

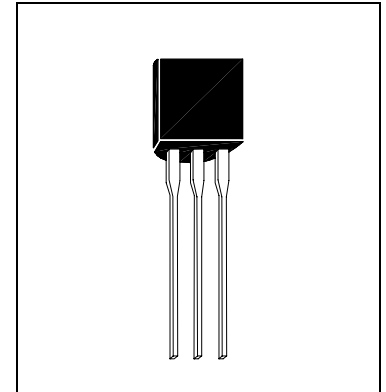


# HE8050S

NPN EPITAXIAL PLANAR TRANSISTOR

## Description

The HE8050S is designed for general purpose amplifier applications.



## Absolute Maximum Ratings

- Maximum Temperatures  
 Storage Temperature ..... -55 ~ +150 °C  
 Junction Temperature ..... +150 °C Maximum
- Maximum Power Dissipation  
 Total Power Dissipation (Ta=25°C) ..... 625 mW
- Maximum Voltages and Currents (Ta=25°C)  
 VCBO Collector to Base Voltage ..... 25 V  
 VCEO Collector to Emitter Voltage ..... 20 V  
 VEBO Emitter to Base Voltage ..... 5 V  
 IC Collector Current ..... 700 mA

## Characteristics (Ta=25°C)

| Symbol    | Min. | Typ. | Max. | Unit | Test Conditions            |
|-----------|------|------|------|------|----------------------------|
| BVCBO     | 25   | -    | -    | V    | IC=10uA, IE=0              |
| BVCEO     | 20   | -    | -    | V    | IC=1mA, IB=0               |
| VEBO      | 5    | -    | -    | V    | IE=10uA, IC=0              |
| ICBO      | -    | -    | 1    | uA   | VCB=20V, IE=0              |
| IEBO      | -    | -    | 100  | nA   | VEB=5V, IC=0               |
| *VCE(sat) | -    | -    | 0.5  | V    | IC=0.5A, IB=50mA           |
| VBE(on)   | -    | -    | 1    | V    | VCE=1V, IC=150mA           |
| *hFE1     | 100  | -    | 500  |      | VCE=1V, IC=150mA           |
| *hFE2     | -    | 140  | -    |      | VCE=1V, IC=500mA           |
| fT        | 150  | -    | -    | MHz  | VCE=10V, IC=20mA, f=100MHz |
| Cob       | -    | -    | 10   | pF   | VCB=10V, f=1MHz, IE=0      |

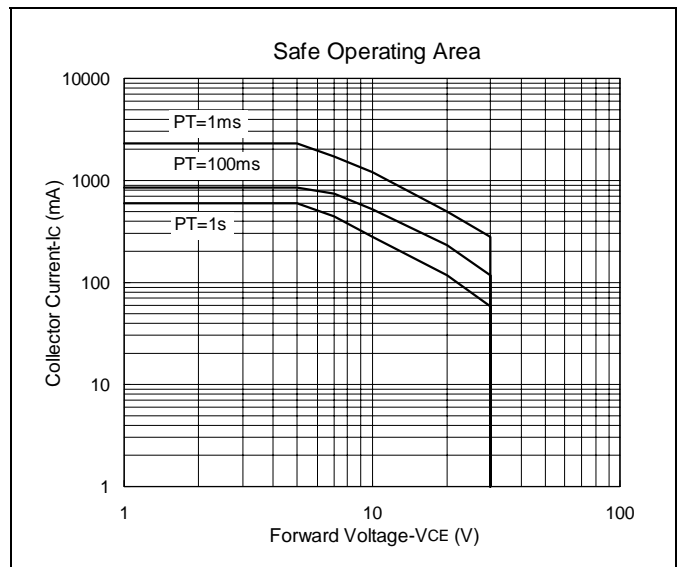
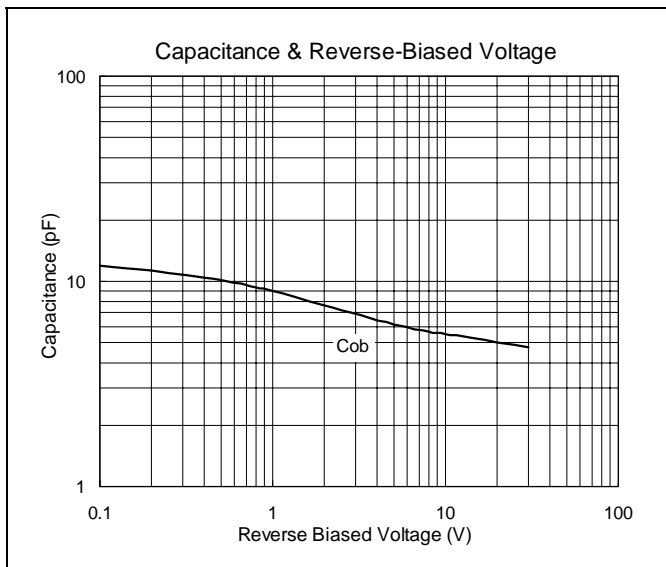
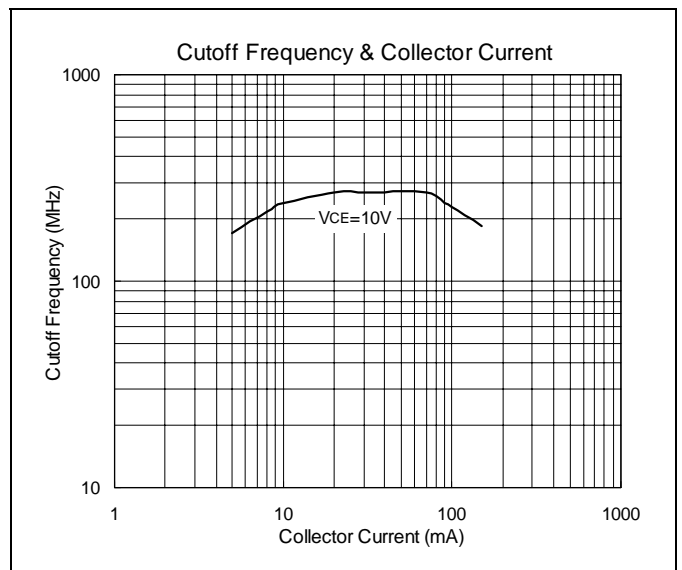
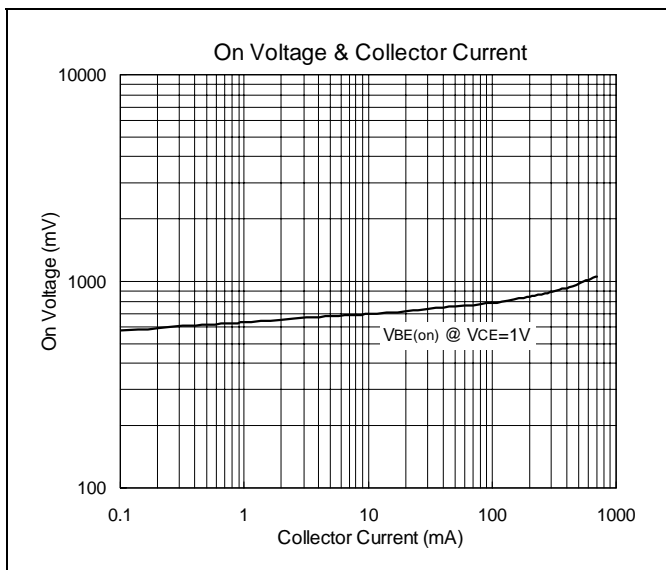
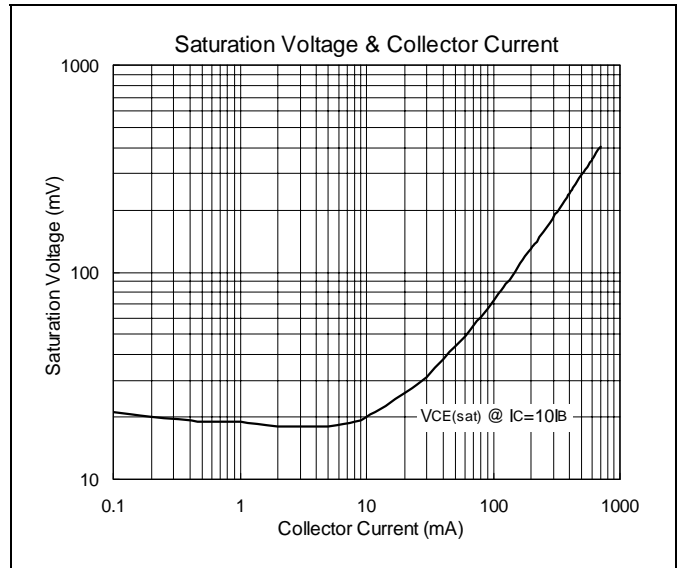
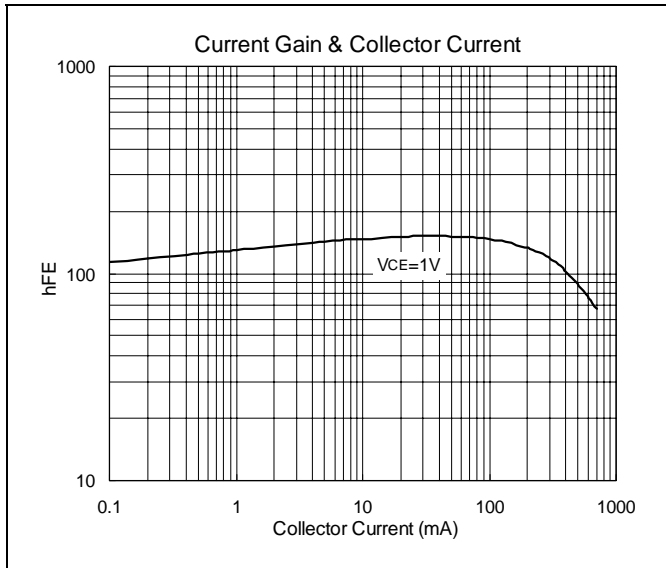
\*Pulse Test : Pulse Width ≤380us, Duty Cycle≤2%

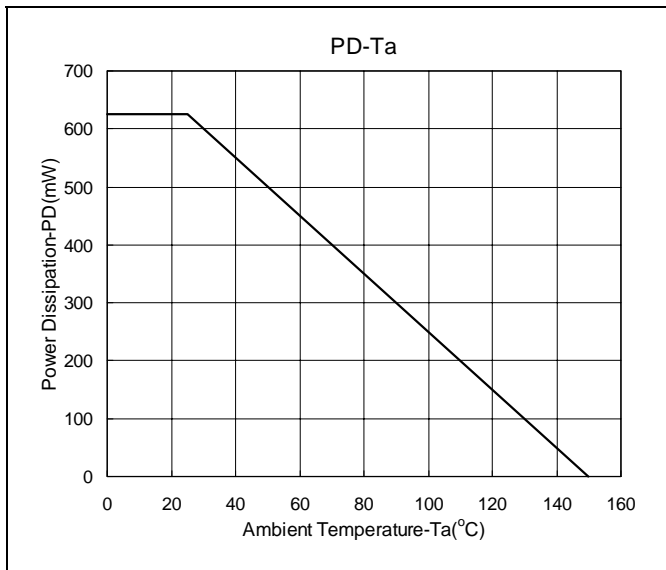
## Classifications of hFE

| Rank | C       | C1      | D       | D1      | E       |
|------|---------|---------|---------|---------|---------|
| hFE1 | 100-180 | 100-180 | 160-300 | 160-300 | 250-500 |
| hFE2 | -       | >50     | -       | >50     | -       |



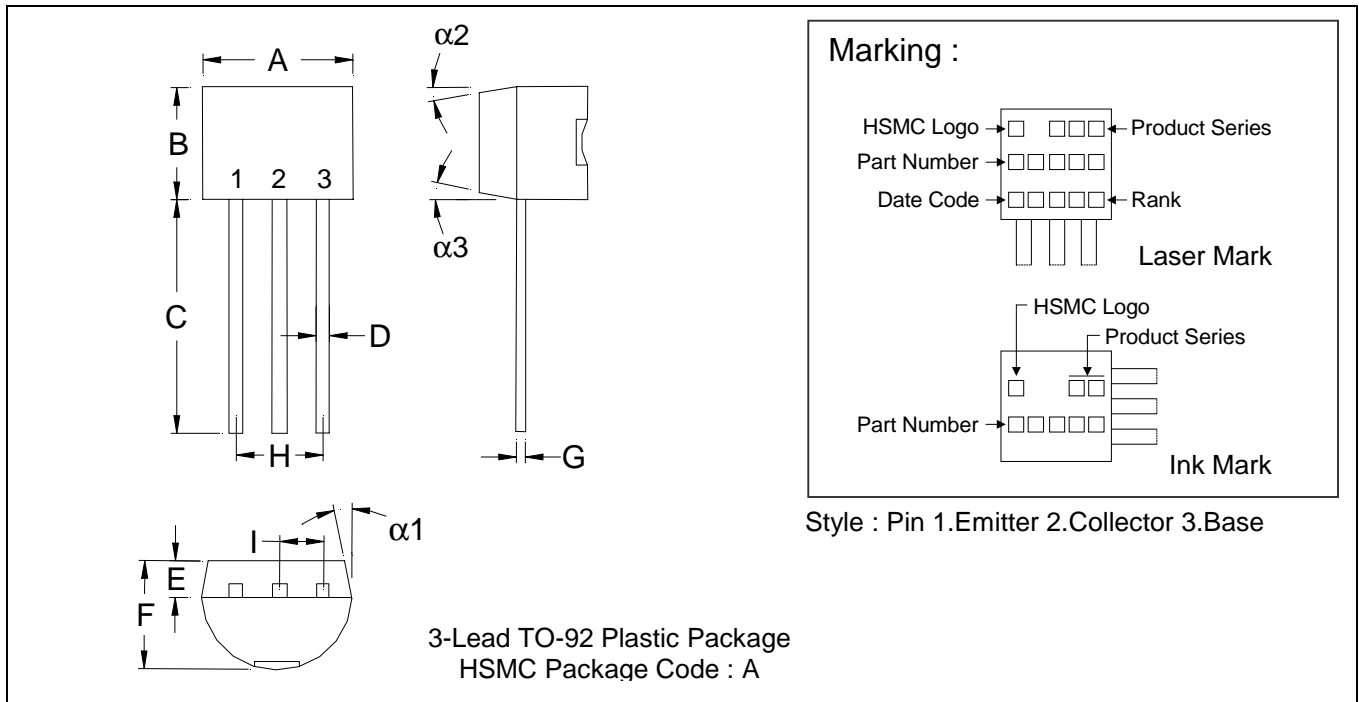
### Characteristics Curve







### TO-92 Dimension



\*:Typical

| DIM | Inches |         | Millimeters |       | DIM        | Inches |         | Millimeters |       |
|-----|--------|---------|-------------|-------|------------|--------|---------|-------------|-------|
|     | Min.   | Max.    | Min.        | Max.  |            | Min.   | Max.    | Min.        | Max.  |
| A   | 0.1704 | 0.1902  | 4.33        | 4.83  | G          | 0.0142 | 0.0220  | 0.36        | 0.56  |
| B   | 0.1704 | 0.1902  | 4.33        | 4.83  | H          | -      | *0.1000 | -           | *2.54 |
| C   | 0.5000 | -       | 12.70       | -     | I          | -      | *0.0500 | -           | *1.27 |
| D   | 0.0142 | 0.0220  | 0.36        | 0.56  | $\alpha 1$ | -      | *5°     | -           | *5°   |
| E   | -      | *0.0500 | -           | *1.27 | $\alpha 2$ | -      | *2°     | -           | *2°   |
| F   | 0.1323 | 0.1480  | 3.36        | 3.76  | $\alpha 3$ | -      | *2°     | -           | *2°   |

- Notes :**
1. Dimension and tolerance based on our Spec. dated Apr. 25, 1996.
  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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**Head Office And Factory :**

- **Head Office** (Hi-Sincerity Microelectronics Corp.) : 10F., No. 61, Sec. 2, Chung-Shan N. Rd. Taipei Taiwan R.O.C.  
 Tel : 886-2-25212056 Fax : 886-2-25632712, 25368454
- **Factory 1** : No. 38, Kuang Fu S. Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C  
 Tel : 886-3-5983621~5 Fax : 886-3-5982931