

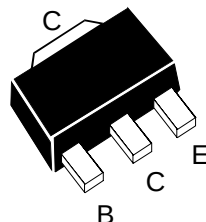
# SOT89 PNP SILICON PLANAR MEDIUM POWER HIGH PERFORMANCE TRANSISTOR

ISSUE 3 - OCTOBER 1995



## FCX589

PARTMARKING DETAIL – P89



### 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                  |
| Peak Pulse Current                                | $I_{CM}$       | -2          | A                  |
| Continuous Collector Current                      | $I_C$          | -1          | A                  |
| Base Current                                      | $I_B$          | -200        | mA                 |
| Power Dissipation at $T_{amb}=25^{\circ}\text{C}$ | $P_{tot}$      | 1           | W                  |
| Operating and Storage Temperature Range           | $T_j, T_{stg}$ | -65 to +150 | $^{\circ}\text{C}$ |

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

| PARAMETER                             | SYMBOL        | MIN.                   | MAX.           | UNIT | CONDITIONS.                                                                                                                                                                          |
|---------------------------------------|---------------|------------------------|----------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Breakdown Voltages                    | $V_{(BR)CBO}$ | -50                    |                | V    | $I_C = -100\mu\text{A}$                                                                                                                                                              |
|                                       | $V_{(BR)CEO}$ | -30                    |                | V    | $I_C = -10\text{mA}^*$                                                                                                                                                               |
|                                       | $V_{(BR)EBO}$ | -5                     |                | V    | $I_E = -100\mu\text{A}$                                                                                                                                                              |
| Collector Cut-Off Current             | $I_{CBO}$     |                        | -100           | nA   | $V_{CB} = -30\text{V}$                                                                                                                                                               |
| Collector -Emitter Cut-Off Current    | $I_{CES}$     |                        | -100           | nA   | $V_{CES} = -30\text{V}$                                                                                                                                                              |
| Emitter Cut-Off Current               | $I_{EBO}$     |                        | -100           | nA   | $V_{EB} = -4\text{V}$                                                                                                                                                                |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$ |                        | -0.35<br>-0.65 | V    | $I_C = -1\text{A}, I_B = -100\text{mA}^*$<br>$I_C = -2\text{A}, I_B = -200\text{mA}^*$                                                                                               |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$ |                        | -1.2           | V    | $I_C = -1\text{A}, I_B = -100\text{mA}^*$                                                                                                                                            |
| Base-Emitter Turn-on Voltage          | $V_{BE(on)}$  |                        | -1.1           | V    | $I_C = -1\text{A}, V_{CE} = -2\text{V}^*$                                                                                                                                            |
| Static Forward Current Transfer Ratio | $h_{FE}$      | 100<br>100<br>80<br>40 | 300            |      | $I_C = -1\text{mA}, V_{CE} = -2\text{V}^*$<br>$I_C = -500\text{mA}, V_{CE} = -2\text{V}^*$<br>$I_C = -1\text{A}, V_{CE} = -2\text{V}^*$<br>$I_C = -2\text{A}, V_{CE} = -2\text{V}^*$ |
| Transition Frequency                  | $f_T$         | 100                    |                | MHz  | $I_C = -100\text{mA}, V_{CE} = -5\text{V}$<br>$f = 100\text{MHz}$                                                                                                                    |
| Output Capacitance                    | $C_{obo}$     |                        | 15             | pF   | $V_{CB} = -10\text{V}, f = 1\text{MHz}$                                                                                                                                              |

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

For typical Characteristics graphs see FMMT549 datasheet