

# MMBT8050

TRANSISTOR(NPN)

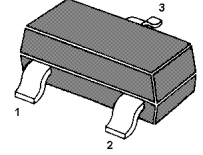


## FEATURES

Complimentary to SS8550

MARKING: Y1

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

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

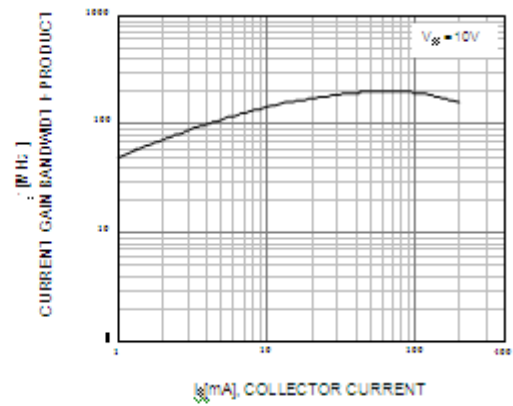
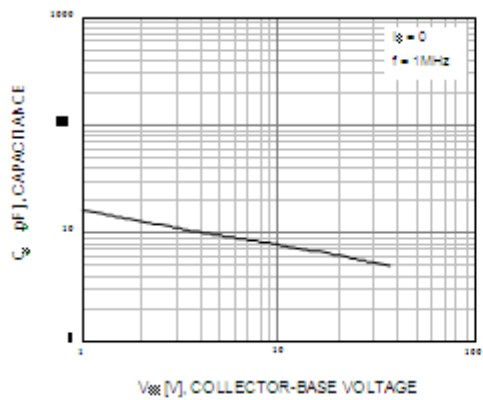
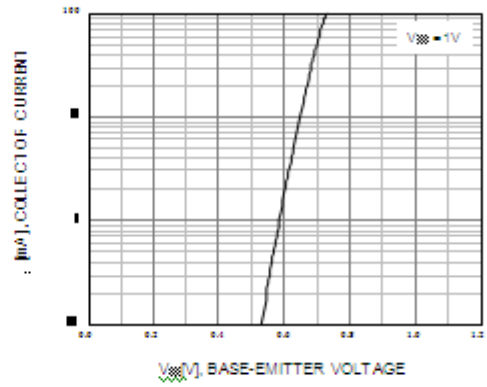
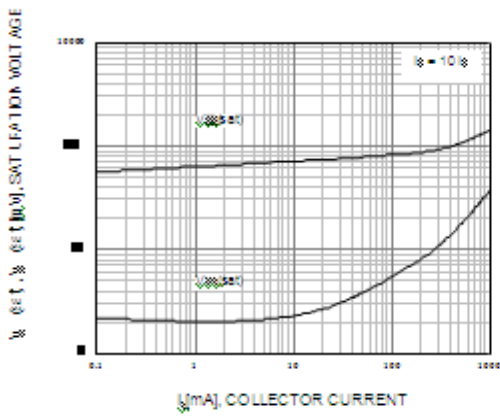
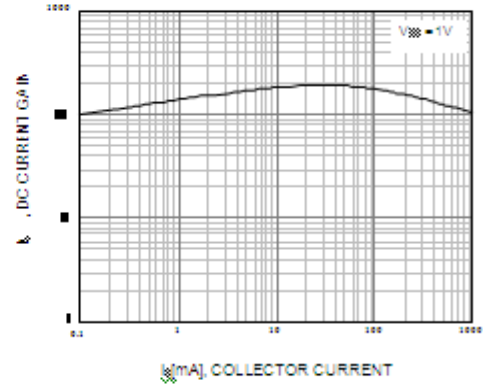
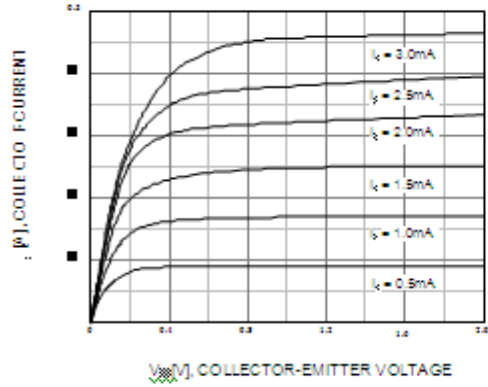
| Symbol    | Parameter                     | Value   | Units              |
|-----------|-------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage        | 40      | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage     | 25      | V                  |
| $V_{EBO}$ | Emitter-Base Voltage          | 5       | V                  |
| $I_C$     | Collector Current -Continuous | 1.5     | 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 | TYP | MAX | UNIT          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}$ , $I_E=0$                              | 40  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=0.1\text{mA}$ , $I_B=0$                                | 25  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}$ , $I_C=0$                              | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=40\text{V}$ , $I_E=0$                               |     |     | 0.1 | $\mu\text{A}$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CB}=20\text{V}$ , $I_E=0$                               |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5\text{V}$ , $I_C=0$                                |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=1\text{V}$ , $I_C=100\text{mA}$                     | 200 |     | 350 |               |
|                                      | $h_{FE(2)}$   | $V_{CE}=1\text{V}$ , $I_C=800\text{mA}$                     | 40  |     |     |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=800\text{mA}$ , $I_B=80\text{mA}$                      |     |     | 0.5 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=800\text{mA}$ , $I_B=80\text{mA}$                      |     |     | 1.2 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=10\text{V}$ , $I_C=50\text{mA}$<br>$f=30\text{MHz}$ | 100 |     |     | MHz           |

# Typical Characteristics

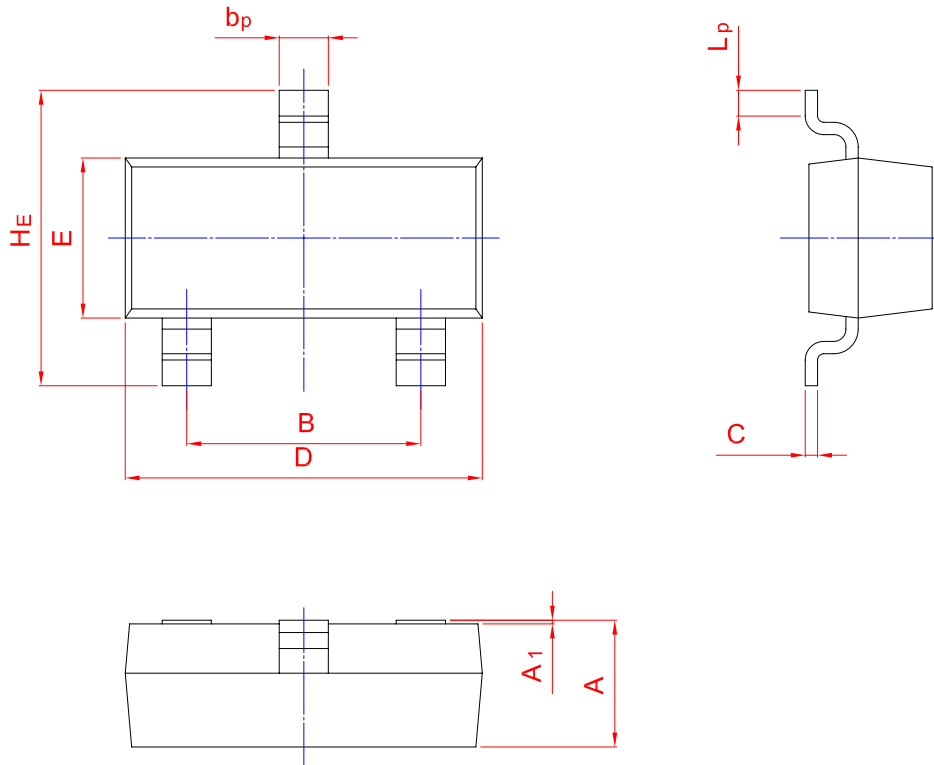
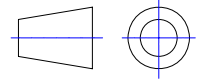
# MMBT8050



# PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

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| UNIT | A    | B    | b <sub>p</sub> | C    | D    | E    | H <sub>ε</sub> | A <sub>1</sub> | L <sub>p</sub> |
|------|------|------|----------------|------|------|------|----------------|----------------|----------------|
| mm   | 1.40 | 2.04 | 0.50           | 0.19 | 3.10 | 1.65 | 3.00           | 0.100          | 0.50           |
|      | 0.95 | 1.78 | 0.35           | 0.08 | 2.70 | 1.20 | 2.20           | 0.013          | 0.20           |