

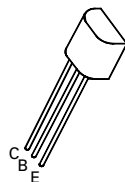
NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

ZTX458

ISSUE 2 – MARCH 1994

FEATURES

- * 400 Volt V_{CEO}
- * 0.5 Amp continuous current
- * $P_{tot} = 1$ Watt



**E-Line
TO92 Compatible**

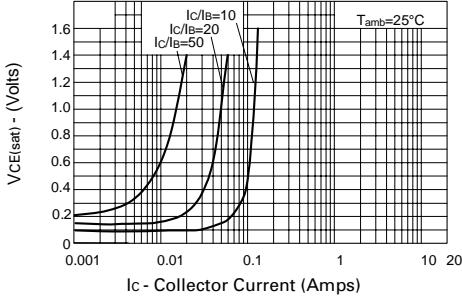
ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|----------------|-------------|-------------|
| Collector-Base Voltage | V_{CBO} | 400 | V |
| Collector-Emitter Voltage | V_{CEO} | 400 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Continuous Collector Current | I_C | 300 | mA |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | P_{tot} | 1 | W |
| Operating and Storage Temperature Range | $T_j; T_{stg}$ | -55 to +200 | $^{\circ}C$ |

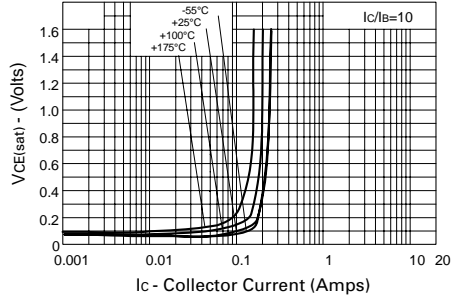
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|----------------|------------------|------|------------|------|--|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 400 | | | V | $I_C = 100\mu A$ |
| Collector-Emitter Breakdown Voltage | $V_{CEO(sus)}$ | 400 | | | V | $I_C = 10mA^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | | V | $I_E = 100\mu A$ |
| Collector Cut-Off Current | I_{CBO} | | | 100 | nA | $V_{CB} = 320V$ |
| Collector Cut-Off Current | I_{CES} | | | 100 | nA | $V_{CE} = 320V$ |
| Emitter Cut-Off Current | I_{EBO} | | | 100 | nA | $V_{EB} = 4V$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | 0.2 0.5 | V | $I_C = 20mA, I_B = 2mA$ $I_C = 50mA, I_B = 6mA$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | | 0.9 | V | $I_C = 50mA, I_B = 5mA$ |
| Base-Emitter Turn On Voltage | $V_{BE(on)}$ | | | 0.9 | V | $I_C = 50mA, V_{CE} = 10V$ |
| Static Forward Current Transfer Ratio | h_{FE} | 100 100 15 | | 300 | | $I_C = 1mA, V_{CE} = 10V$ $I_C = 50mA, V_{CE} = 10V$ $I_C = 100mA, V_{CE} = 10V^*$ |
| Transition Frequency | f_T | 50 | | | MHz | $I_C = 10mA, V_{CE} = 20V$ $f = 20MHz$ |
| Collector-Base Breakdown Voltage | C_{obo} | | | 5 | pF | $V_{CB} = 20V, f = 1MHz$ |

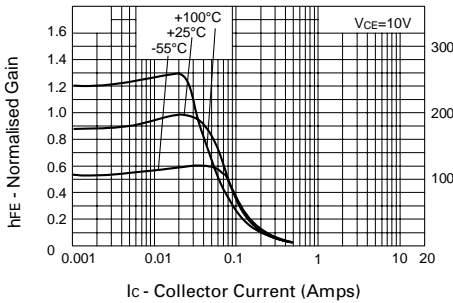
TYPICAL CHARACTERISTICS



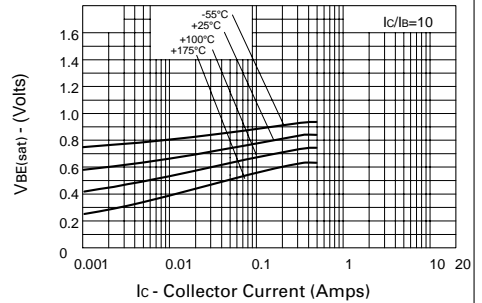
$V_{CE(sat)}$ v I_C



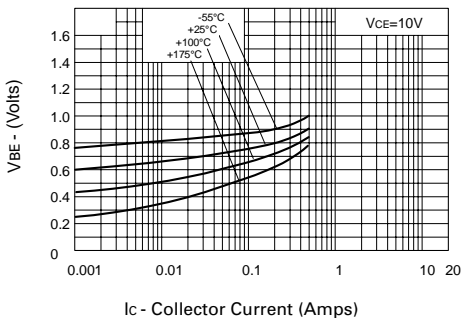
$V_{CE(sat)}$ v I_C



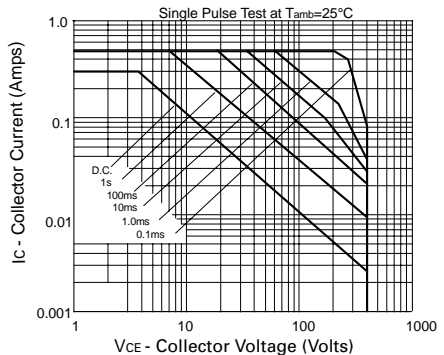
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area