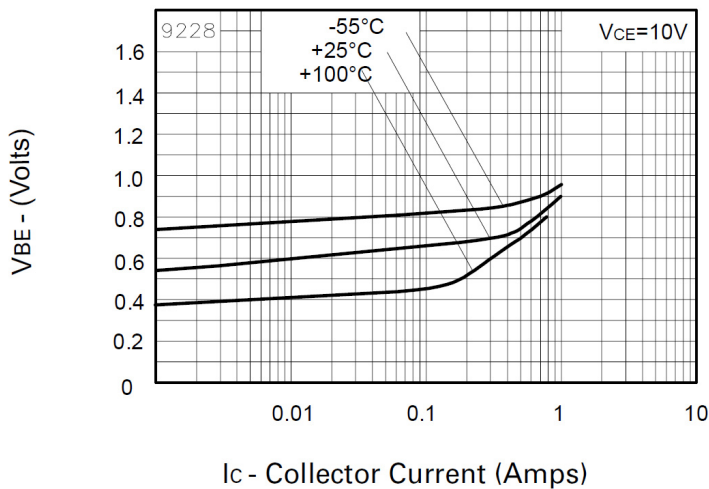
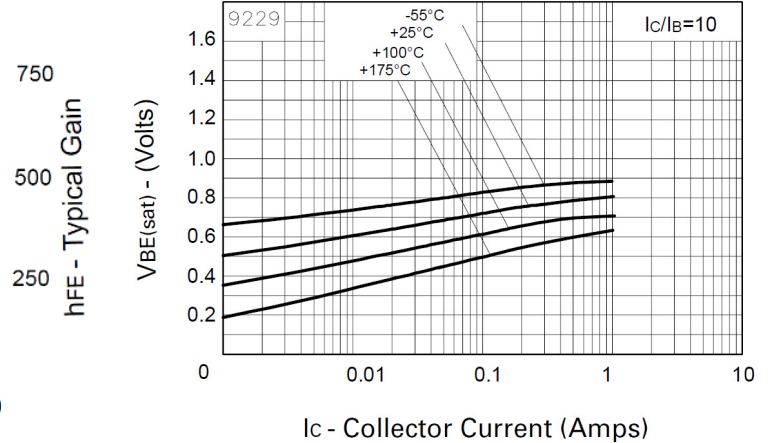
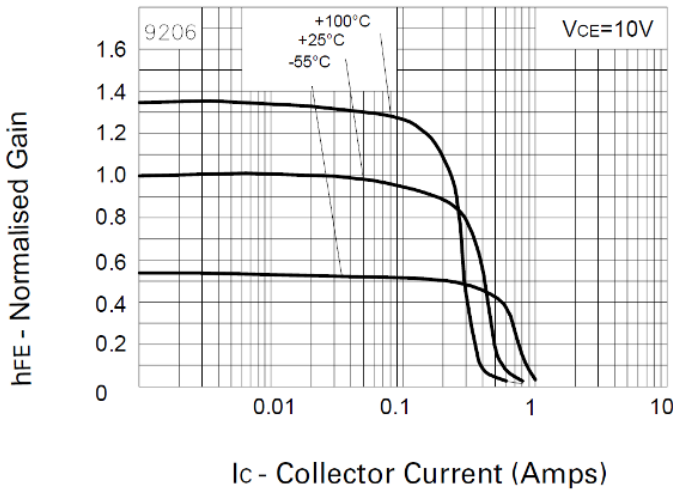
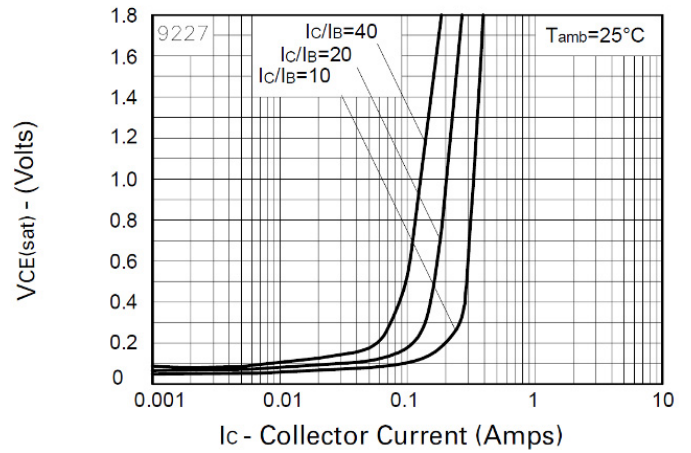
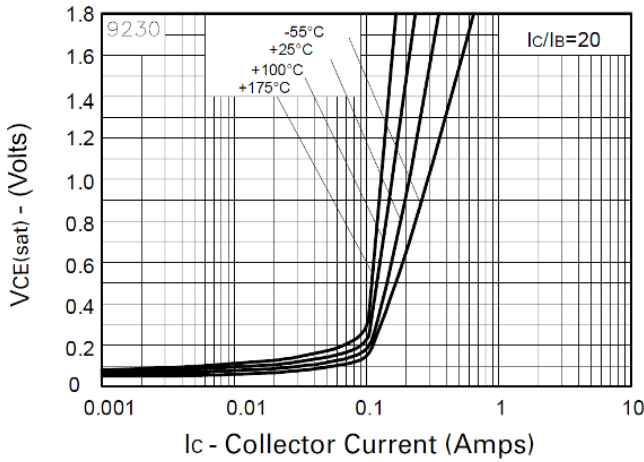
Maximum transient thermal impedance

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 | 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 |

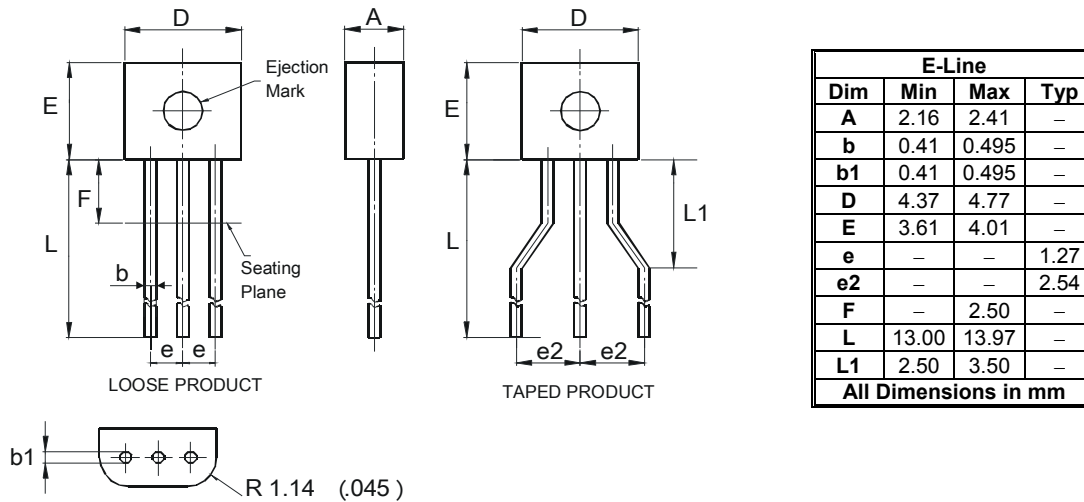
Note: 7. Measured under pulsed conditions. Pulse width ≤ 300 μs. Duty cycle ≤ 2%

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.



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

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