



# HSD1609

NPN EPITAXIAL PLANAR TRANSISTOR

## Features

- Low frequency high voltage amplifier
- Complementary pair with HSB1109

## Absolute Maximum Ratings (Ta=25°C)

- Maximum Temperatures  
Storage Temperature ..... -50 ~ +150 °C  
Junction Temperature ..... +150 °C Maximum
- Maximum Power Dissipation  
Total Power Dissipation (Ta=25°C) ..... 1.25 W
- Maximum Voltages and Currents  
BVCBO Collector to Base Voltage ..... 160 V  
BVCEO Collector to Emitter Voltage ..... 160 V  
BVEBO Emitter to Base Voltage ..... 5 V  
IC Collector Current ..... 100 mA

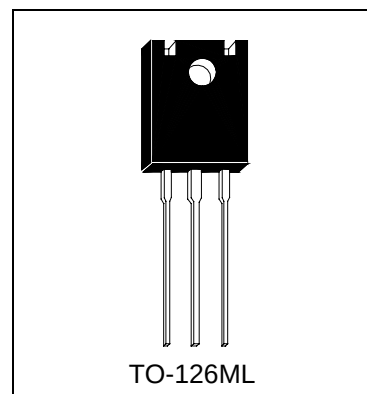
## Electrical Characteristics (Ta=25°C)

| Symbol    | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------|------|------|------|------|-----------------|
| BVCBO     | 160  | -    | -    | V    | IC=10uA         |
| BVCEO     | 160  | -    | -    | V    | IC=1mA          |
| BVEBO     | 5    | -    | -    | V    | IE=10uA         |
| ICBO      | -    | -    | 10   | uA   | VCB=140V        |
| *VCE(sat) | -    | -    | 2    | V    | IC=30mA, IB=3mA |
| VBE(on)   | -    | -    | 1.5  | V    | IC=10mA, VCE=5V |
| *hFE1     | 60   | -    | 320  |      | IC=10mA, VCE=5V |
| *hFE2     | 30   | -    | -    |      | IC=1mA, VCE=5V  |
| fT        | 145  | -    | -    | MHz  | IC=10mA, VCE=5V |
| Cob       | -    | 3.8  | -    | pF   | VCB=10V, f=1MHz |

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

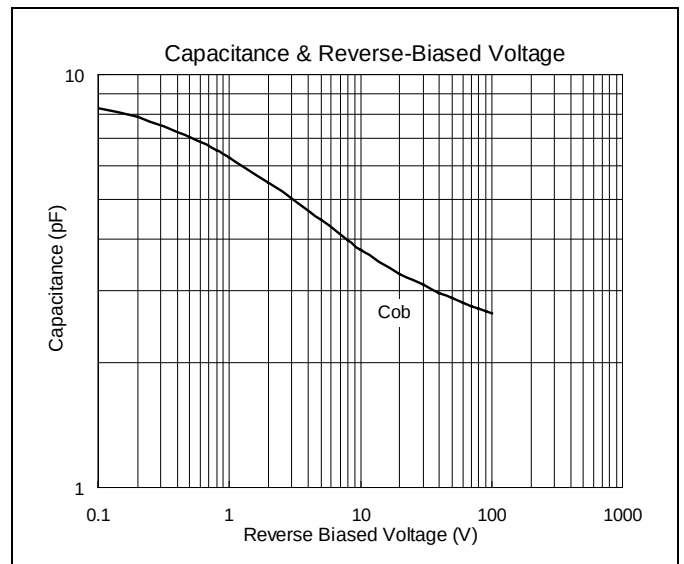
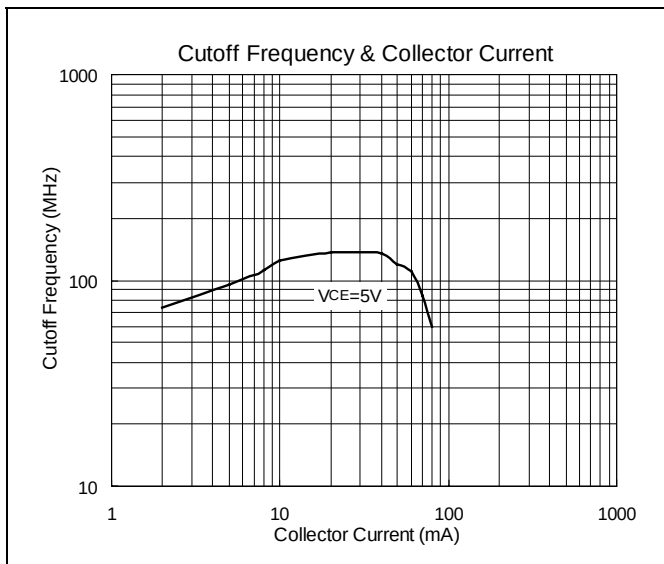
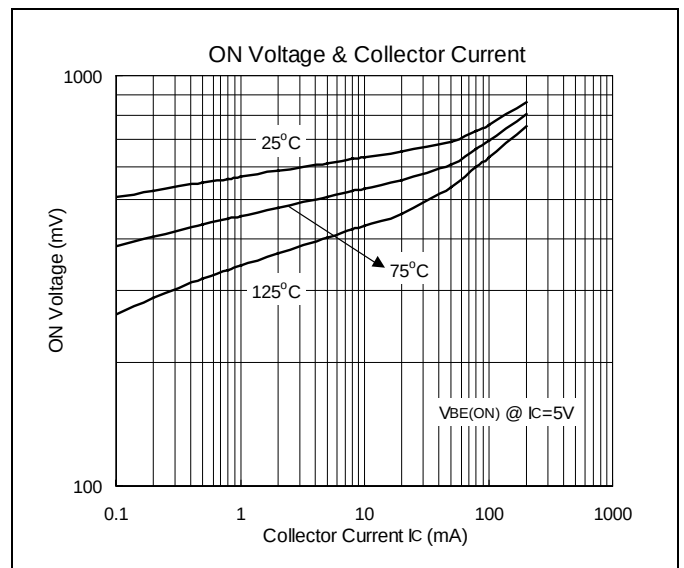
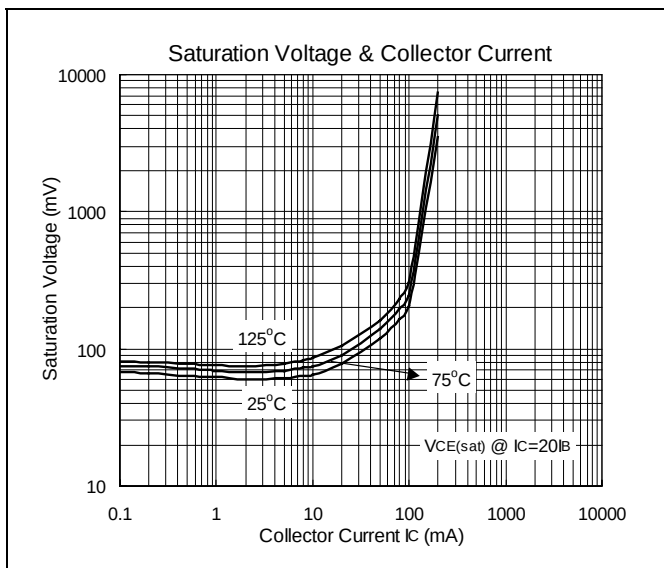
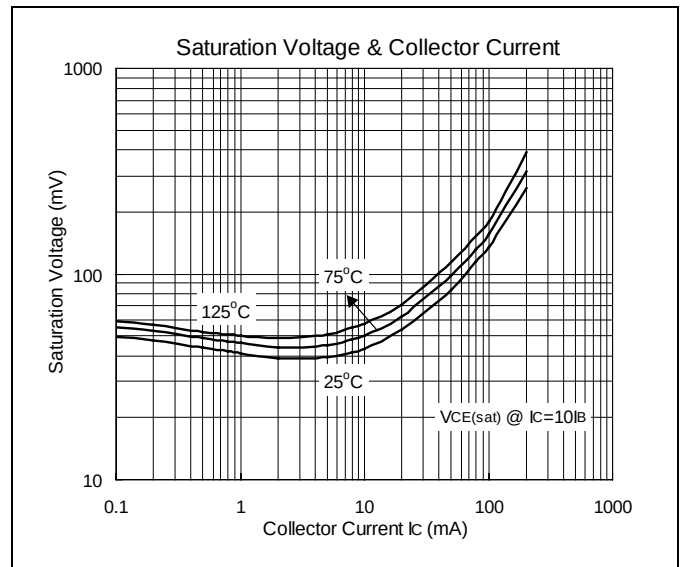
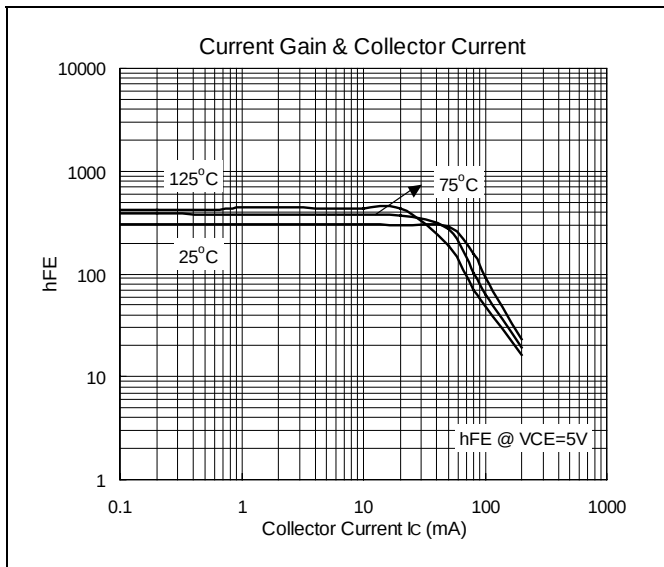
## Classification Of hFE1

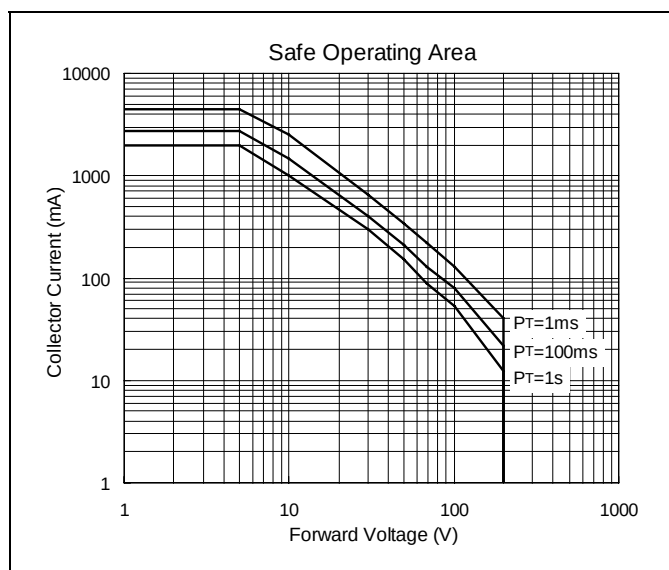
| Rank  | B      | C       | D       |
|-------|--------|---------|---------|
| Range | 60-120 | 100-200 | 160-320 |





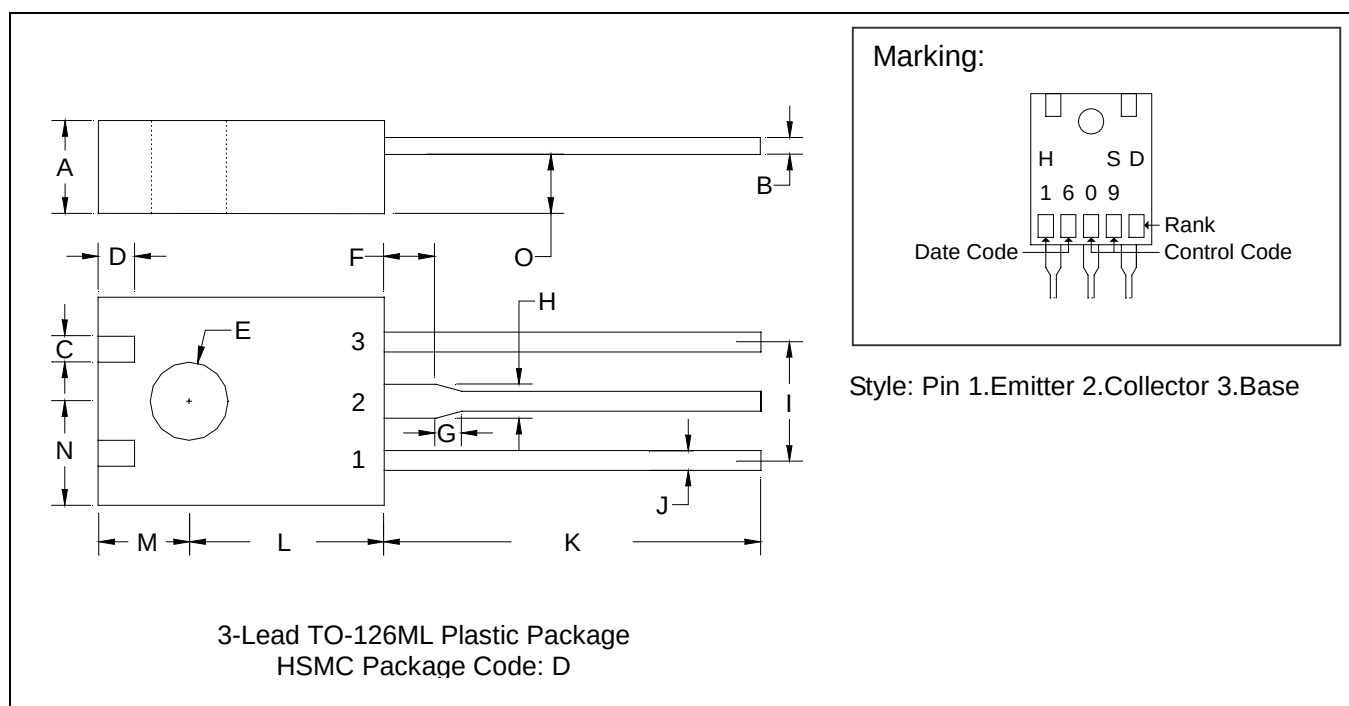
### Characteristics Curve







### TO-126ML Dimension



\*: Typical

| DIM | Inches |        | Millimeters |      | DIM | Inches |         | Millimeters |       |
|-----|--------|--------|-------------|------|-----|--------|---------|-------------|-------|
|     | Min.   | Max.   | Min.        | Max. |     | Min.   | Max.    | Min.        | Max.  |
| A   | 0.1356 | 0.1457 | 3.44        | 3.70 | I   | -      | *0.1795 | -           | *4.56 |
| B   | 0.0170 | 0.0272 | 0.43        | 0.69 | J   | 0.0268 | 0.0331  | 0.68        | 0.84  |
| C   | 0.0344 | 0.0444 | 0.87        | 1.12 | K   | 0.5512 | 0.5906  | 14.00       | 15.00 |
| D   | 0.0501 | 0.0601 | 1.27        | 1.52 | L   | 0.2903 | 0.3003  | 7.37        | 7.62  |
| E   | 0.1131 | 0.1231 | 2.87        | 3.12 | M   | 0.1378 | 0.1478  | 3.50        | 3.75  |
| F   | 0.0737 | 0.0837 | 1.87        | 2.12 | N   | 0.1525 | 0.1625  | 3.87        | 4.12  |
| G   | 0.0294 | 0.0494 | 0.74        | 1.25 | O   | 0.0740 | 0.0842  | 1.88        | 2.14  |
| H   | 0.0462 | 0.0562 | 1.17        | 1.42 |     |        |         |             |       |

Notes: 1.Dimension and tolerance based on our Spec. dated Mar. 6,1995.

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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