

SOT-23 Plastic-Encapsulate Transistors**MMBT5401** TRANSISTOR (PNP)**FEATURES**

- Complementary to MMBT5551
- Ideal for medium power amplification and switching

**MARKING: 2L****MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

Symbol Para	meter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-160	V
$V_{CEO}$	Collector-Emitter Voltage	-150	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	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}$ , $I_E = 0$	-160		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$ , $I_B = 0$	-150		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}$ , $I_C = 0$	-5		V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -120\text{V}$ , $I_E = 0$		-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	$h_{FE1}$	$V_{CE} = -5\text{V}$ , $I_C = -1\text{mA}$	80		
	$h_{FE2}$	$V_{CE} = -5\text{V}$ , $I_C = -10\text{mA}$	100	300	
	$h_{FE3}$	$V_{CE} = -5\text{V}$ , $I_C = -50\text{mA}$	50		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$		-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$		-1	V
Transition frequency	$f_T$	$V_{CE} = -5\text{V}$ , $I_C = -10\text{mA}$ $f = 30\text{MHz}$	100		MHz

# Typical Characteristics

# MMBT5401

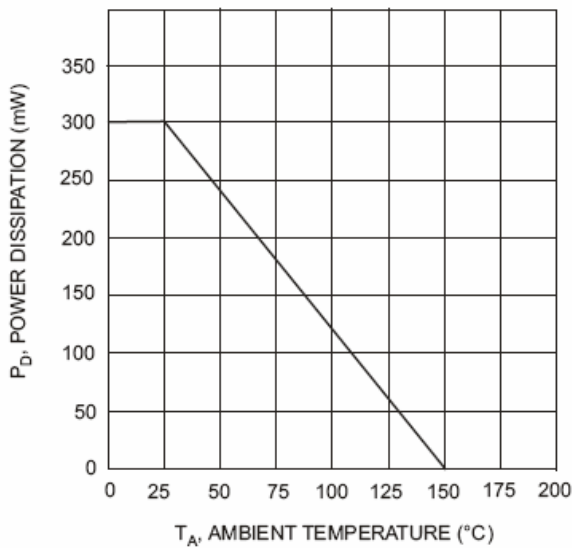


Fig. 1, Max Power Dissipation vs Ambient Temperature

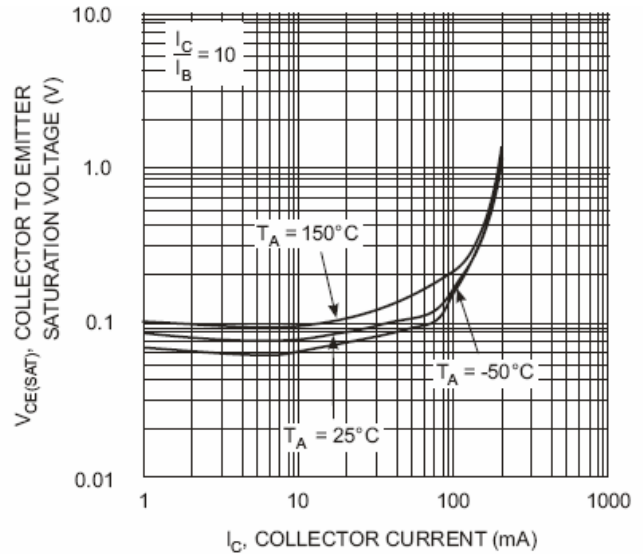


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

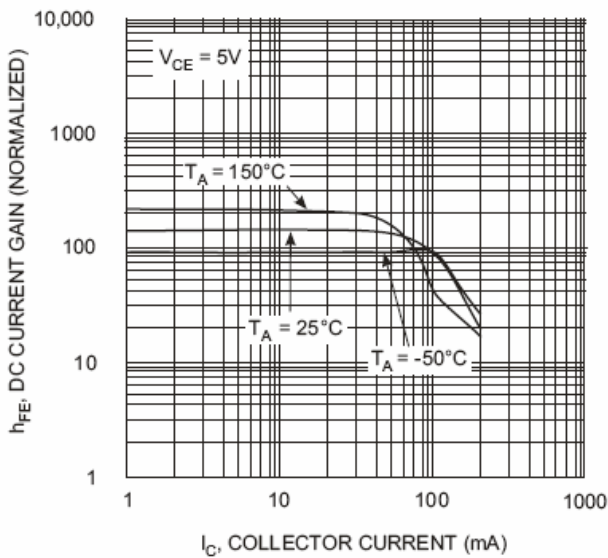


Fig. 3, DC Current Gain vs. Collector Current

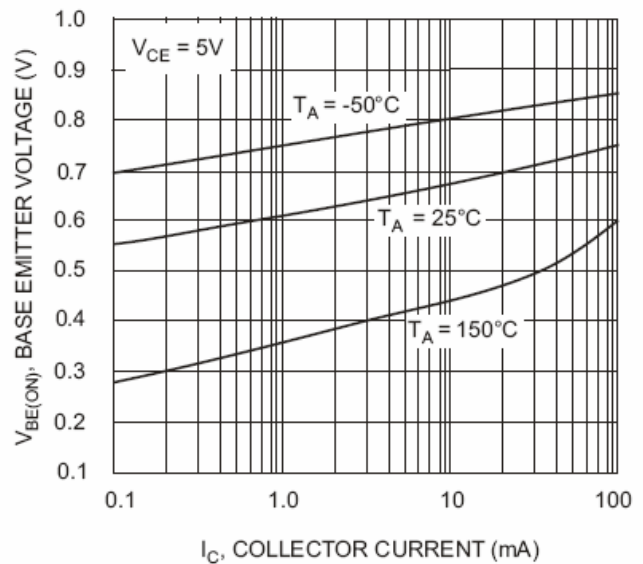


Fig. 4, Base Emitter Voltage vs. Collector Current

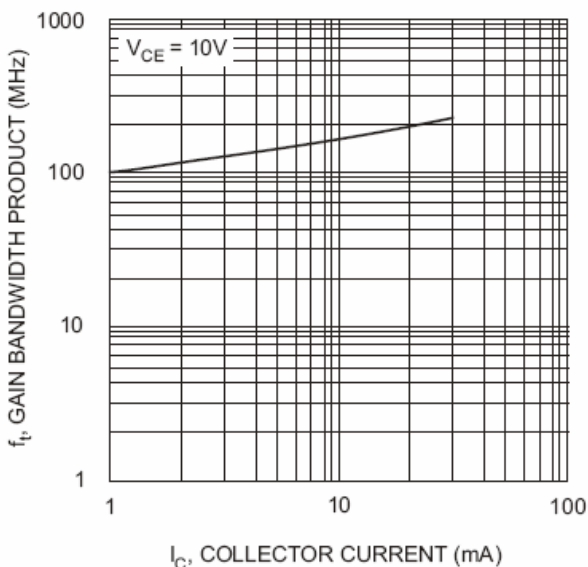


Fig. 5, Gain Bandwidth Product vs Collector Current