

# SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

## FMMT489

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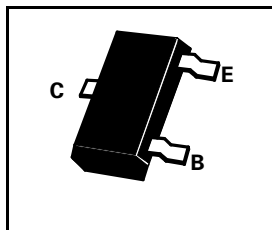


### FEATURES

\* Very low equivalent on-resistance;  $R_{CE(sat)}$  175m $\Omega$  at 1A

COMPLEMENTARY TYPE – FMMT589

PARTMARKING DETAIL – 489



### 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 $T_{amb}=25^\circ\text{C}$ | $P_{tot}$      | 500         | mW               |
| 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. | MAX. | UNIT | CONDITIONS.   |
|---------------------------------------|----------------|------|------|------|---|
| Breakdown Voltages                    | $V_{(BR)CBO}$  | 50   |      | V    | $I_C=100\mu\text{A}$  |
|                                       | $V_{CEO(sus)}$ | 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   | $V_{CB}=30\text{V}$   |
|                                       | $I_{CES}$      |      | 100  | nA   | $V_{CES}=30\text{V}$  |
| Emitter Cut-Off Current               | $I_{EBO}$      |      | 100  | nA   | $V_{EB}=4\text{V}$  |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$  |      | 0.3  | V    | $I_C=1\text{A}, I_B=100\text{mA}^*$   |
|                                       |                |      | 0.6  | V    | $I_C=2\text{A}, I_B=200\text{mA}^*$   |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$  |      | 1.1  | V    | $I_C=1\text{A}, I_B=100\text{mA}^*$   |
| Base-Emitter Turn On Voltage          | $V_{BE(on)}$   |      | 1.0  | V    | $I_C=1\text{A}, V_{CE}=2\text{V}^*$   |
| Static Forward Current Transfer Ratio | $h_{FE}$       | 100  | 300  |      | $I_C=1\text{mA}, V_{CE}=2\text{V}^*$<br>$I_C=1\text{A}, V_{CE}=2\text{V}^*$<br>$I_C=2\text{A}, V_{CE}=2\text{V}^*$<br>$I_C=4\text{A}, V_{CE}=2\text{V}^*$ |
|                                       |                | 100  |      |      |   |
|                                       |                | 60   |      |      |   |
|                                       |                | 20   |      |      |   |
| Transition Frequency                  | $f_T$          | 150  |      | MHz  | $I_C=50\text{mA}, V_{CE}=10\text{V}$<br>$f=100\text{MHz}$   |
| Collector-Base Breakdown Voltage      | $C_{obo}$      |      | 10   | 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 FMMT449 datasheet