

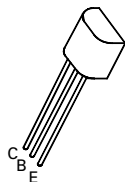
# NPN SILICON PLANAR MEDIUM POWER HIGH VOLTAGE TRANSISTOR

## ZTX457

ISSUE 2 – MARCH 1994

### FEATURES

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



E-Line  
TO92 Compatible

### ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                       | SYMBOL         | VALUE       | UNIT             |
|---|----------------|-------------|------------------|
| Collector-Base Voltage                          | $V_{CBO}$      | 300         | V                |
| Collector-Emitter Voltage                       | $V_{CEO}$      | 300         | V                |
| Emitter-Base Voltage                            | $V_{EBO}$      | 5           | V                |
| Peak Pulse Current                              | $I_{CM}$       | 1           | A                |
| Continuous Collector Current                    | $I_C$          | 500         | mA               |
| Power Dissipation at $T_{amb}=25^\circ\text{C}$ | $P_{tot}$      | 1           | W                |
| Operating and Storage Temperature Range         | $T_j; T_{stg}$ | -55 to +200 | $^\circ\text{C}$ |

### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

| PARAMETER                             | SYMBOL         | MIN.           | TYP. | MAX.      | UNIT                | CONDITIONS.   |
|---------------------------------------|----------------|----------------|------|-----------|---------------------|---|
| Collector-Base Breakdown Voltage      | $V_{(BR)CBO}$  | 300            |      |           | V                   | $I_C=100\mu\text{A}, I_E=0$   |
| Collector-Emitter Breakdown Voltage   | $V_{CEO(sus)}$ | 300            |      |           | V                   | $I_C=10\text{mA}, I_B=0^*$  |
| Emitter-Base Breakdown Voltage        | $V_{(BR)EBO}$  | 5              |      |           | V                   | $I_E=100\mu\text{A}$  |
| Collector Cut-Off Current             | $I_{CBO}$      |                |      | 100<br>10 | nA<br>$\mu\text{A}$ | $V_{CB}=200\text{V}$<br>$V_{CB}=200\text{V}, T_{amb}=100^\circ\text{C}$   |
| Emitter Cut-Off Current               | $I_{EBO}$      |                |      | 100       | nA                  | $V_{EB}=4\text{V}$  |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$  |                |      | 0.3       | V                   | $I_C=100\text{mA}, I_B=10\text{mA}^*$   |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$  |                |      | 1         | V                   | $I_C=100\text{mA}, I_B=10\text{mA}^*$   |
| Base-Emitter Turn On Voltage          | $V_{BE(on)}$   |                |      | 1         | V                   | $I_C=100\text{mA}, V_{CE}=10\text{V}^*$   |
| Static Forward Current Transfer Ratio | $h_{FE}$       | 50<br>50<br>25 |      | 300       |                     | $I_C=10\text{mA}, V_{CE}=10\text{V}^*$<br>$I_C=50\text{mA}, V_{CE}=10\text{V}^*$<br>$I_C=100\text{mA}, V_{CE}=10\text{V}^*$ |
| Transition Frequency                  | $f_T$          | 75             |      |           | MHz                 | $I_C=50\text{mA}, V_{CE}=10\text{V}$<br>$f=20\text{MHz}$  |

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

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