

# SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

**FZT788B**

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## FEATURES

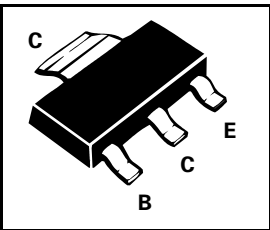
- \* Low equivalent on-resistance;  $R_{CE(sat)}$  **93mΩ at 3A**
- \* Gain of 300 at  $I_C=2$  Amps and Very low saturation voltage

## APPLICATIONS

- \* Battery powered circuits

COMPLEMENTARY TYPE – FZT688B

PARTMARKING DETAIL – FZT788B



## ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                       | SYMBOL         | VALUE       | UNIT             |
|---|----------------|-------------|------------------|
| Collector-Base Voltage                          | $V_{CBO}$      | -15         | V                |
| Collector-Emitter Voltage                       | $V_{CEO}$      | -15         | V                |
| Emitter-Base Voltage                            | $V_{EBO}$      | -5          | V                |
| Peak Pulse Current                              | $I_{CM}$       | -8          | A                |
| Continuous Collector Current                    | $I_C$          | -3          | A                |
| Power Dissipation at $T_{amb}=25^\circ\text{C}$ | $P_{tot}$      | 2           | W                |
| Operating and Storage Temperature Range         | $T_j; T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

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

| PARAMETER                             | SYMBOL                | MIN.                     | TYP.      | MAX.                            | UNIT          | CONDITIONS.  |
|---------------------------------------|-----------------------|--------------------------|-----------|---------------------------------|---------------|--|
| Collector-Base Breakdown Voltage      | $V_{(BR)CBO}$         | -15                      |           |                                 | V             | $I_C=-100\mu\text{A}$  |
| Collector-Emitter Breakdown Voltage   | $V_{(BR)CEO}$         | -15                      |           |                                 | V             | $I_C=-10\text{mA}^*$   |
| Emitter-Base Breakdown Voltage        | $V_{(BR)EBO}$         | -5                       |           |                                 | V             | $I_E=-100\mu\text{A}$  |
| Collector Cut-Off Current             | $I_{CBO}$             |                          |           | -0.1                            | $\mu\text{A}$ | $V_{CE}=-10\text{V}$   |
| Emitter Cut-Off Current               | $I_{EBO}$             |                          |           | -0.1                            | $\mu\text{A}$ | $V_{EB}=-4\text{V}$  |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$         |                          |           | -0.15<br>-0.25<br>-0.45<br>-0.5 | V             | $I_C=-0.5\text{A}, I_B=-2.5\text{mA}^*$<br>$I_C=-1\text{A}, I_B=-5\text{mA}^*$<br>$I_C=-2\text{A}, I_B=-10\text{mA}^*$<br>$I_C=-3\text{A}, I_B=-50\text{mA}^*$     |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$         |                          |           | -0.9                            | V             | $I_C=-1\text{A}, I_B=-5\text{mA}^*$  |
| Base-Emitter Turn-On Voltage          | $V_{BE(on)}$          |                          | -0.75     |                                 | V             | $I_C=-1\text{A}, V_{CE}=-2\text{V}^*$  |
| Static Forward Current Transfer Ratio | $h_{FE}$              | 500<br>400<br>300<br>150 |           | 1500                            |               | $I_C=-10\text{mA}, V_{CE}=-2\text{V}^*$<br>$I_C=-1\text{A}, V_{CE}=-2\text{V}^*$<br>$I_C=-2\text{A}, V_{CE}=-2\text{V}^*$<br>$I_C=-6\text{A}, V_{CE}=-2\text{V}^*$ |
| Transition Frequency                  | $f_T$                 | 100                      |           |                                 | MHz           | $I_C=-50\text{mA}, V_{CE}=-5\text{V}$<br>$f=50\text{MHz}$  |
| Input Capacitance                     | $C_{ibo}$             |                          | 225       |                                 | pF            | $V_{EB}=-0.5\text{V}, f=1\text{MHz}$   |
| Output Capacitance                    | $C_{obo}$             |                          | 25        |                                 | pF            | $V_{CB}=-10\text{V}, f=1\text{MHz}$  |
| Switching Times                       | $t_{on}$<br>$t_{off}$ |                          | 35<br>400 |                                 | ns<br>ns      | $I_C=-500\text{mA}, I_{B1}=-50\text{mA}$<br>$I_{B2}=-50\text{mA}, V_{CC}=-10\text{V}$  |

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device

## TYPICAL CHARACTERISTICS

