

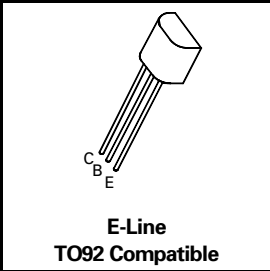
NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

ZTX450
ZTX451

ISSUE 2 – MARCH 1994

FEATURES

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



ABSOLUTE MAXIMUM RATINGS.

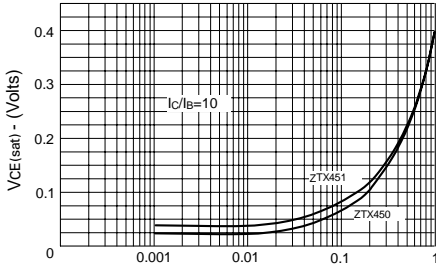
| PARAMETER | SYMBOL | ZTX450 | ZTX451 | UNIT |
|--|----------------|-------------|--------|-------------|
| Collector-Base Voltage | V_{CBO} | 60 | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 45 | 60 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | | V |
| Peak Pulse Current | I_{CM} | 2 | | A |
| Continuous Collector Current | I_C | 1 | | A |
| 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 | ZTX450 | | ZTX451 | | UNIT | CONDITIONS. |
|---------------------------------------|----------------|-----------|------|----------|------|--------------------|---|
| | | MIN. | MAX. | MIN. | MAX. | | |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 60 | | 80 | | V | $I_C = 100\mu A$ |
| Collector-Emitter Sustaining Voltage | $V_{CEO(sus)}$ | 45 | | 60 | | V | $I_C = 10mA^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | 5 | | V | $I_E = 100\mu A$ |
| Collector Cut-Off Current | I_{CBO} | | 0.1 | | 0.1 | μA μA | $V_{CB} = 45V$ $V_{CB} = 60V$ |
| Emitter Cut-Off Current | I_{EBO} | | 0.1 | | 0.1 | μA | $V_{EB} = 4V$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 0.25 | | 0.35 | V | $I_C = 150mA, I_B = 15mA^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | 1.1 | | 1.1 | V | $I_C = 150mA, I_B = 15mA^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 100 15 | 300 | 50 10 | 150 | | $I_C = 150mA, V_{CE} = 10V^*$ $I_C = 1A, V_{CE} = 10V^*$ |
| Transition Frequency | f_T | 150 | | 150 | | MHz | $I_C = 50mA, V_{CE} = 10V$ $f = 100MHz$ |
| Output Capacitance | C_{obo} | | 15 | | 15 | pF | $V_{CB} = 10V, f = 1MHz$ |

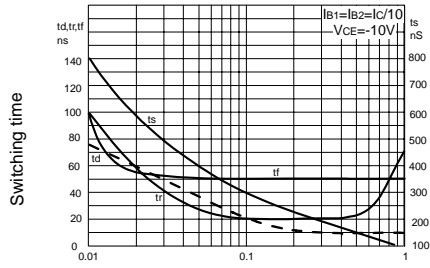
ZTX450 ZTX451

TYPICAL CHARACTERISTICS



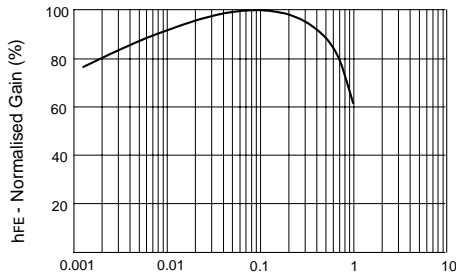
IC - Collector Current (Amps)

VCE(sat) v IC



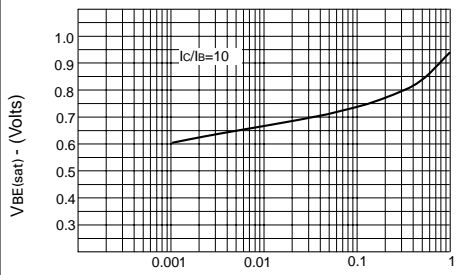
IC - Collector Current (Amps)

Typical Switching Speeds



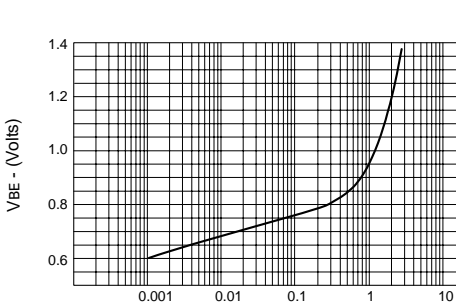
IC - Collector Current (Amps)

hFE v IC



IC - Collector Current (Amps)

VBE(sat) v IC



IC - Collector Current (Amps)

VBE(on) v IC



Safe Operating Area