

ZTX551ST0A Datasheet

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| | |
|------------------------------|--|
| DiGi Electronics Part Number | ZTX551ST0A-DG |
| Manufacturer | Diodes Incorporated |
| Manufacturer Product Number | ZTX551ST0A |
| Description | TRANS PNP 60V 1A E-LINE |
| Detailed Description | Bipolar (BJT) Transistor PNP 60 V 1 A 150MHz 1 W Th rough Hole E-Line (TO-92 compatible) |



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Purchase and inquiry

Manufacturer Product Number:

ZTX551STOA

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

60 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

1 W

Operating Temperature:

-55°C ~ 200°C (TJ)

Package / Case:

E-Line-3, Formed Leads

Base Product Number:

ZTX551

Manufacturer:

Diodes Incorporated

Product Status:

Obsolete

Current - Collector (Ic) (Max):

1 A

Vce Saturation (Max) @ Ib, Ic:

350mV @ 15mA, 150mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

50 @ 150mA, 10V

Frequency - Transition:

150MHz

Mounting Type:

Through Hole

Supplier Device Package:

E-Line (TO-92 compatible)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

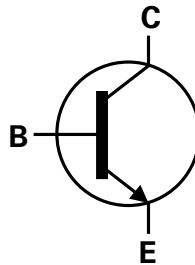
EAR99

Features

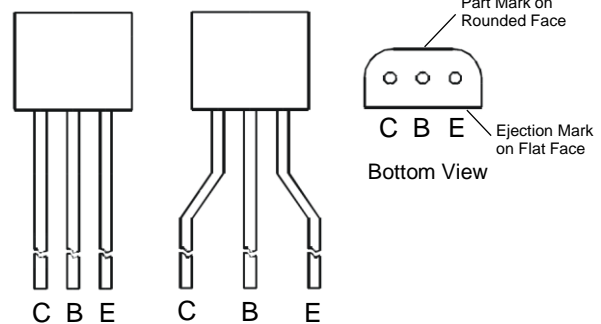
- $BV_{CEO} > -80V$
- $I_C = -1A$ High Continuous Collector Current
- $I_{CM} = -2A$ Peak Pulse Current
- T_J up to $+200^\circ C$ for High-Temperature Operation
- $P_D = 1W$ Power Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

E-Line
(TO-92 Compatible)

Flat Face View



Device Symbol



Rounded Face View

Pinout Configuration

Mechanical Data

- Package: E-Line
- Package 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)

Applications

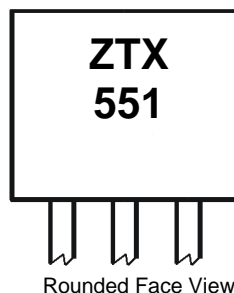
- LCD backlight converters
- Emergency lighting
- DC-DC converters

Ordering Information (Note 4)

| Part Number | Status | Package | Marking | Leads | Packing | |
|-------------|--------------------------|---------|---------|----------|---------|--------------------|
| | | | | | Qty. | Carrier |
| ZTX550 | Obsolete (Use ZTX551) | E-Line | ZTX550 | Straight | 4,000 | Loose in a Box |
| ZTX550STZ | Obsolete (Use ZTX551STZ) | E-Line | ZTX550 | Joggled | 2,000 | Taped per Ammo Box |
| ZTX551 | Released | E-Line | ZTX551 | Straight | 4,000 | Loose in a Box |
| ZTX551STZ | Released | E-Line | ZTX551 | Joggled | 2,000 | Taped per Ammo Box |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



Rounded Face View

ZTX551 = Product Type Marking Code



ZTX550/ZTX551

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

| Characteristic | Symbol | Value | Unit |
|------------------------------|------------------|-------|------|
| Collector-Base Voltage | ZTX550 | -60 | V |
| | ZTX551 | -80 | |
| Collector-Emitter Voltage | ZTX550 | -45 | V |
| | ZTX551 | -65 | |
| Emitter-Base Voltage | V _{EBO} | -5 | V |
| Continuous Collector Current | I _C | -1 | A |
| Peak Pulse Current | I _{CM} | -2 | 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} | 63.75 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +200 | °C |

ESD Ratings (Note 8)

| Characteristic | Symbol | Value | Unit | JEDEC Class |
|--|---------|-------|------|-------------|
| Electrostatic Discharge - Human Body Model | ESD HBM | 4,000 | V | 3A |
| Electrostatic Discharge - Machine Model | ESD MM | 400 | V | 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 weight 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).
 - Refer to JEDEC specification JESD22-A114 and JESD22-A115.



ZTX550/ZTX551

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

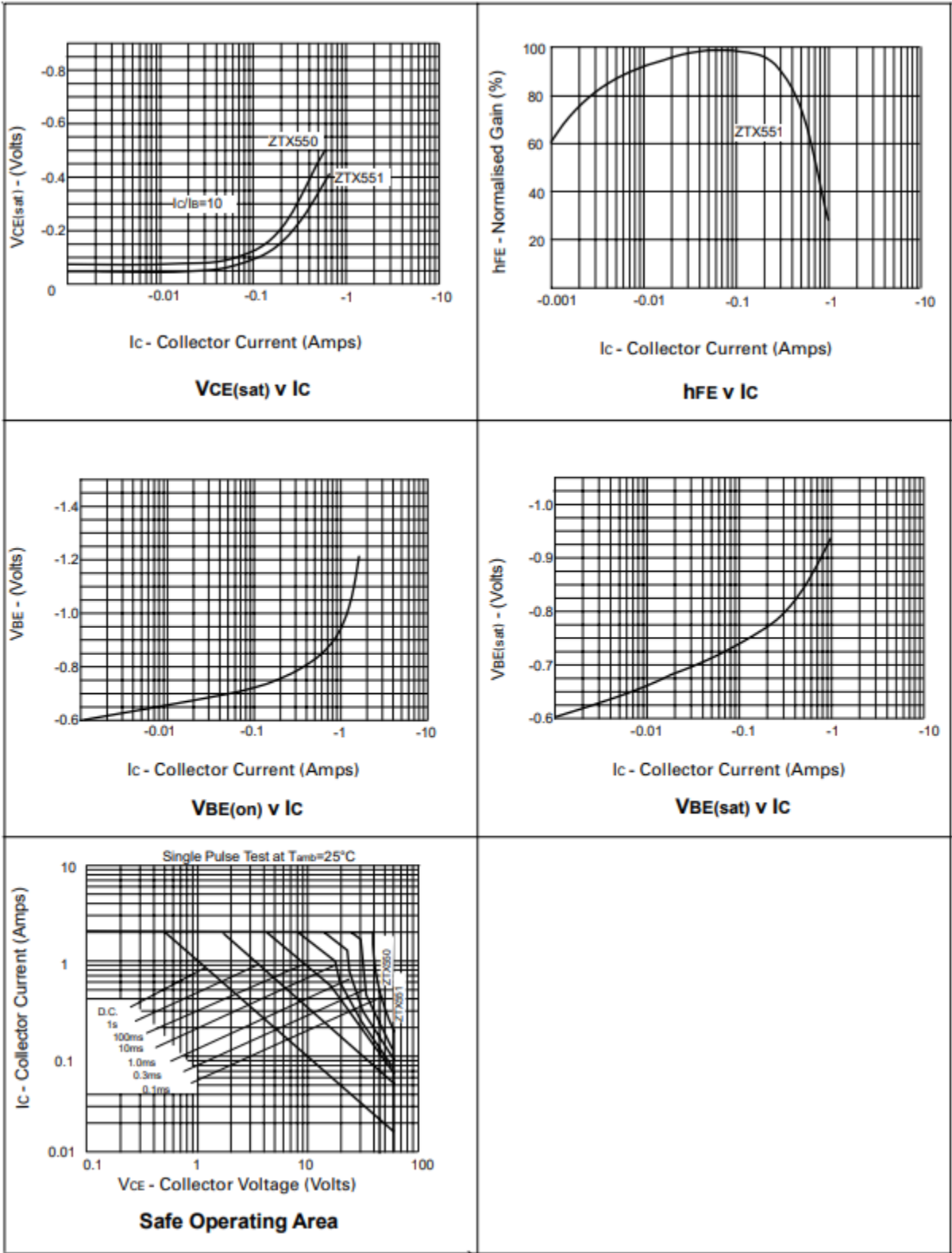
| Characteristic | | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|--------|----------------------|-----|-----|------|------|---|
| Collector-Base Breakdown Voltage | ZTX550 | BV _{CBO} | -60 | — | — | V | I _C = -100μA |
| | ZTX551 | | -80 | | | | |
| Collector-Emitter Breakdown Voltage (Note 9) | ZTX550 | BV _{CEO} | -45 | — | — | V | I _C = -10mA |
| | ZTX551 | | -65 | | | | |
| Emitter-Base Breakdown Voltage | | BV _{EBO} | -5 | — | — | V | I _E = -100μA |
| Collector Cut-off Current | ZTX550 | I _{CBO} | — | — | -0.1 | μA | V _{CB} = -45V |
| | ZTX551 | | | | | | V _{CB} = -65V |
| Emitter Cut-off Current | | I _{EBO} | — | — | -0.1 | μA | V _{EB} = -4V |
| Collector-Emitter Saturation Voltage (Note 9) | ZTX550 | V _{CE(sat)} | — | — | -250 | mV | I _C = -150mA, I _B = -15mA |
| | ZTX551 | | | | -350 | | |
| Base-Emitter Saturation Voltage (Note 9) | | V _{BE(sat)} | — | — | -1.1 | V | I _C = -150mA, I _B = -15mA |
| DC Current Gain (Note 9) | ZTX550 | h _{FE} | 100 | — | 300 | — | I _C = -150mA, V _{CE} = -10V |
| | | | 15 | | | | I _C = -1A, V _{CE} = -10V |
| | ZTX551 | | 50 | — | 150 | — | I _C = -150mA, V _{CE} = -10V |
| | | | 10 | | | | I _C = -1A, V _{CE} = -10V |
| Current Gain-Bandwidth Product (Note 9) | | f _T | — | 150 | — | MHz | V _{CE} = -10V, I _C = -150mA f = 100MHz |

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%



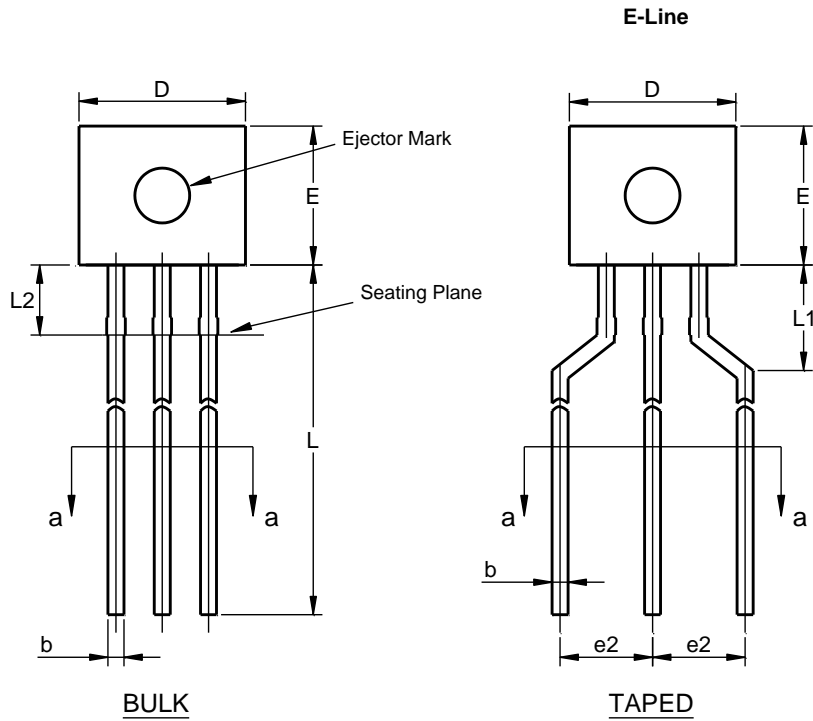
ZTX550/ZTX551

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

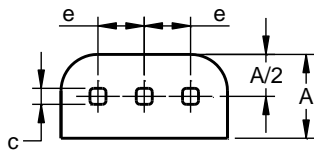


Package Outline Dimensions

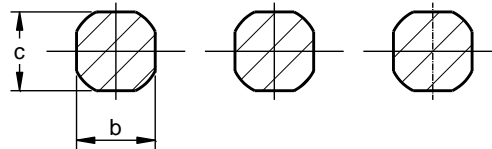
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



| E-Line | | | |
|----------------------|----------|-------|-------|
| Dim | Min | Max | Typ |
| A | 2.16 | 2.41 | 2.28 |
| b | 0.41 | 0.49 | 0.44 |
| c | 0.41 | 0.49 | 0.44 |
| D | 4.37 | 4.77 | 4.57 |
| E | 3.61 | 4.01 | 3.90 |
| e | 1.27 REF | | |
| e2 | 2.54 REF | | |
| L | 13.00 | 13.97 | 13.50 |
| L1 | 2.50 | 3.50 | -- |
| L2 | -- | -- | 2.50 |
| All Dimensions in mm | | | |



Section a-a:



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