

# SOT-23 Plastic-Encapsulate Transistors

## MMBT5401 TRANSISTOR (PNP)

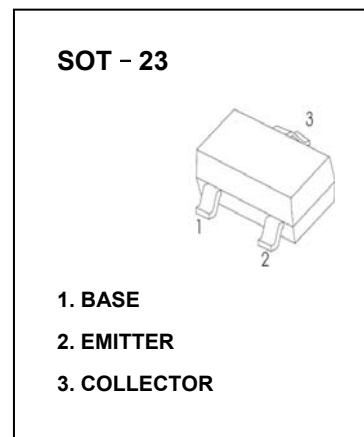
### FEATURES

- Complementary to MMBT5551
- Ideal for Medium Power Amplification and Switching

### MARKING: 2L

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

Symbol	Parameter	Value	Unit
$V_{CB0}$	Collector-Base Voltage	-160	V
$V_{CE0}$	Collector-Emitter Voltage	-150	V
$V_{EB0}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-0.6	A
$P_C$	Collector Power Dissipation	0.3	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	416	$^\circ\text{C}/\text{W}$
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^\circ\text{C}$



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

Parameter	Symbol	Test conditions	Min	Typ	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	$h_{FE(1)}^*$	$V_{CE}=-5\text{V}, I_C=-1\text{mA}$	80			
	$h_{FE(2)}^*$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$	100		300	
	$h_{FE(3)}^*$	$V_{CE}=-5\text{V}, I_C=-50\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C=-10\text{mA}, I_B=-1\text{mA}$			-0.2	V
	$V_{CE(sat)2}^*$	$I_C=-50\text{mA}, I_B=-5\text{mA}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)1}^*$	$I_C=-10\text{mA}, I_B=-1\text{mA}$			-1	V
	$V_{BE(sat)2}^*$	$I_C=-50\text{mA}, I_B=-5\text{mA}$			-1	V
Transition frequency	$f_T$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}, f=30\text{MHz}$	100			MHz

\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycles  $\leq 2.0\%$ .

# Typical Characteristics

