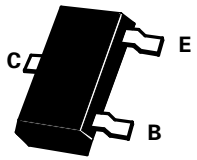
# SOT23 PNP SILICON PLANAR GENERAL PURPOSE TRANSISTOR

**ISSUE 2 - MARCH 1995** ✪

# FMMT4402
# FMMT4403

PARTMARKING DETAILS: FMMT4402 - 2K
FMMT4403 - 2L




## ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | -40 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | -40 | V |
| Emitter-Base Voltage | $V_{EBO}$ | -5 | V |
| Continuous Collector Current | $I_C$ | -600 | A |
| Power Dissipation at $T_{amb}$=25°C | $P_{tot}$ | 330 | mW |
| Operating and Storage Temperature Range | $T_j$:$T_{stg}$ | -55 to +150 | °C |

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

| | | FMMT4402 | | FMMT4403 | | | |
|---|---|---|---|---|---|---|---|
| PARAMETER | SYMBOL | MIN. | MAX. | MIN. | MAX. | UNIT | CONDITIONS |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -40 | | -40 | | V | IC=-1mA, $I_B$=0 |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -40 | | -40 | | V | $I_C$=-0.1mA, $I_E$=0 |
| Emitter-Base Breakdown Current | $V_{(BR)EBO}$ | -5 | | -5 | | V | IE=-0.1mA, $I_C$=0 |
| Collector-Emitter Cut-Off Current | $I_{CEX}$ | | -0.1 | | -0.1 | µA | $V_{CE}$=-35V<br>$V_{EB(off)}$ =-0.4V |
| Base Cut-Off Current | $I_{BEX}$ | | -0.1 | | -0.1 | µA | $V_{CE}$=-35V<br>$V_{EB(off)}$ =-0.4V |
| Static Forward Current TransferRatio | $h_{FE}$ | 30<br>50<br>50<br>20 | <br><br><br>150 | 30<br>60<br>100<br>100<br>20 | <br><br><br>300 | | $I_C$=-0.1mA, $V_{CE}$=-1V<br>$I_C$=-1mA, $V_{CE}$=-1V<br>$I_C$=-10mA, $V_{CE}$=-1V<br>$I_C$=-150mA,$V_{CE}$=-2V*<br>$I_C$=-500mA,$V_{CE}$=-2V* |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | -0.4<br>-0.75 | | -0.4<br>-0.75 | V<br>V | $I_C$=-150mA,$I_B$=-15mA*<br>$I_C$=-500mA,$I_B$=-50mA* |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | -0.75 | -0.95<br>-1.3 | -0.75 | -0.95<br>-1.3 | V<br>V | $I_C$=-150mA,$I_B$=-15mA*<br>$I_C$=-500mA,$I_B$=-50mA |
| Transition Frequency | $f_T$ | 150 | | 200 | | MHz | $I_C$=-20mA,$V_{CE}$=-10V<br>f=100MHz |
| Output Capacitance | $C_{obo}$ | | 8.5 | | 8.5 | pF | $V_{CB}$=-10 V,$I_E$=0<br>f=100kHz |
| Input Capacitance | $C_{ibo}$ | | 30 | | 30 | pF | $V_{BE}$=0.5V<br>$I_C$=0, f=100kHz |

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

## SWITCHING CHARACTERISTICS (at $T_{amb}$= 25°C )

| PARAMETER | SYMBOL | MIN. | MAX. | UNIT | CONDITIONS |
|---|---|---|---|---|---|
| Turn-On Time | $t_{on}$ | | 35 | ns | $V_{CC}$=-30V, $V_{BE(off)}$=-2V<br>$I_C$=-150mA, $I_{B1}$=-15mA<br>(See Fig.1) |
| Turn-Off Time | $t_{off}$ | | 255 | ns | $V_{CC}$=-30V, $I_C$=-150mA<br>$I_{B1}$=$I_{B2}$=-15mA<br>(See Fig. 2) |