

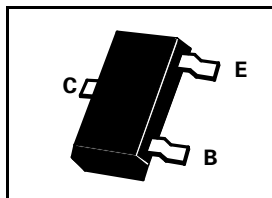
# SOT23 PNP SILICON PLANAR GENERAL PURPOSE TRANSISTOR

## FMMT4402 FMMT4403

ISSUE 2 - MARCH 1995



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 $T_{amb}=25^{\circ}C$	$P_{tot}$	330	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

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

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

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

**FMMT4402**  
**FMMT4403**

**SWITCHING CHARACTERISTICS (at  $T_{amb}= 25^{\circ}\text{C}$  )**

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