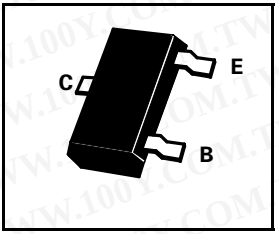
# SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

# FMMT449

**ISSUE 3 - NOVEMBER 1995**

FEATURES

* Low equivalent on-resistance; **$R_{CE(sat)}$ 250mΩ at 1A**




COMPLEMENTARY TYPE – FMMT549

PARTMARKING DETAIL – 449

## 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°C | $P_{tot}$ | 500 | mW |
| Operating and Storage Temperature Range | $T_j$:$T_{stg}$ | -55 to +150 | °C |

## ELECTRICAL CHARACTERISTICS (at $T_{amb}$ = 25°C unless otherwise stated).

| PARAMETER | SYMBOL | MIN. | MAX. | UNIT | CONDITIONS. |
|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 50 | | V | $I_C$=1mA, $I_E$=0 |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 30 | | V | $I_C$=10mA, $I_B$=0* |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | | V | $I_E$=100μA, $I_C$=0 |
| Collector Cut-Off Current | $I_{CBO}$ | | 0.1<br>10 | μA<br>μA | $V_{CB}$=40V, $I_E$=0<br>$V_{CB}$=40V, $T_{amb}$=100°C |
| Emitter Cut-Off Current | $I_{EBO}$ | | 0.1 | μA | $V_{EB}$=4V, $I_C$=0 |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | 0.5<br>1.0 | V<br>V | $I_C$=1A, $I_B$=100mA*<br>$I_C$=2A, $I_B$=200mA* |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | 1.25 | 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 | $h_{FE}$ | 70<br>100<br>80<br>40 | 300 | | $I_C$=50mA, $V_{CE}$=2V*<br>$I_C$=500mA, $V_{CE}$=2V*<br>$I_C$=1A, $V_{CE}$=2V*<br>$I_C$=2A, $V_{CE}$=2V* |
| Transition Frequency | $f_T$ | 150 | | MHz | $I_C$=50mA, $V_{CE}$=10V<br>f=100mHz |
| Output Capacitance | $C_{obo}$ | | 15 | pF | $V_{CB}$=10V, f=1MHz |

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

Spice parameter data is available upon request for this device

勝 特 力 材 料 886-3-5753170
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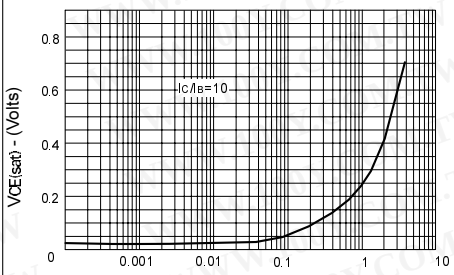
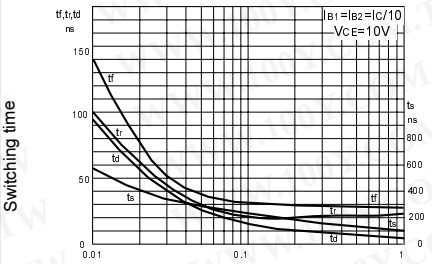
## TYPICAL CHARACTERISTICS



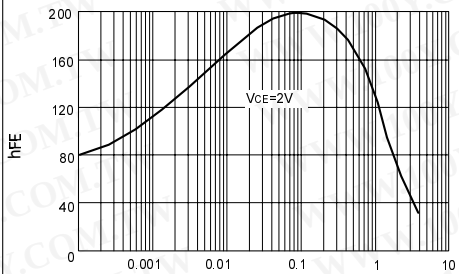

IC - Collector Current (Amps)

**VCE(sat) v IC**



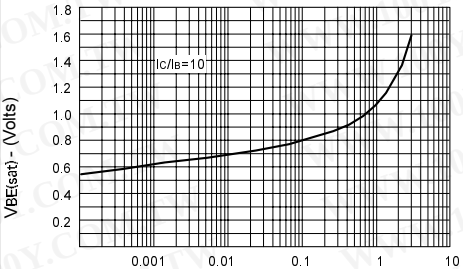

IC - Collector Current (Amps)

**Switching Speeds**



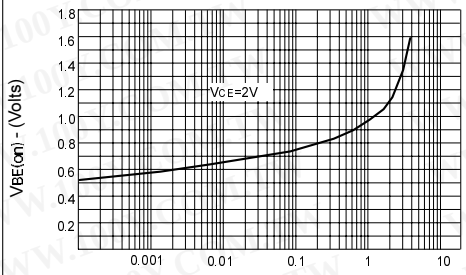

IC - Collector Current (Amps)

**hFE v IC**



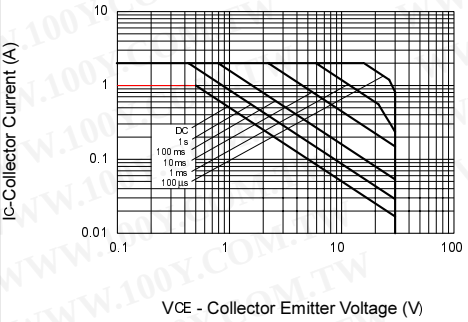

IC - Collector Current (Amps)

**VBE(sat) v IC**




IC - Collector Current (Amps)

**VBE(on) v IC**




VCE - Collector Emitter Voltage (V)

**Safe Operating Area**