

# SOT-23 Plastic-Encapsulate Transistors

# Formosa MS

## 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	Parameter	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	$^\circ\text{C}$



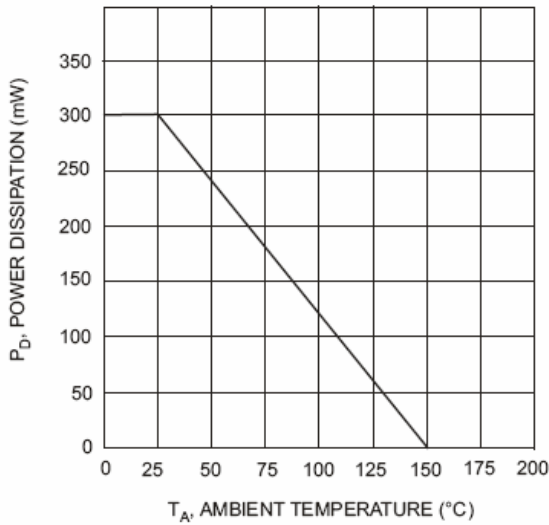
### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^\circ\text{C}$ unless otherwise specified)

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

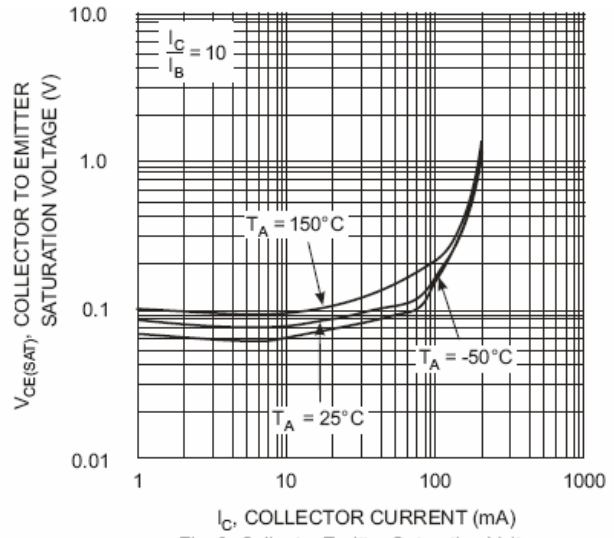
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## Typical Characteristics MMBT5401

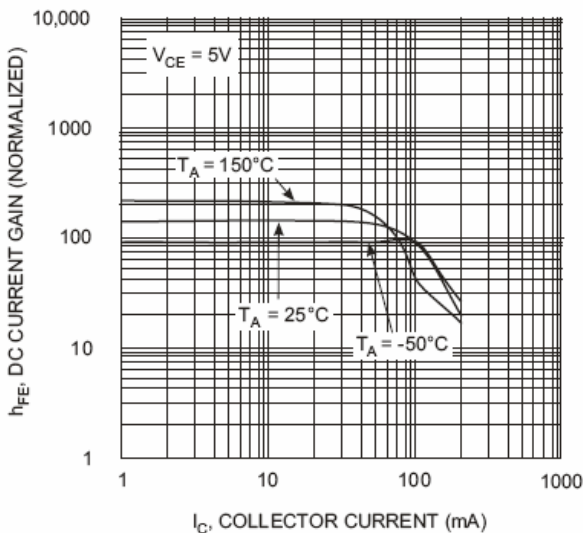
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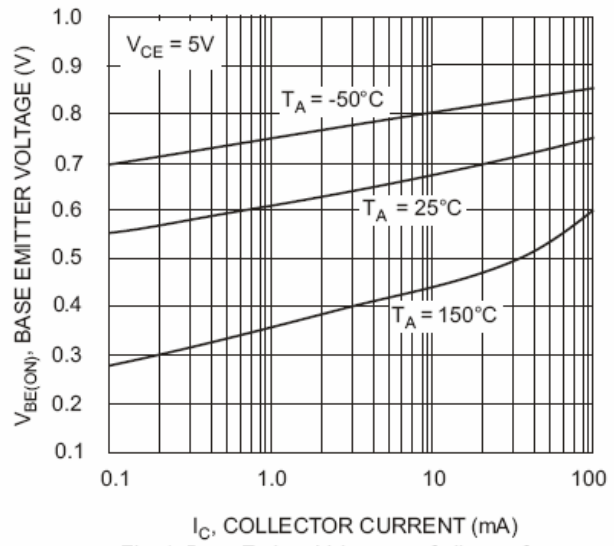
$T_A$ , AMBIENT TEMPERATURE (°C)  
Fig. 1, Max Power Dissipation vs Ambient Temperature



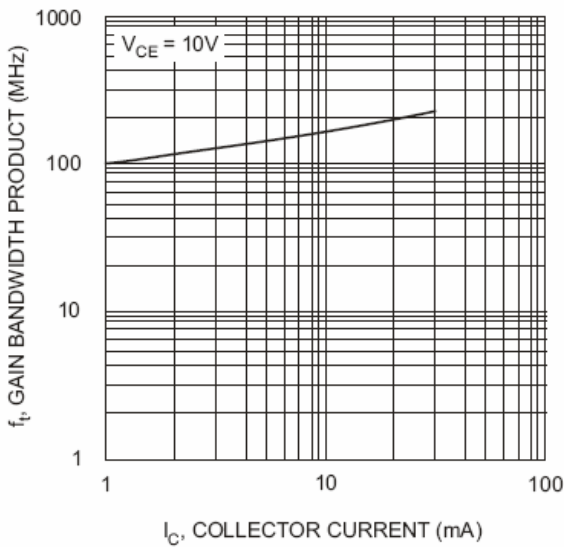
$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 3, DC Current Gain vs. Collector Current



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 4, Base Emitter Voltage vs. Collector Current



$I_C$ , COLLECTOR CURRENT (mA)  
Fig. 5, Gain Bandwidth Product vs Collector Current

