

ZXTP5401G 150V, SOT223, PNP High voltage transistor

Summary

 $BV_{CEO} > -150V$ $BV_{EBO} > -5V$ $I_{C(cont)} = -600mA$ $P_D = 2W$ Complementary part number ZXTN5551G



Description

A high voltage PNP transistor in a surface mount package

Features

- 150V rating
- SOT223 package

Applications

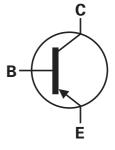
• High voltage amplification

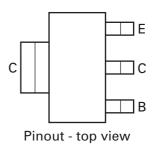
Ordering information

| Device | Reel size (inches) | Tape width (mm) | Quantity per reel |
|-------------|-----------------------|--------------------|----------------------|
| ZXTP5401GTA | 7 | 12 | 1000 |
| ZXTP5401GTC | 13 | 12 | 4000 |

Device marking

ZXTP 5401





Absolute maximum ratings

| Parameter | Symbol | Limit | Unit |
|--|-----------------------------------|------------|-------|
| Collector-base voltage | V _{CBO} | -160 | V |
| Collector-emitter voltage | V _{CEO} | -150 | V |
| Emitter-base voltage | V _{EBO} | -5 | V |
| Continuous collector current ^(a) | ۱ _C | -600 | mA |
| Peak collector current | ۱ _C | -2 | А |
| Power dissipation at $T_A = 25^{\circ}C^{(a)}$ | P _D | 2 | W |
| Linear derating factor | | 16 | mW/°C |
| Operating and storage temperature range | T _j , T _{stg} | -55 to 150 | °C |

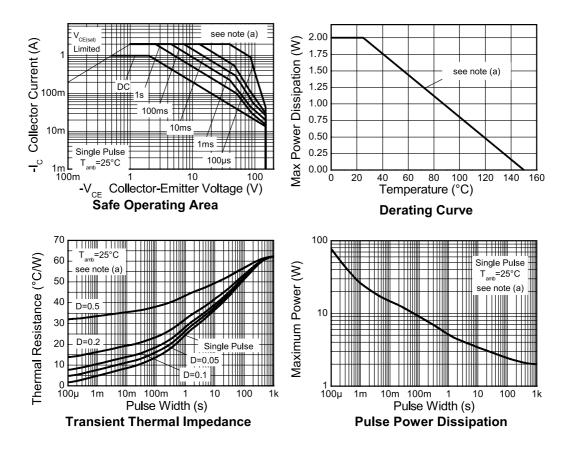
Thermal resistance

| Parameter | Symbol | Limit | Unit |
|------------------------------------|----------------|-------|------|
| Junction to ambient ^(a) | R_{\ThetaJA} | 62.5 | °C/W |

NOTES:

(a) For a device surface mounted on 50mm x 50mm x 1.6mm FR4 PCB with high coverage of single sided 1oz weight copper, in still air conditions.

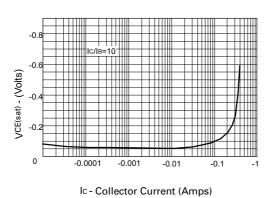
Typical characteristics



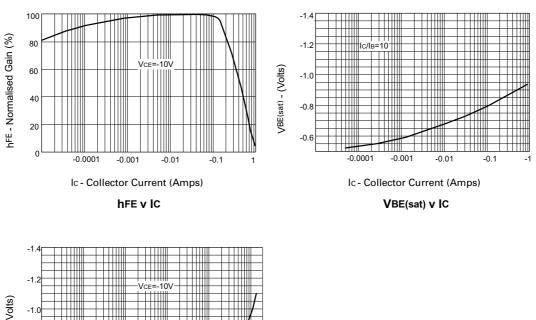
| Parameter | Symbol | Min. | Тур. | Max. | Unit | Conditions |
|--|----------------------|------|------|-------|------|--|
| Collector-base breakdown voltage | BV _{CBO} | -160 | -270 | | V | I _C = -100μA, |
| Collector-emitter breakdown voltage (base open) | BV _{CEO} | -150 | -240 | | V | I _C = -1mA * |
| Emitter-base breakdown voltage | BV _{EBO} | -5 | -8.1 | | V | I _E = -10μA |
| Collector cut-off current | I _{CBO} | | <-1 | -50 | nA | V _{CB} = -120V |
| | | | | -50 | μA | V _{CB} = -120V, T _{amb} = 100°C |
| Collector-emitter saturation | V _{CE(sat)} | | -50 | -200 | mV | I _C = -10mA, I _B = -1mA * |
| voltage | | | -70 | -500 | mV | I _C = -50mA, I _B = -5mA * |
| Base-emitter saturation | V _{BE(sat)} | | -700 | -1000 | mV | I _C = -10mA, I _B = -1mA * |
| voltage | | | -750 | -1000 | mV | I _C = -50mA, I _B = -5mA * |
| Static forward current transfer | h _{FE} | 50 | 135 | | | I _C = -1mA, V _{CE} = -5V * |
| ratio | | 60 | 135 | 240 | | $I_{C} = -10 \text{mA}, V_{CE} = -5 \text{V} *$ |
| | | 50 | 130 | | | I_{C} = -50mA, V_{CE} = -5V * |
| Transition frequency | f _T | | 100 | | MHz | I _C = -10mA, V _{CE} = -10V f = 100MHz |
| Output capacitance | C _{OBO} | | | 6 | pF | V _{CB} = -10V, f = 1MHz * |
| Delay time | t _(d) | | 386 | | ns | V _{CC} = -50V. I _C = -100mA, |
| Rise time | t _(r) | | 202 | | ns | I _{B1} = I _{B2} = -10mA. |
| Storage time | t _(s) | | 1720 | | ns | |
| Fall time | t _(f) | | 275 | | ns | |

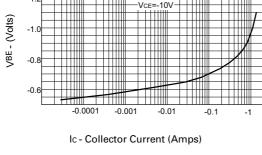
Electrical characteristics (at $T_{amb} = 25^{\circ}C$ unless otherwise stated)

Characteristics



VCE(sat) v IC

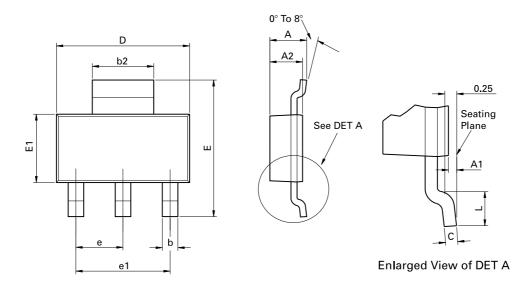






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Package outline - SOT223



Conforms to JEDEC TO-261 AA Issue B

| Dim. | Millin | neters | Inc | hes | Dim. | Millimeters | | Inches | |
|------|--------|--------|--------|--------|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| А | - | 1.80 | - | 0.071 | D | 6.30 | 6.70 | 0.248 | 0.264 |
| A1 | 0.02 | 0.10 | 0.0008 | 0.004 | е | 2.30 | BSC | 0.090 | 5 BSC |
| A2 | 1.55 | 1.65 | 0.0610 | 0.0649 | e1 | 4.60 | BSC | 0.181 | BSC |
| b | 0.66 | 0.84 | 0.026 | 0.033 | E | 6.70 | 7.30 | 0.264 | 0.287 |
| b2 | 2.90 | 3.10 | 0.114 | 0.122 | E1 | 3.30 | 3.70 | 0.130 | 0.146 |
| С | 0.23 | 0.33 | 0.009 | 0.013 | L | 0.90 | - | 0.355 | - |

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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