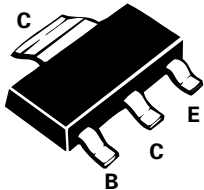


# SOT223 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

ISSUE 3 - NOVEMBER 1995

## FZT489

COMPLEMENTARY TYPE – FZT589  
PARTMARKING DETAIL – FZT489



### ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                  | SYMBOL         | VALUE       | UNIT        |
|--------------------------------------------|----------------|-------------|-------------|
| Collector-Base Voltage                     | $V_{CBO}$      | 50          | V           |
| Collector-Emitter Voltage                  | $V_{CEO}$      | 30          | V           |
| Emitter-Base Voltage                       | $V_{EBO}$      | 5           | V           |
| Continuous Collector Current               | $I_C$          | 1           | A           |
| Peak Pulse Current                         | $I_{CM}$       | 4           | A           |
| Base Current                               | $I_B$          | 200         | mA          |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | $P_{tot}$      | 2           | W           |
| Operating and Storage Temperature Range    | $T_j; T_{stg}$ | -55 to +150 | $^{\circ}C$ |

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

| PARAMETER                             | SYMBOL         | MIN. | MAX. | UNIT | CONDITIONS.                          |
|---------------------------------------|----------------|------|------|------|--------------------------------------|
| Breakdown Voltages                    | $V_{(BR)CBO}$  | 50   |      | V    | $I_C=100\mu A$                       |
|                                       | $V_{CEO(sus)}$ | 30   |      | V    | $I_C=10mA^*$                         |
|                                       | $V_{(BR)EBO}$  | 5    |      | V    | $I_E=100\mu A$                       |
| Collector Cut-Off Current             | $I_{CBO}$      |      | 100  | nA   | $V_{CB}=30V$                         |
|                                       | $I_{CES}$      |      | 100  | nA   | $V_{CES}=30V$                        |
| Emitter Cut-Off Current               | $I_{EBO}$      |      | 100  | nA   | $V_{EB}=4V$                          |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$  |      | 0.3  | V    | $I_C=1A, I_B=100mA^*$                |
|                                       |                |      | 0.6  | V    | $I_C=2A, I_B=200mA^*$                |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$  |      | 1.1  | V    | $I_C=1A, I_B=100mA^*$                |
| Base-Emitter Turn On Voltage          | $V_{BE(on)}$   |      | 1.0  | V    | $I_C=1A, V_{CE}=2V^*$                |
| Static Forward Current Transfer Ratio | $h_{FE}$       | 100  | 300  |      | $I_C=1mA, V_{CE}=2V^*$               |
|                                       |                | 100  |      |      | $I_C=1A, V_{CE}=2V^*$                |
|                                       |                | 60   |      |      | $I_C=2A, V_{CE}=2V^*$                |
|                                       |                | 20   |      |      | $I_C=4A, V_{CE}=2V^*$                |
| Transition Frequency                  | $f_T$          | 150  |      | MHz  | $I_C=50mA, V_{CE}=10V$<br>$f=100MHz$ |
| Collector-Base Breakdown Voltage      | $C_{obo}$      |      | 10   | pF   | $V_{CB}=10V, f=1MHz$                 |

\*Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$   
For typical characteristics graphs see FMMT449 datasheet