

DISCONTINUED
PLEASE USE ZTX653

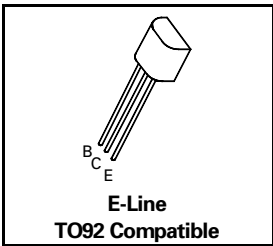
NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

FXT653

ISSUE 1 – MARCH 94

FEATURES

- * 100 Volt V_{CE0}
- * 2 Amps continuous current
- * Low saturation voltage
- * $P_{tot} = 1$ Watt



REFER TO ZTX653 FOR GRAPHS

ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|----------------|-------------|-------------|
| Collector-Base Voltage | V_{CBO} | 120 | V |
| Collector-Emitter Voltage | V_{CEO} | 100 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Peak Pulse Current | I_{CM} | 6 | A |
| Continuous Collector Current | I_C | 2 | 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 | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|---------------|-----------------------|-------------------------|------------|--------------------|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 120 | | | V | $I_C=100\mu A, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 100 | | | V | $I_C=10mA, I_B=0^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | | V | $I_E=100\mu A, I_C=0$ |
| Collector Cut-Off Current | I_{CBO} | | | 0.1 10 | μA μA | $V_{CB}=100V, I_E=0$ $V_{CB}=100V, T_{amb}=100^{\circ}C$ |
| Emitter Cut-Off Current | I_{EBO} | | | 0.1 | μA | $V_{EB}=4V, I_C=0$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 0.13 0.23 | 0.3 0.5 | V V | $I_C=1A, I_B=100mA^*$ $I_C=2A, I_B=200mA^*$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | 0.9 | 1.25 | V | $I_C=1A, I_B=100mA^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | 0.8 | 1 | V | $I_C=1A, V_{CE}=2V^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 70 100 55 25 | 200 200 110 55 | 300 | | $I_C=50mA, V_{CE}=2V^*$ $I_C=500mA, V_{CE}=2V^*$ $I_C=1A, V_{CE}=2V^*$ $I_C=2A, V_{CE}=2V^*$ |
| Transition Frequency | f_T | 140 | 175 | | MHz | $I_C=100mA, V_{CE}=5V$ $f=100MHz$ |
| Output Capacitance | C_{obo} | | | 30 | pF | $V_{CB}=10V, f=1MHz$ |

*Measured under pulsed conditions. Pulse Width=300 μs . Duty cycle $\leq 2\%$