

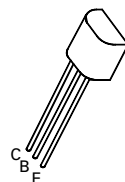
NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTORS

ISSUE 2 – JULY 94

ZTX656 ZTX657

FEATURES

- * 300 Volt V_{CE0}
- * 0.5 Amp continuous current
- * $P_{tot}=1$ Watt



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

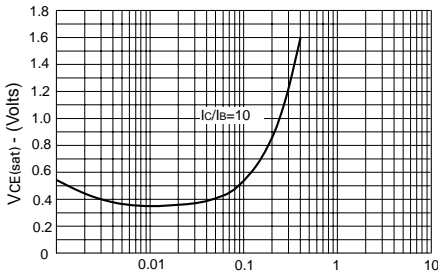
| PARAMETER | SYMBOL | ZTX656 | ZTX657 | UNIT |
|--|----------------|-------------|--------|-------------|
| Collector-Base Voltage | V_{CBO} | 200 | 300 | V |
| Collector-Emitter Voltage | V_{CEO} | 200 | 300 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | | V |
| Peak Pulse Current | I_{CM} | 1 | | A |
| Continuous Collector Current | I_C | 0.5 | | 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 $T_{amb} = 25^{\circ}C$ unless otherwise stated).

| PARAMETER | SYMBOL | ZTX656 | | ZTX657 | | UNIT | CONDITIONS. |
|---------------------------------------|---------------|----------|------|----------|------|----------|---|
| | | MIN. | MAX. | MIN. | MAX. | | |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 200 | | 300 | | V | $I_C=100\mu A, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 200 | | 300 | | V | $I_C=10mA, I_B=0^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | 5 | | V | $I_E=100\mu A, I_C=0$ |
| Collector Cut-Off Current | I_{CBO} | | 100 | | 100 | nA nA | $V_{CB}=160V, I_E=0$ $V_{CB}=200V, I_E=0$ |
| Emitter Cut-Off Current | I_{EBO} | | 100 | | 100 | nA | $V_{EB}=3V, I_C=0$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 0.5 | | 0.5 | V | $I_C=100mA, I_B=10mA^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | 1 | | 1 | V | $I_C=100mA, I_B=10mA^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | 1 | | 1 | V | $I_C=100mA, V_{CE}=5V^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 50 40 | | 50 40 | | | $I_C=100mA, V_{CE}=5V$ $I_C=10mA, V_{CE}=5V$ |
| Transition Frequency | f_T | 30 | | 30 | | MHz | $I_C=10mA, V_{CE}=20V$ $f=20MHz$ |

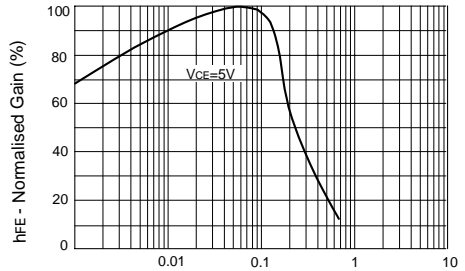
ZTX656 ZTX657

TYPICAL CHARACTERISTICS



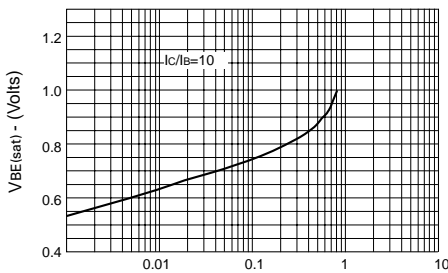
I_C - Collector Current (Amps)

$V_{CE(sat)}$ v I_C



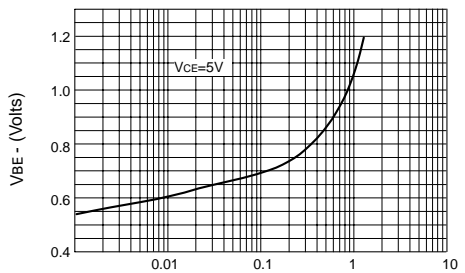
I_C - Collector Current (Amps)

h_{FE} v I_C



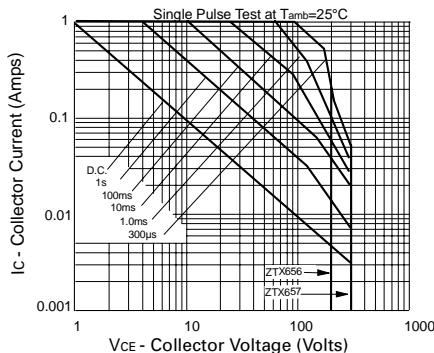
I_C - Collector Current (Amps)

$V_{BE(sat)}$ v I_C

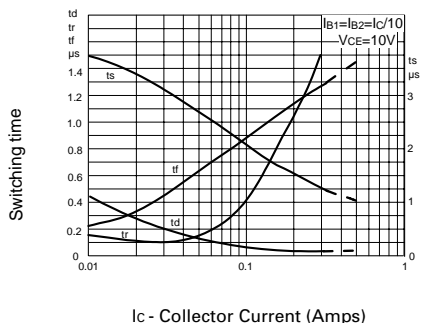


I_C - Collector Current (Amps)

$V_{BE(on)}$ v I_C



Safe Operating Area



Switching Speeds