

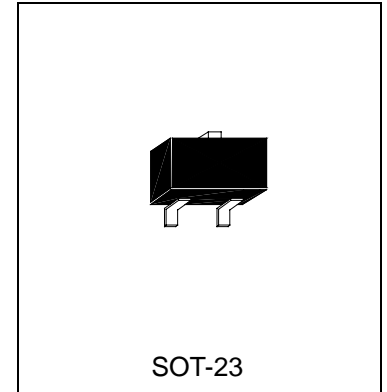


HMBT468

NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HMBT468 is designed for general purpose low frequency power amplifier applications.



Absolute Maximum Ratings

- Maximum Temperatures
 - Storage Temperature -55 ~ +150 °C
 - Junction Temperature 150 °C Maximum
- Maximum Power Dissipation
 - Total Power Dissipation (T_A=25°C) 225 mW
- Maximum Voltages and Currents (T_A=25°C)
 - V_{CBO} Collector to Base Voltage 25 V
 - V_{CEO} Collector to Emitter Voltage 20 V
 - V_{EBO} Emitter to Base Voltage 5 V
 - I_C Collector Current 1 A

Electrical Characteristics (T_A=25°C)

| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------------------|------|------|------|------|---|
| BV _{CBO} | 25 | - | - | V | I _C =10uA, I _E =0 |
| BV _{CEO} | 20 | - | - | V | I _C =1mA, I _B =0 |
| BV _{EBO} | 5 | - | - | V | I _E =10uA, I _C =0 |
| I _{CBO} | - | - | 1 | uA | V _{CB} =20V, I _E =0 |
| *V _{CE(sat)} | - | - | 500 | mV | I _C =0.8A, I _B =80mA |
| V _{BE(on)} | - | - | 1 | V | V _{CE} =2V, I _C =500mA |
| *h _{FE} | 85 | - | 400 | | V _{CE} =2V, I _C =500mA |
| f _T | - | 190 | - | MHz | V _{CE} =2V, I _C =500mA |
| Cob | - | 22 | - | pF | V _{CB} =10V, f=1MHz, I _E =0 |

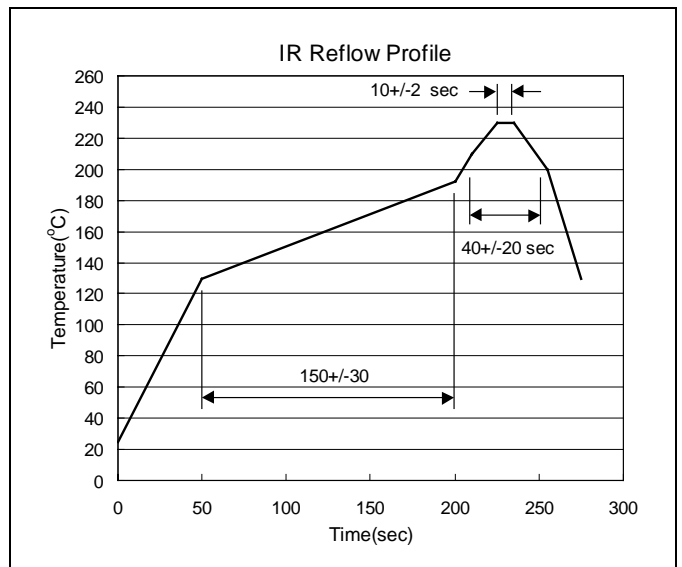
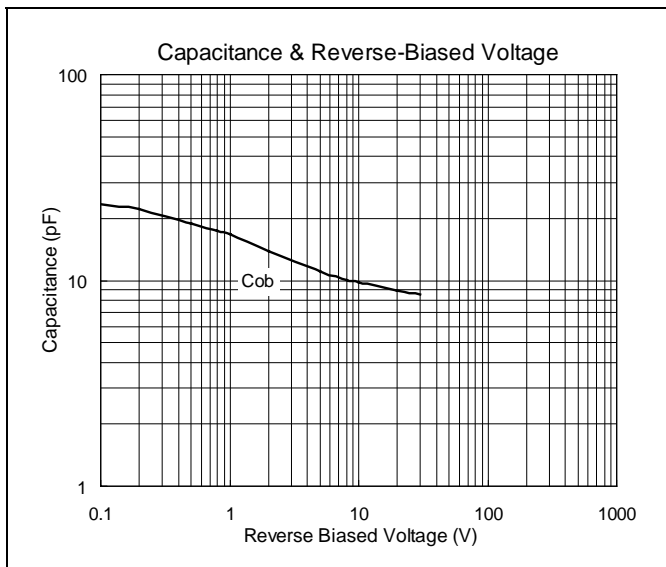
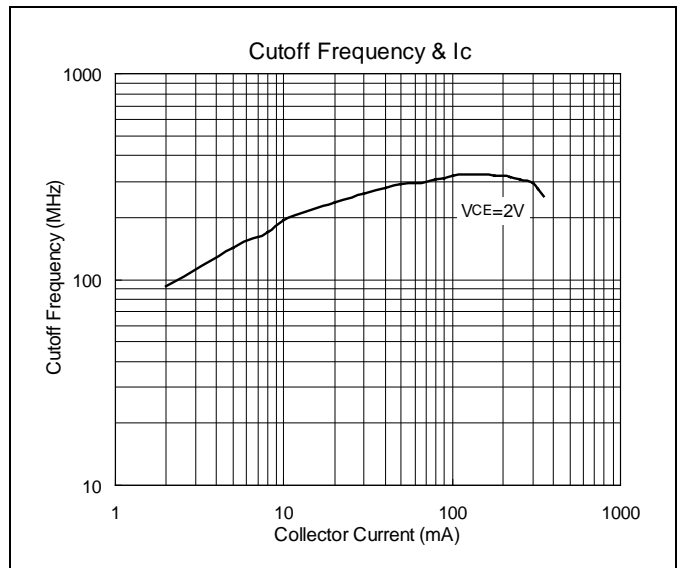
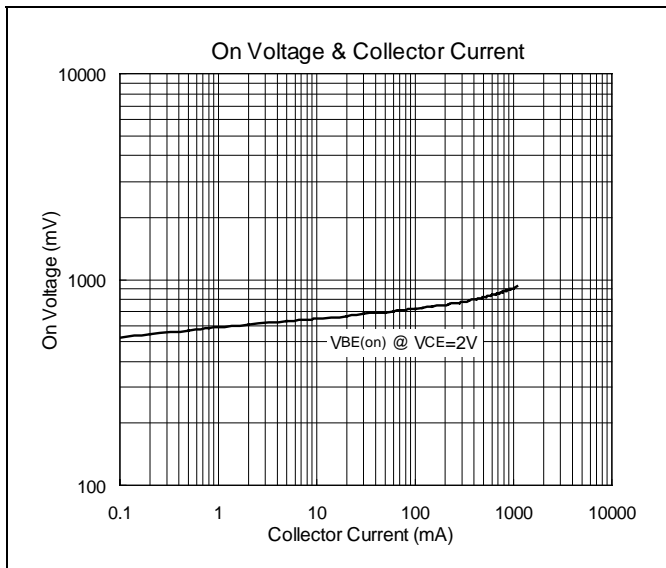
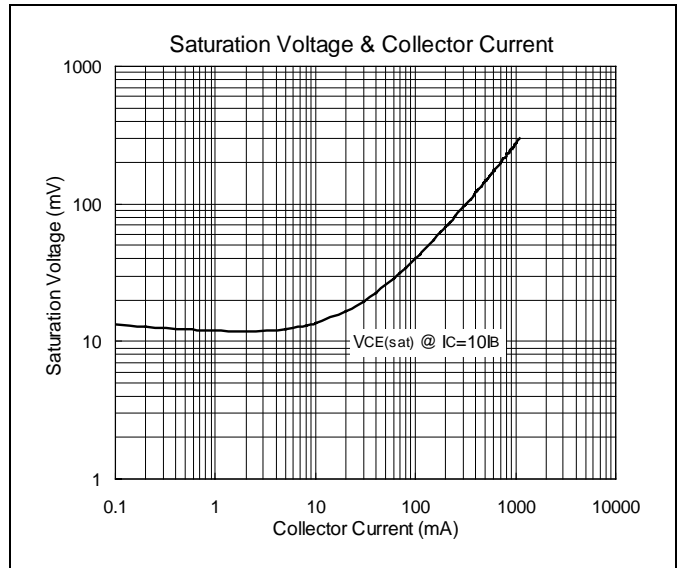
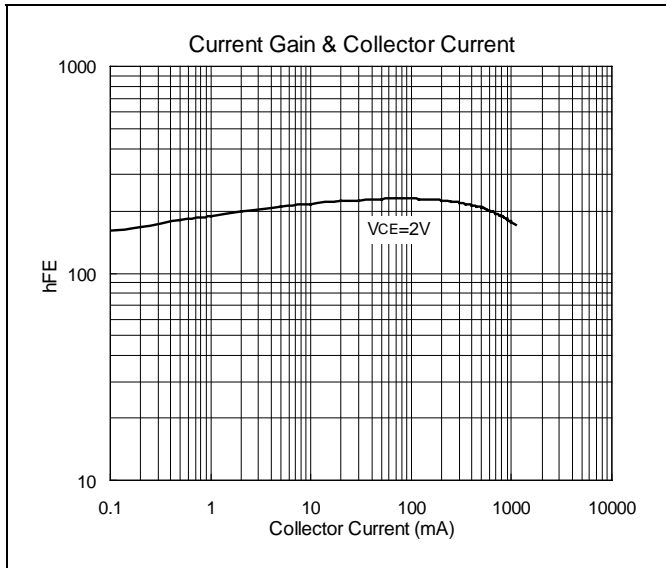
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

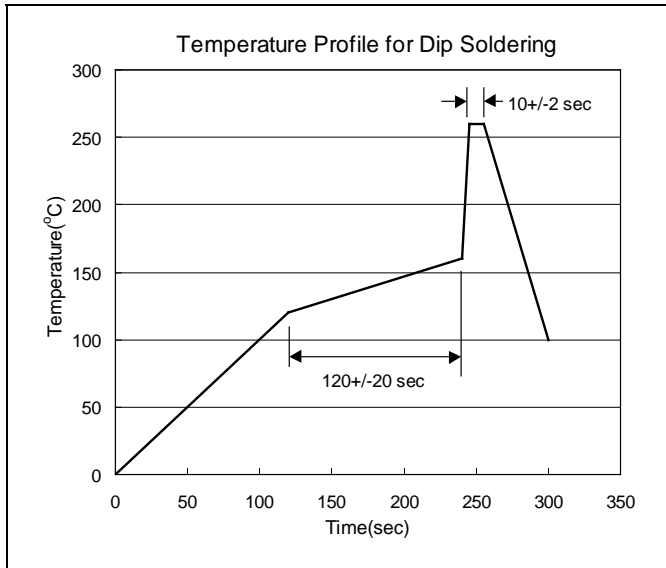
Classification of hFE

| Rank | B | C | D |
|-------|--------|---------|---------|
| Range | 85-170 | 120-240 | 200-400 |



Characteristics Curve







SOT-23 Dimension

3-Lead SOT-23 Plastic
 Surface Mounted Package
 HSMC Package Code: N

Marking:

Pb Free Mark
 Pb-Free: "●" (Note)
 Normal: None

Note: Pb-free product can distinguish by the green label or the extra description on the right side of the label.

Pin Style: 1.Base 2.Emitter 3.Collector

Material:

- Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

| DIM | Min. | Max. |
|-----|-------|-------|
| A | 2.80 | 3.04 |
| B | 1.20 | 1.60 |
| C | 0.89 | 1.30 |
| D | 0.30 | 0.50 |
| G | 1.70 | 2.30 |
| H | 0.013 | 0.10 |
| J | 0.085 | 0.177 |
| K | 0.32 | 0.67 |
| L | 0.85 | 1.15 |
| S | 2.10 | 2.75 |
| V | 0.25 | 0.65 |

*: Typical, Unit: mm

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Head Office And Factory:

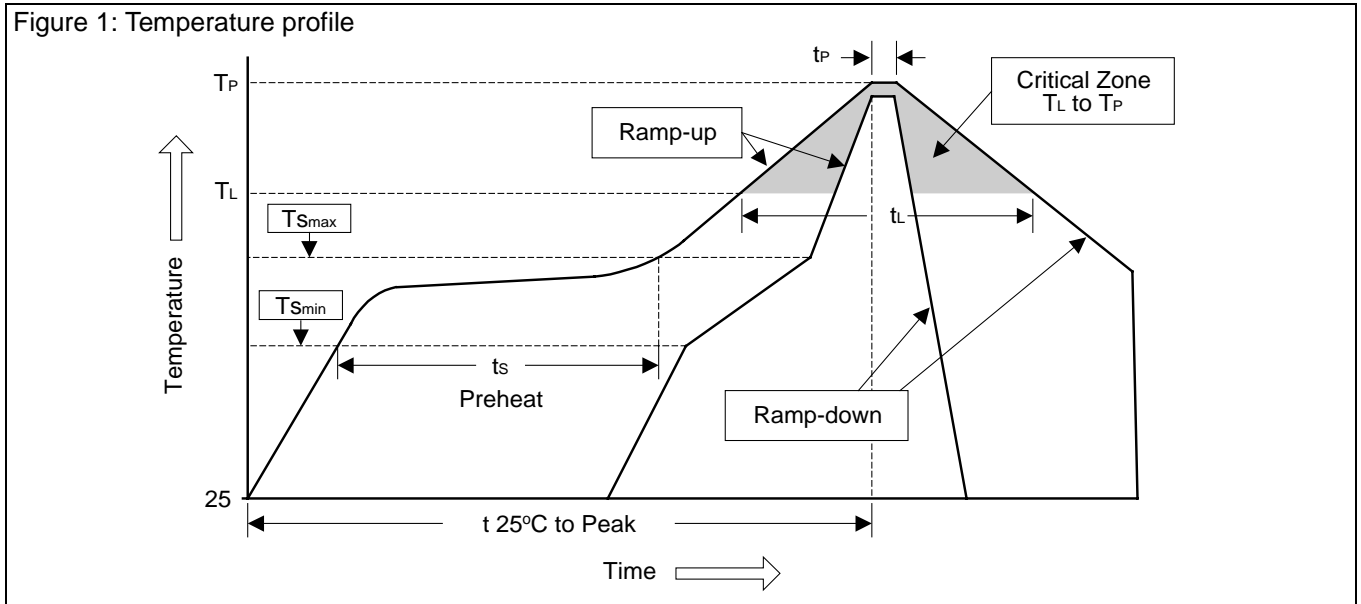
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Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices

Figure 1: Temperature profile



| Profile Feature | Sn-Pb Eutectic Assembly | Pb-Free Assembly |
|--|-------------------------|------------------|
| Average ramp-up rate (T_L to T_P) | <3°C/sec | <3°C/sec |
| Preheat | | |
| - Temperature Min (T_{Smin}) | 100°C | 150°C |
| - Temperature Max (T_{Smax}) | 150°C | 200°C |
| - Time (min to max) (t_s) | 60~120 sec | 60~180 sec |
| T_{Smax} to T_L | | |
| - Ramp-up Rate | <3°C/sec | <3°C/sec |
| Time maintained above: | | |
| - Temperature (T_L) | 183°C | 217°C |
| - Time (t_L) | 60~150 sec | 60~150 sec |
| Peak Temperature (T_P) | 240°C +0/-5°C | 260°C +0/-5°C |
| Time within 5°C of actual Peak Temperature (t_P) | 10~30 sec | 20~40 sec |
| Ramp-down Rate | <6°C/sec | <6°C/sec |
| Time 25°C to Peak Temperature | <6 minutes | <8 minutes |

3. Flow (wave) soldering (solder dipping)

| Products | Peak temperature | Dipping time |
|------------------|------------------|--------------|
| Pb devices. | 245°C ±5°C | 5sec ±1sec |
| Pb-Free devices. | 260°C +0/-5°C | 5sec ±1sec |