

# NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

ISSUE 1 – FEB 94

## FEATURES

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

## APPLICATIONS

- \* Telephone dialler circuits
- \* Video output drivers

REFER TO ZTX657 FOR GRAPHS

## ABSOLUTE MAXIMUM RATINGS.

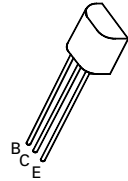
| PARAMETER                                         | SYMBOL         | VALUE       | UNIT             |
|---------------------------------------------------|----------------|-------------|------------------|
| Collector-Base Voltage                            | $V_{CBO}$      | 300         | V      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

| 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   | $V_{(BR)CEO}$ | 300      |      |      | V    | $I_C = 10\text{mA}$ , $I_B = 0^*$                                                             |
| Emitter-Base Breakdown Voltage        | $V_{(BR)EBO}$ | 5        |      |      | V    | $I_E = 100\mu\text{A}$ , $I_C = 0$                                                            |
| Collector Cut-Off Current             | $I_{CBO}$     |          |      | 100  | nA   | $V_{CB} = 200\text{V}$ , $I_E = 0$                                                            |
| Emitter Cut-Off Current               | $I_{EBO}$     |          |      | 100  | nA   | $V_{EB} = 3\text{V}$ , $I_C = 0$                                                              |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$ |          |      | 0.5  | 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    | $I_C = 100\text{mA}$ , $V_{CE} = 5\text{V}^*$                                                 |
| Static Forward Current Transfer Ratio | $h_{FE}$      | 40<br>50 |      |      |      | $I_C = 10\text{mA}$ , $V_{CE} = 5\text{V}^*$<br>$I_C = 100\text{mA}$ , $V_{CE} = 5\text{V}^*$ |
| Transition Frequency                  | $f_T$         | 30       |      |      | MHz  | $I_C = 10\text{mA}$ , $V_{CE} = 20\text{V}$<br>$f = 20\text{MHz}$                             |
| Output Capacitance                    | $C_{obo}$     |          |      | 20   | pF   | $V_{CB} = 20\text{V}$ , $f = 1\text{MHz}$                                                     |

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

# FXT657



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