



# HMBTA44

NPN EPITAXIAL PLANAR TRANSISTOR

## Description

The HMBTA44 is designed for application requires high voltage.

## Features

- High voltage:  $V_{CEO}=400V(\text{min})$  at  $I_C=1mA$
- High current:  $I_C=300mA$  at  $25^{\circ}C$
- Complementary with HMBTA94

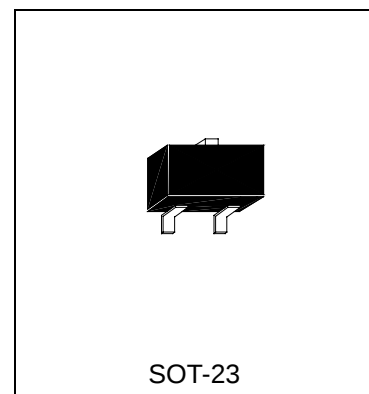
## Absolute Maximum Ratings

- Maximum Temperatures  
Storage Temperature .....  $-55 \sim +150^{\circ}C$   
Junction Temperature .....  $+150^{\circ}C$  Maximum
- Maximum Power Dissipation  
Total Power Dissipation ( $T_a=25^{\circ}C$ ) ..... 350 mW
- Maximum Voltages and Currents ( $T_a=25^{\circ}C$ )  
 $V_{CBO}$  Collector to Base Voltage ..... 450 V  
 $V_{CEO}$  Collector to Emitter Voltage ..... 400 V  
 $V_{EBO}$  Emitter to Base Voltage ..... 6 V  
 $I_C$  Collector Current..... 300 mA

## Characteristics ( $T_a=25^{\circ}C$ )

| Symbol           | Min. | Typ. | Max. | Unit | Test Conditions         |
|------------------|------|------|------|------|-------------------------|
| $B_{V_{CBO}}$    | 450  | -    | -    | V    | $I_C=100\mu A$          |
| $B_{V_{CEO}}$    | 400  | -    | -    | V    | $I_C=1mA$               |
| $B_{V_{EBO}}$    | 6    | -    | -    | V    | $I_E=10\mu A$           |
| $I_{CBO}$        | -    | -    | 100  | nA   | $V_{CB}=400V$           |
| $I_{EBO}$        | -    | -    | 100  | nA   | $V_{EB}=4V$             |
| $I_{CES}$        | -    | -    | 500  | nA   | $V_{CE}=400V$           |
| * $V_{CE(sat)1}$ | -    | -    | 400  | mV   | $I_C=1mA, I_B=0.1mA$    |
| * $V_{CE(sat)2}$ | -    | -    | 500  | mV   | $I_C=10mA, I_B=1mA$     |
| * $V_{CE(sat)3}$ | -    | -    | 750  | mV   | $I_C=50mA, I_B=5mA$     |
| * $V_{BE(sat)}$  | -    | -    | 750  | mV   | $I_C=10mA, I_B=1mA$     |
| * $h_{FE1}$      | 40   | -    | -    |      | $V_{CE}=10V, I_C=1mA$   |
| * $h_{FE2}$      | 50   | -    | 300  |      | $V_{CE}=10V, I_C=10mA$  |
| * $h_{FE3}$      | 45   | -    | -    |      | $V_{CE}=10V, I_C=50mA$  |
| * $h_{FE4}$      | 40   | -    | -    |      | $V_{CE}=10V, I_C=100mA$ |
| Cob              | -    | 4    | 6    | pF   | $V_{CB}=20V, f=1MHz$    |

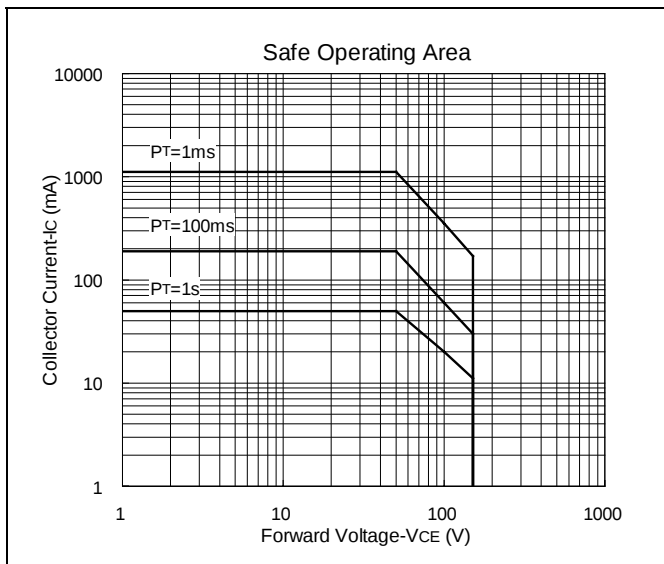
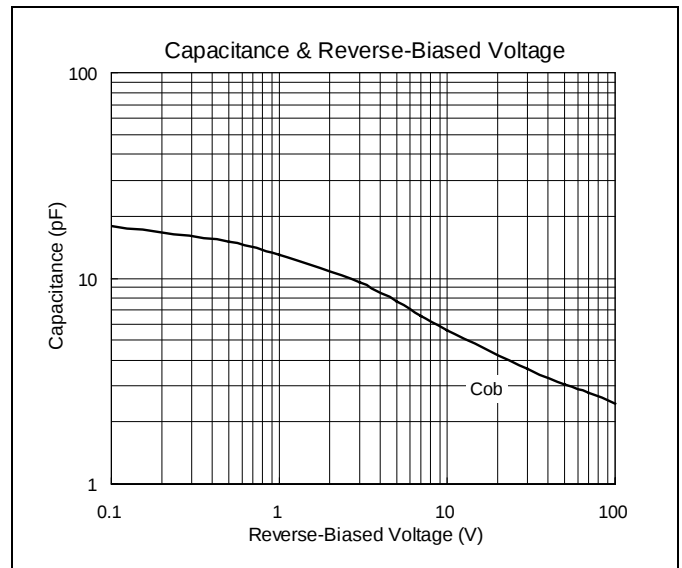
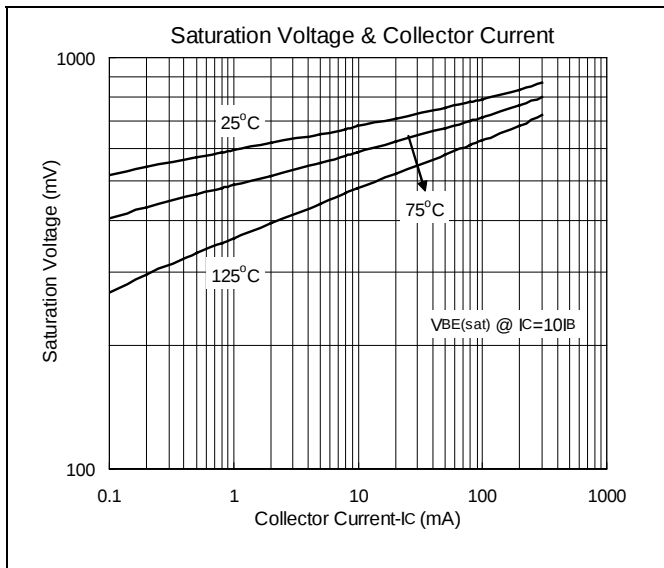
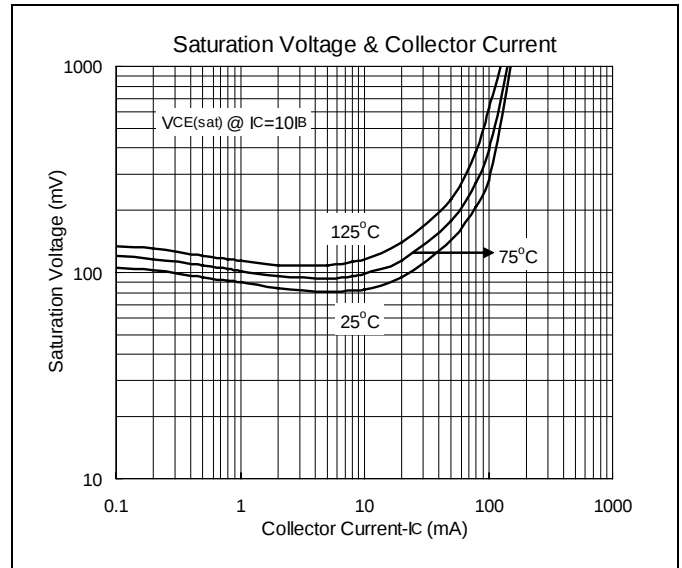
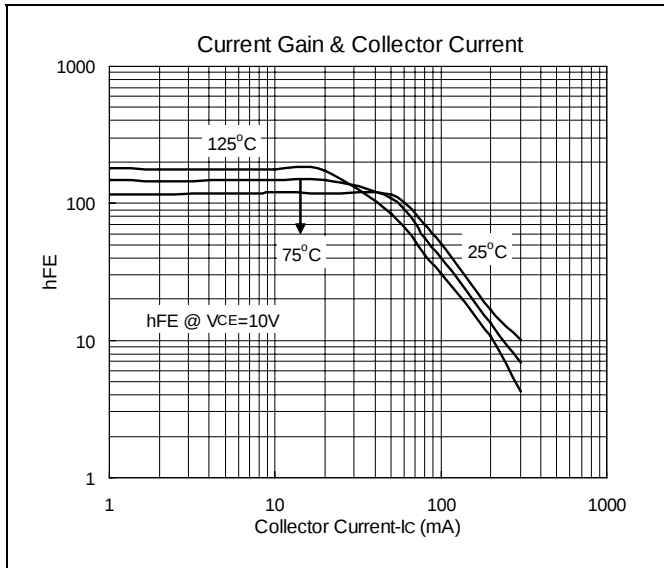
\*Pulse Test: Pulse Width  $\leq 380\mu s$ , Duty Cycle  $\leq 2\%$



SOT-23

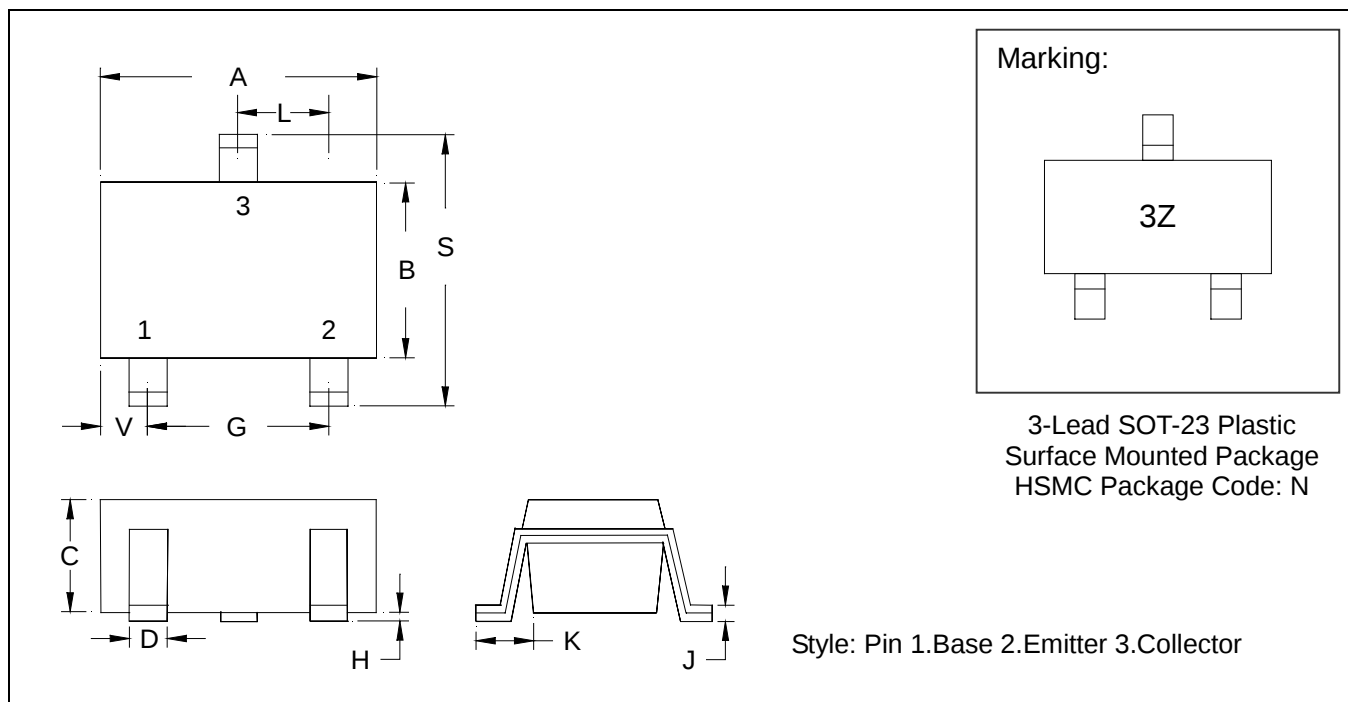


## Characteristics Curve





### SOT-23 Dimension



\*: Typical

| DIM | Inches |        | Millimeters |      | DIM | Inches |        | Millimeters |       |
|-----|--------|--------|-------------|------|-----|--------|--------|-------------|-------|
|     | Min.   | Max.   | Min.        | Max. |     | Min.   | Max.   | Min.        | Max.  |
| A   | 0.1102 | 0.1204 | 2.80        | 3.04 | J   | 0.0034 | 0.0070 | 0.85        | 0.177 |
| B   | 0.0472 | 0.0630 | 1.20        | 1.60 | K   | 0.0128 | 0.0266 | 0.32        | 0.67  |
| C   | 0.0335 | 0.0512 | 0.89        | 1.30 | L   | 0.0335 | 0.0453 | 0.85        | 1.15  |
| D   | 0.0118 | 0.0197 | 0.30        | 0.50 | S   | 0.0830 | 0.1083 | 2.10        | 2.75  |
| G   | 0.0669 | 0.0910 | 1.70        | 2.30 | V   | 0.0098 | 0.0256 | 0.25        | 0.65  |
| H   | 0.0005 | 0.0040 | 0.013       | 0.10 |     |        |        |             |       |

Notes: 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.

2.Controlling dimension: millimeters.

3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.

4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

#### Material:

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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