

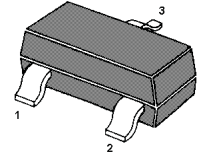
## MMBT5401 TRANSISTOR (PNP)

### FEATURES

Complementary to MMBT5551

Ideal for medium power amplification and switching

### SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

### MARKING: 2L

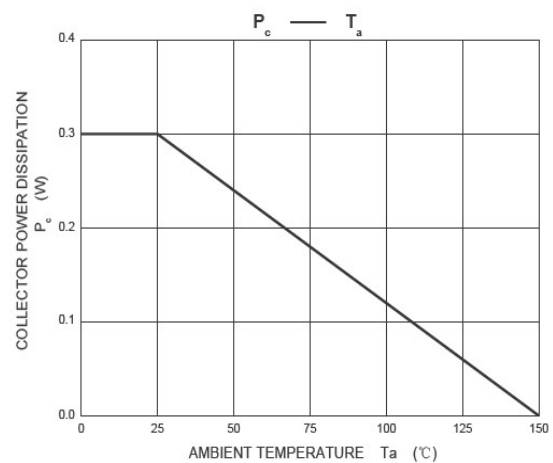
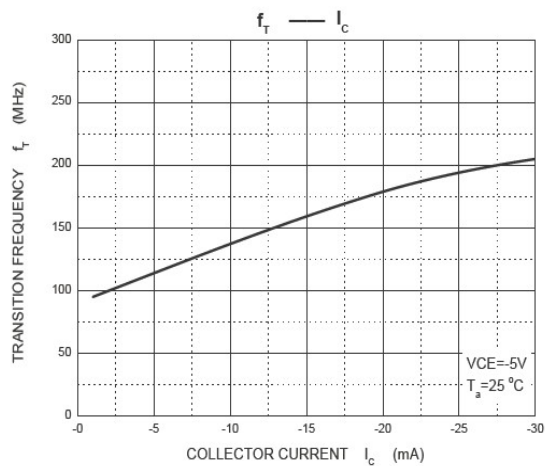
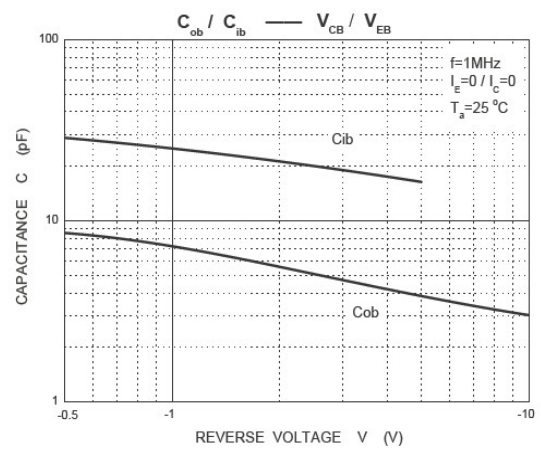
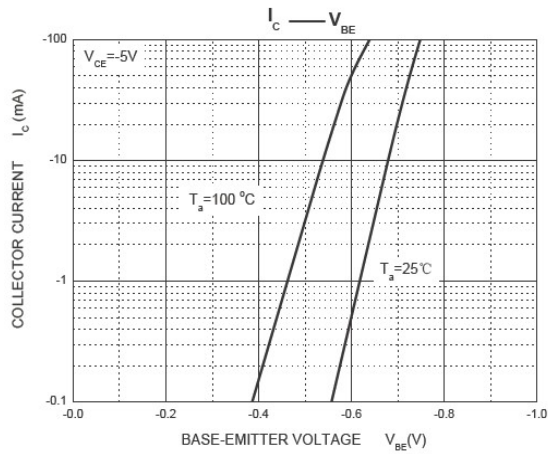
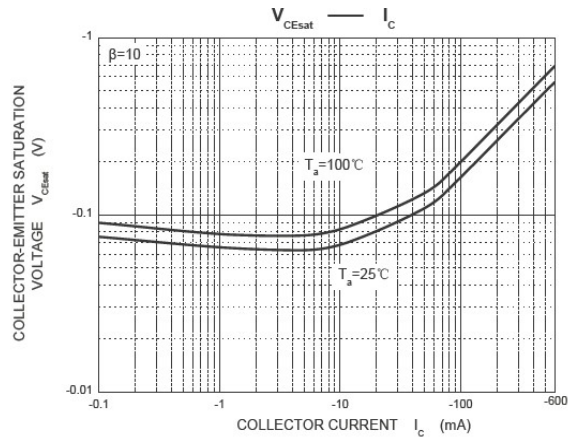
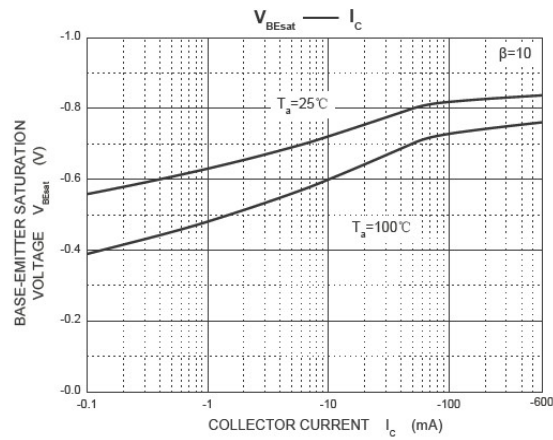
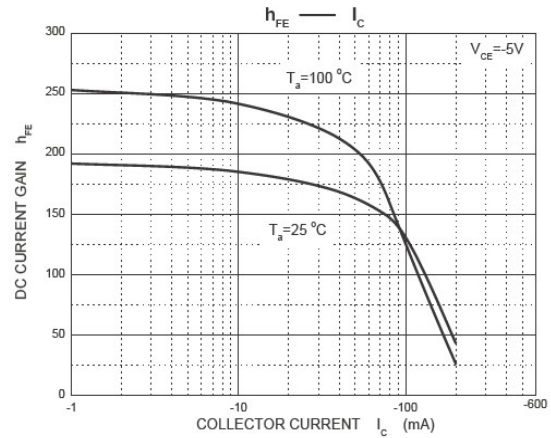
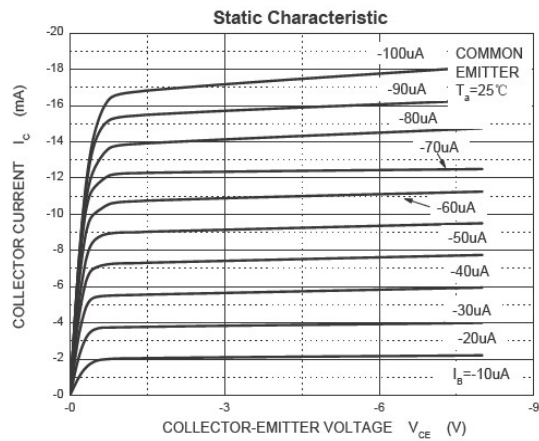
### MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| 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)

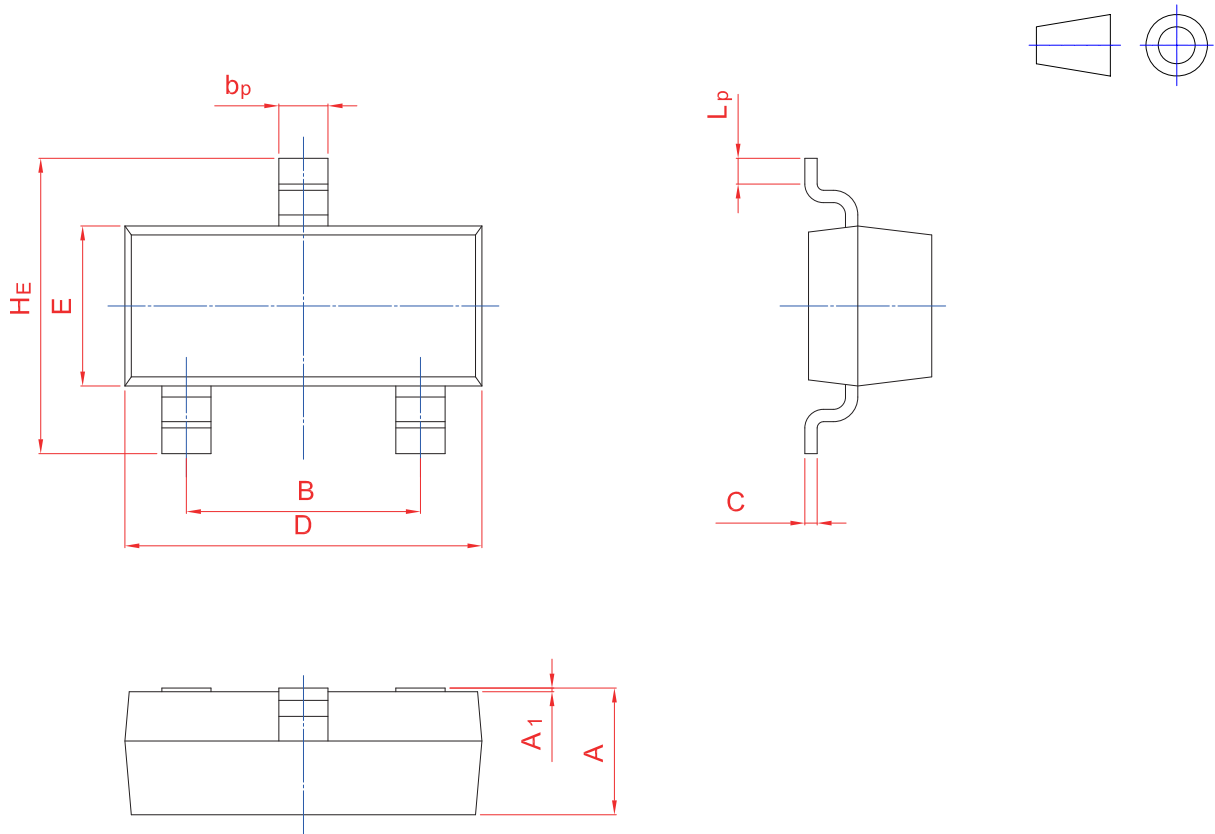
| Parameter                            | Symbol        | Test conditions                              | MIN  | MAX  | UNIT          |
|--------------------------------------|---------------|----------------------------------------------|------|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -100\mu\text{A}$ , $I_E = 0$          | -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                 | $f_T$         | $V_{CE} = -5\text{V}$ , $I_C = -10\text{mA}$ | 100  |      | MHz           |

## Typical Characteristics



## PACKAGE OUTLINE

### SOT-23



| UNIT | A            | B            | b <sub>p</sub> | C            | D            | E            | H <sub>E</sub> | A <sub>1</sub> | L <sub>p</sub> |
|------|--------------|--------------|----------------|--------------|--------------|--------------|----------------|----------------|----------------|
| mm   | 1.40<br>0.89 | 2.04<br>1.78 | 0.51<br>0.30   | 0.19<br>0.08 | 3.10<br>2.70 | 1.65<br>1.20 | 3.00<br>2.20   | 0.100<br>0.013 | 0.50<br>0.20   |