



## SOT-23 Plastic-Encapsulate Transistors

### MMBT4403 TRANSISTOR (PNP)

#### FEATURES

Switching transistor

MARKING : MMBT4403=2T

#### MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-40	V
$V_{CEO}$	Collector-Emitter Voltage	-40	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current -Continuous	-0.6	A
$P_C$	Collector Power Dissipation	0.3	W
$T_j$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^{\circ}\text{C}$



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

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}$ , $I_E=0$	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}$ , $I_B=0$	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu\text{A}$ , $I_C=0$	-5		V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-35\text{V}$ , $I_E=0$		-0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=-35\text{V}$ , $I_B=0$		-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-4\text{V}$ , $I_C=0$		-0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=-2\text{V}$ , $I_C=-150\text{mA}$	100	300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-150\text{mA}$ , $I_B=-15\text{mA}$		-0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-150\text{mA}$ , $I_B=-15\text{mA}$		-0.95	V
Transition frequency	$f_T$	$V_{CE}=-10\text{V}$ , $I_C=-20\text{mA}$ $f = 100\text{MHz}$	200		MHz

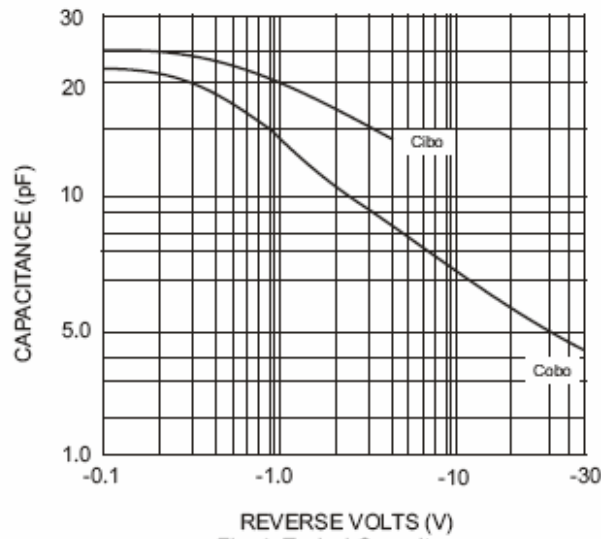


Fig. 1 Typical Capacitance

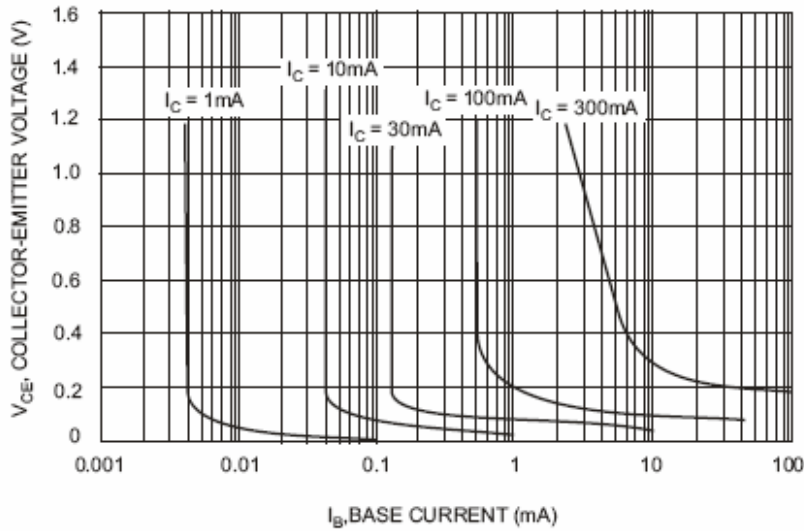


Fig. 2 Typical Collector Saturation Region

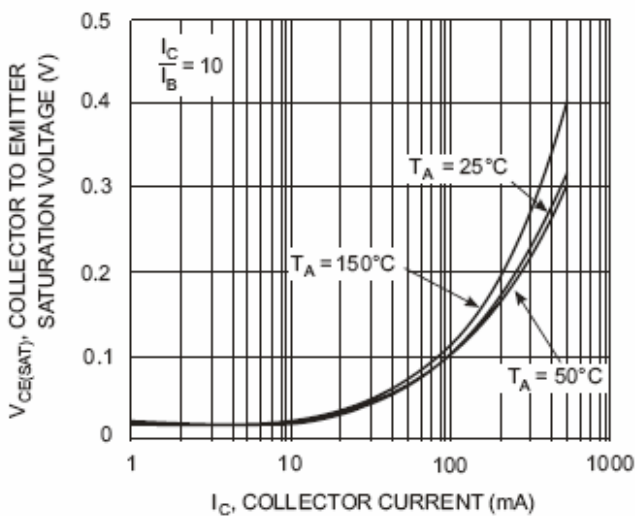


Fig. 3 Collector Emitter Saturation Voltage vs. Collector Current

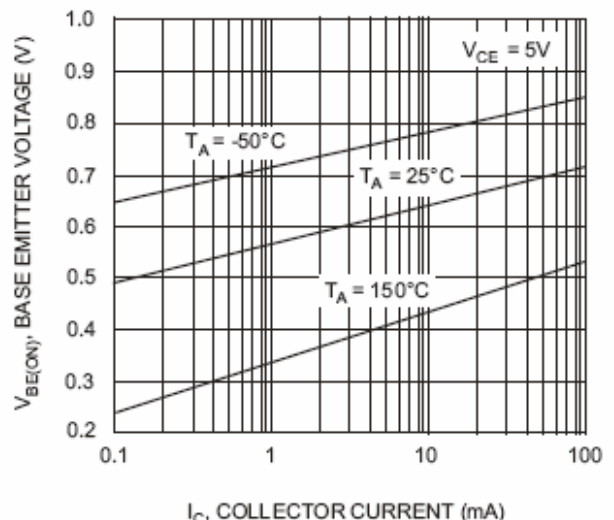


Fig. 4 Base-Emitter Voltage vs. Collector Current

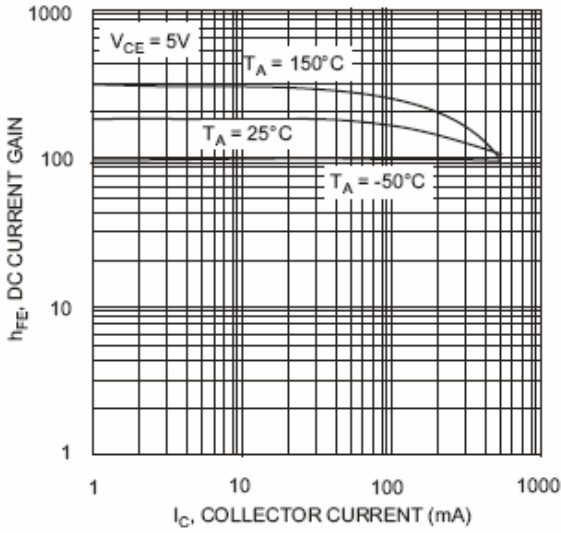


Fig. 5 DC Current Gain vs. Collector Current

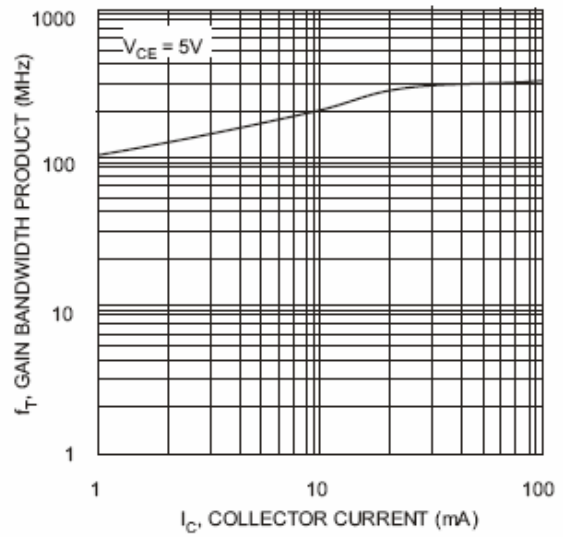


Fig. 6 Gain Bandwidth Product vs. Collector Current

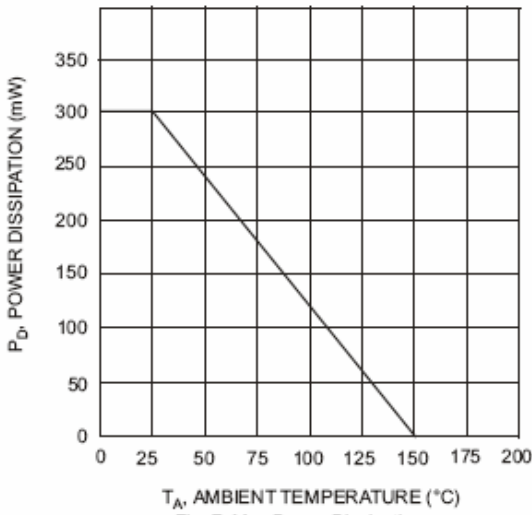


Fig. 7, Max Power Dissipation vs Ambient Temperature