

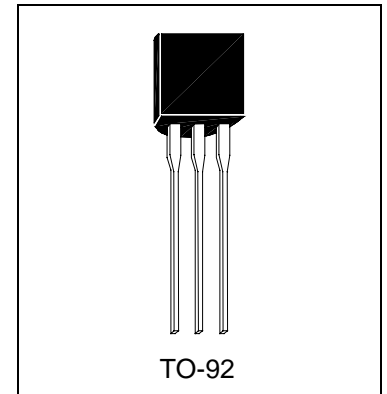


HSD1616A

NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HSD1616A is designed for audio frequency power amplifier and medium speed switching 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) 750 mW
- Maximum Voltages and Currents (Ta=25°C)
 VCBO Collector to Base Voltage 120 V
 VCEO Collector to Emitter Voltage 60 V
 VEBO Emitter to Base Voltage 6 V
 IC Collector Current (DC) 1 A
 IC Collector Current *(Pulse) 2 A

Characteristics (Ta=25°C)

| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------|------|------|------|------|-----------------------|
| BVCBO | 120 | - | - | V | IC=100uA |
| BVCEO | 60 | - | - | V | IC=1mA |
| BVEBO | 6 | - | - | V | IE=10uA |
| ICBO | - | - | 100 | nA | VCB=60V |
| IEBO | - | - | 100 | nA | VEB=6V |
| *VCE(sat) | - | 150 | 300 | mV | IC=1A, IB=50mA |
| *VBE(sat) | - | 0.9 | 1.2 | V | IC=1A, IB=50mA |
| VBE(on) | 600 | - | 700 | mV | VCE=2V, IC=50mA |
| *hFE1 | 135 | - | 600 | | VCE=2V, IC=100mA |
| *hFE2 | 81 | - | - | | VCE=2V, IC=1A |
| fT | 100 | 160 | - | MHz | VCE=2V, IC=100mA |
| Cob | - | - | 19 | pF | IE=0, VCB=10V, f=1MHz |
| ton | - | 0.07 | - | uS | VCE=10V, IC=100mA |
| ts | - | 0.95 | - | uS | IB1=-IB2=10mA |
| tf | - | 0.07 | - | uS | VBE(off)=-2~-3V |

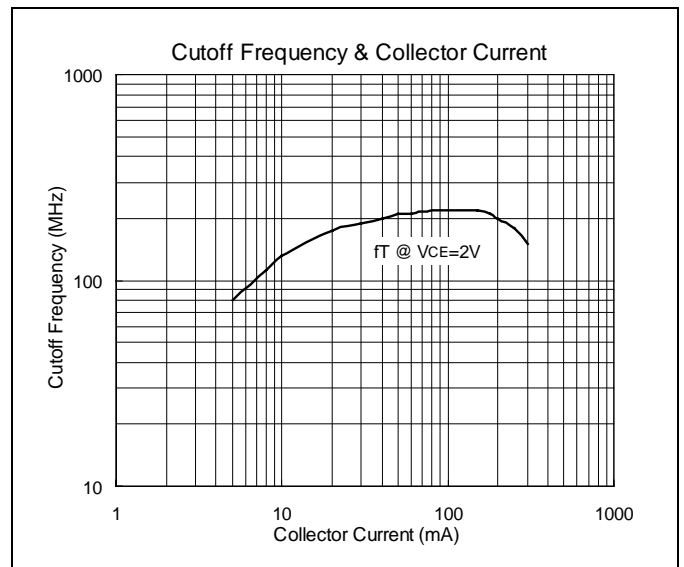
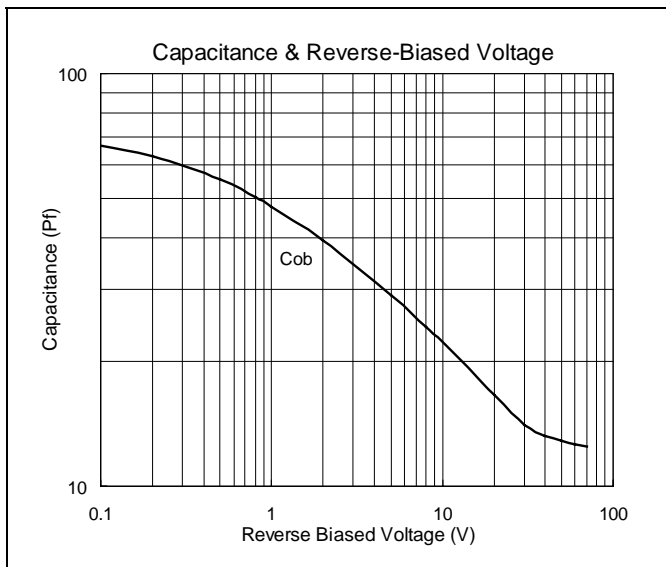
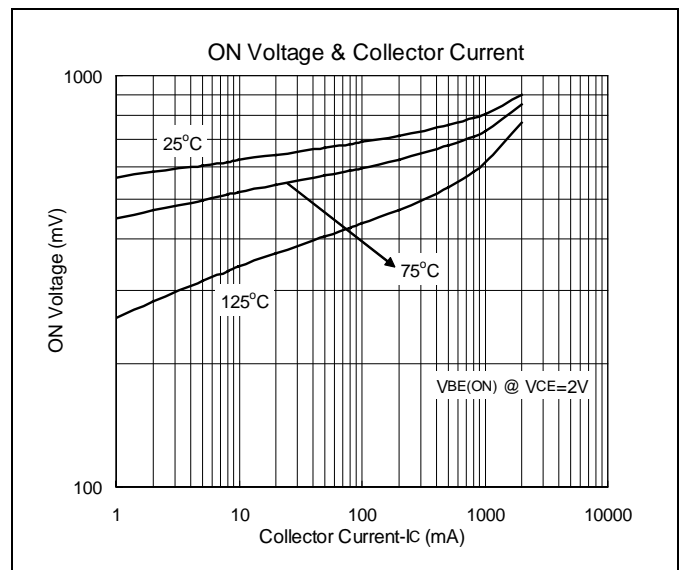
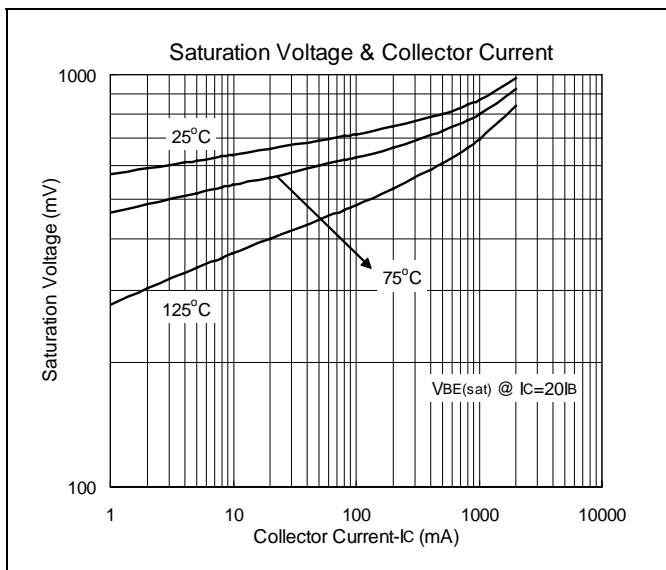
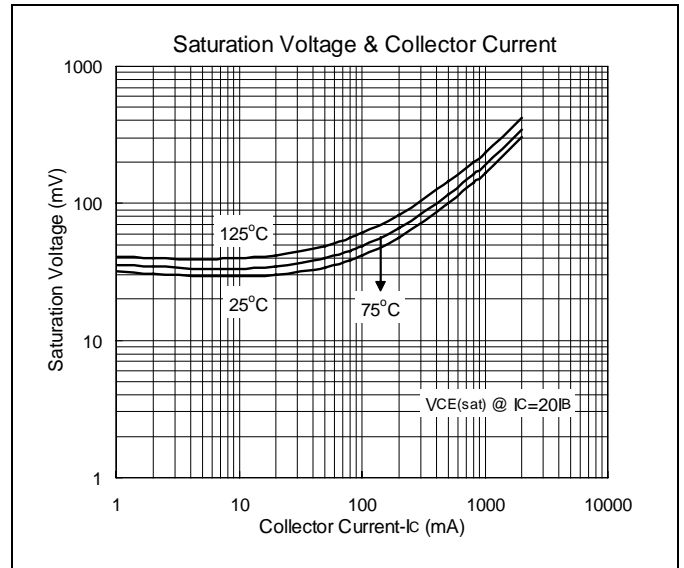
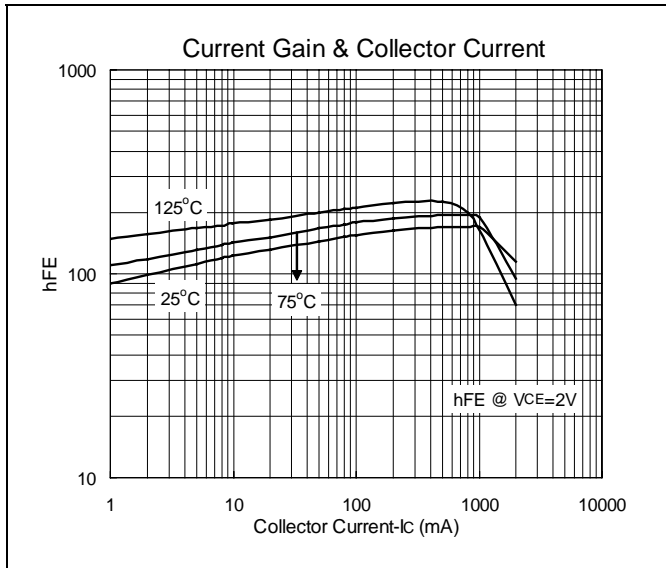
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

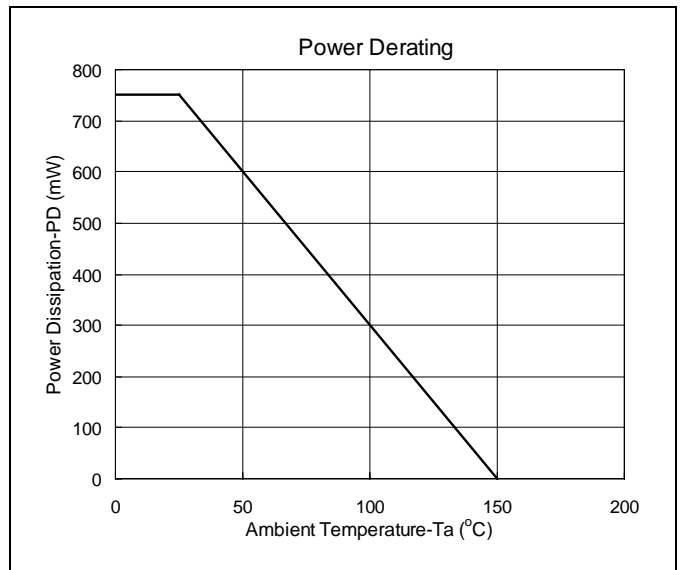
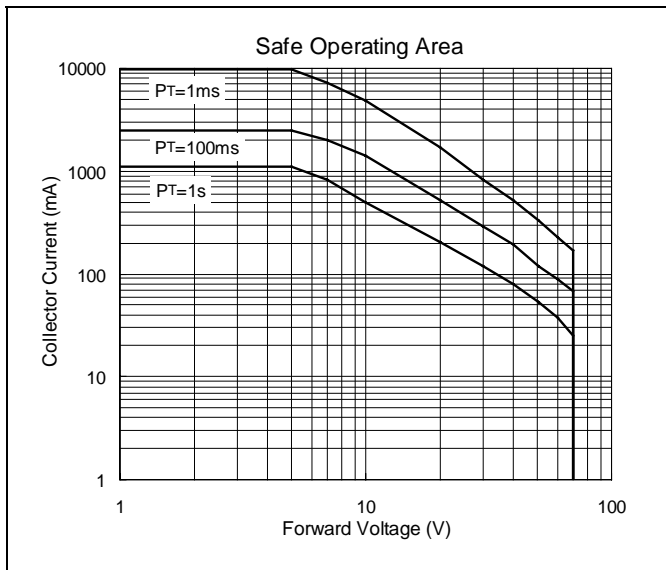
Classification of hFE1

| Rank | Y | G | L |
|-------|---------|---------|---------|
| Range | 135-270 | 200-400 | 300-600 |



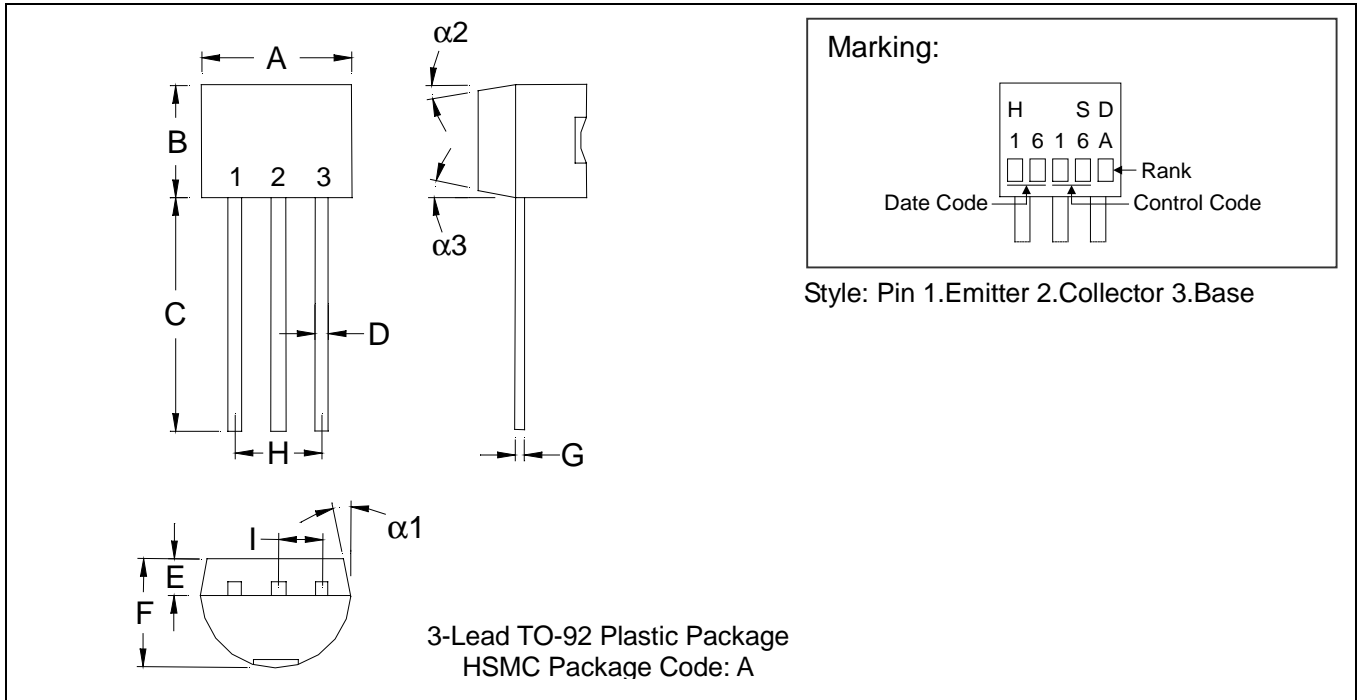
Characteristics Curve







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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