



HTIP107

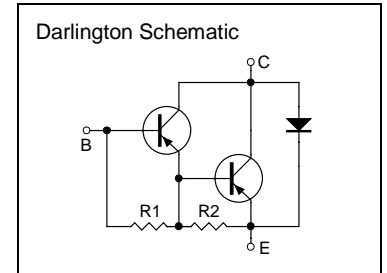
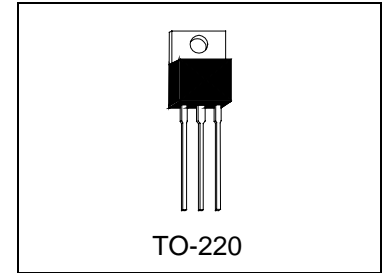
PNP EPITAXIAL PLANAR TRANSISTOR

Description

The HTIP107 is designed for use in general purpose amplifier and low-speed switching applications.

Absolute Maximum Ratings (T_A=25°C)

- Maximum Temperatures
 - Storage Temperature -55 ~ +150 °C
 - Junction Temperature +150 °C Maximum
- Maximum Power Dissipation
 - Total Power Dissipation (T_C=25°C) 80 W
 - Total Power Dissipation (T_A=25°C) 2 W
- Maximum Voltages and Currents
 - BV_{CBO} Collector to Base Voltage -100 V
 - BV_{CEO} Collector to Emitter Voltage -100 V
 - BV_{EBO} Emitter to Base Voltage -5 V
 - I_C Collector Current -8 A



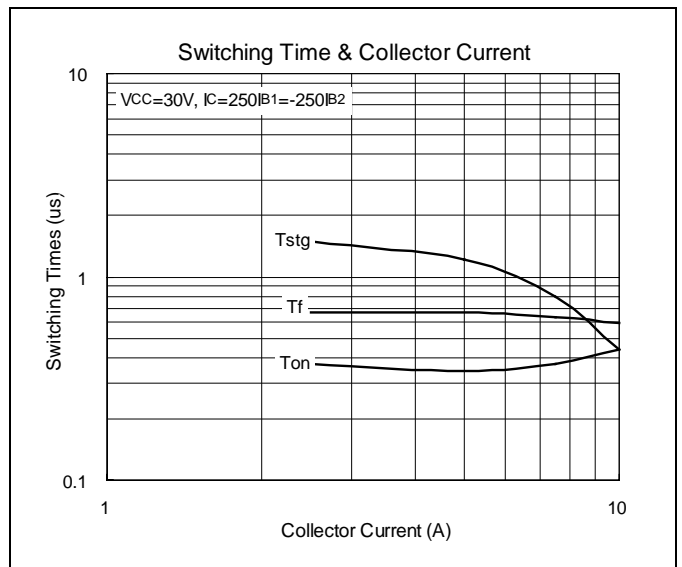
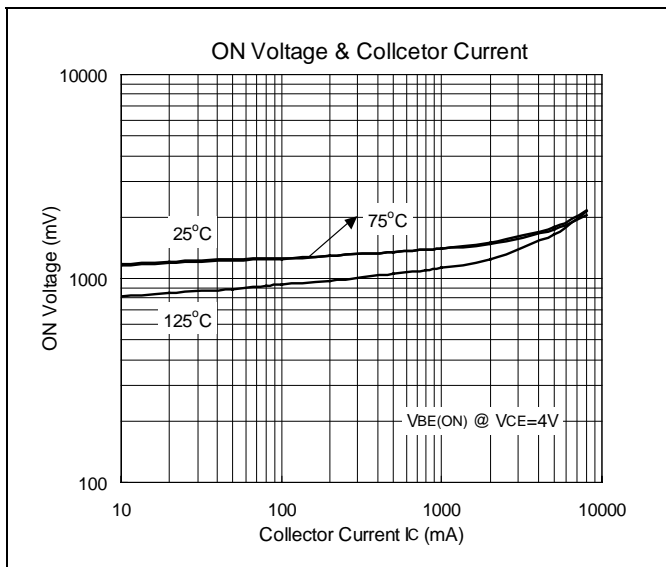
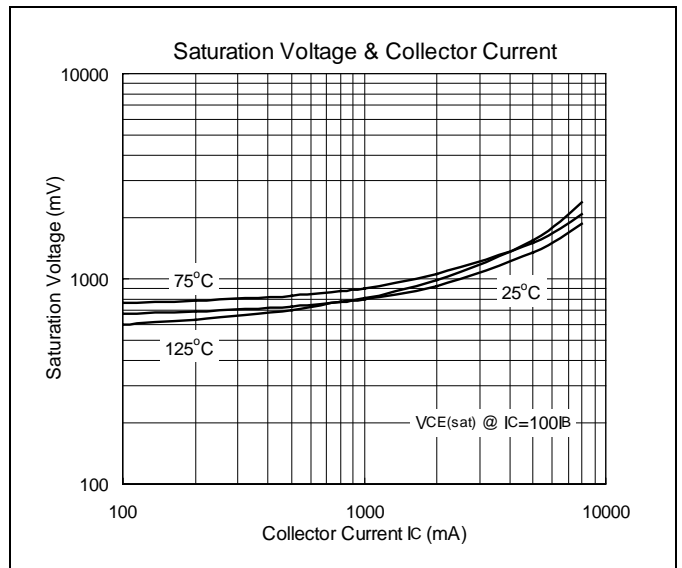
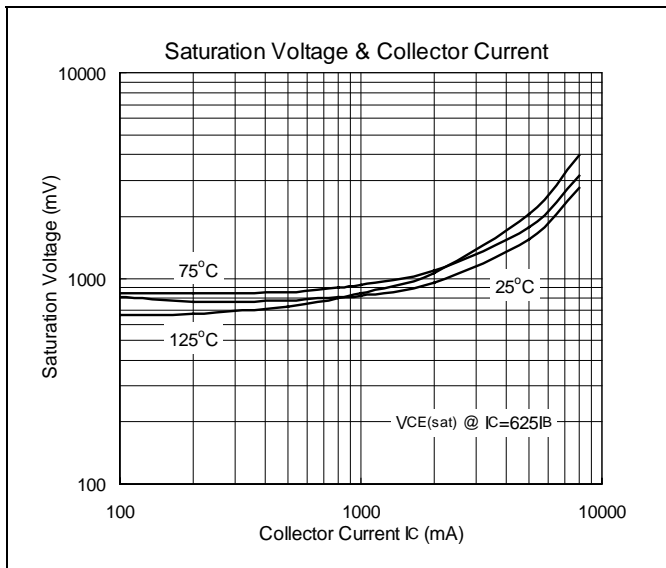
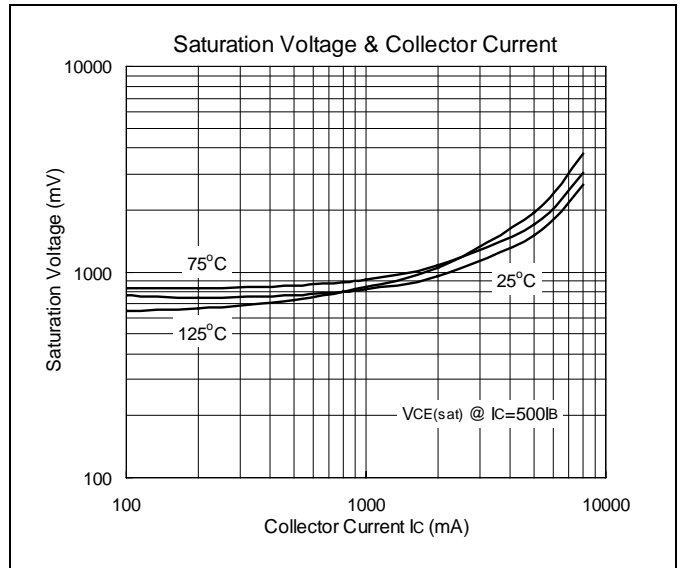
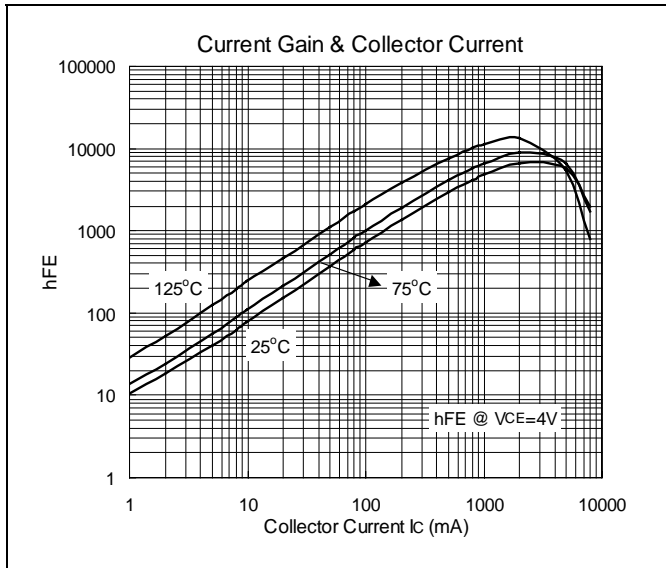
Electrical Characteristics (T_A=25°C)

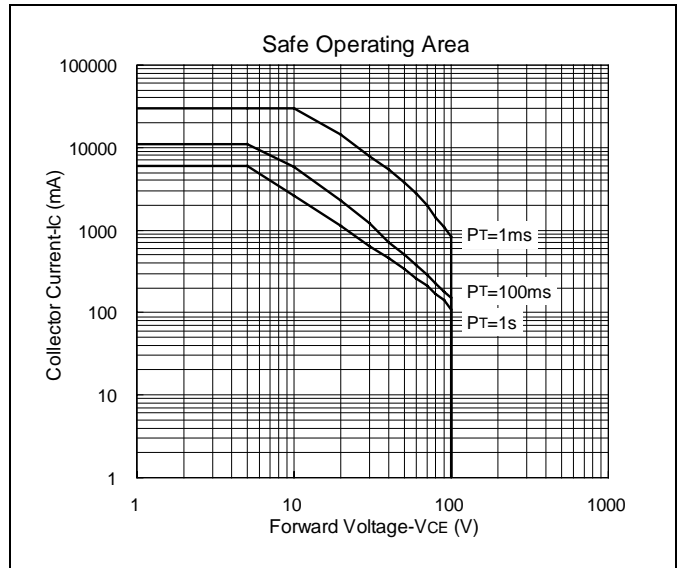
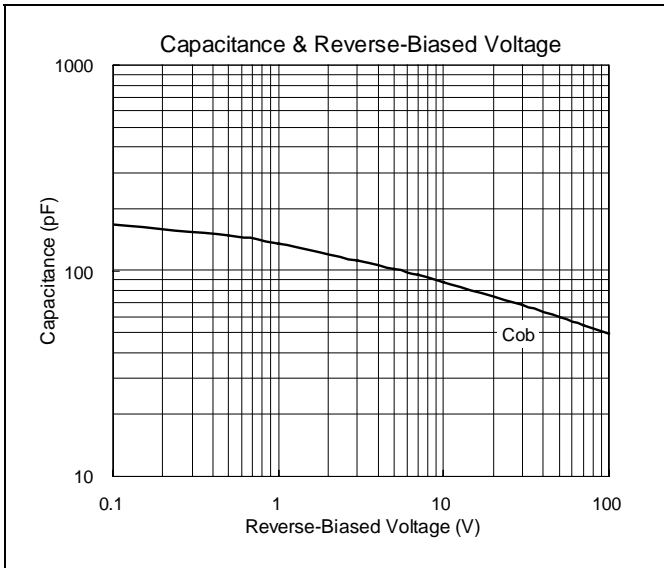
| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|------------------------|------|------|------|------|--|
| BV _{CBO} | -100 | - | - | V | I _C =-1mA, I _E =0 |
| I _{CBO} | - | - | -50 | uA | V _{CB} =-100V, I _E =0 |
| I _{CEO} | - | - | -50 | uA | V _{CE} =-50V, I _B =0 |
| I _{EBO} | - | - | -8 | mA | V _{EB} =-5V, I _C =0 |
| *V _{CE(sat)1} | - | - | -2 | V | I _C =-3A, I _B =-6mA |
| *V _{CE(sat)2} | - | - | -2.5 | V | I _C =-8A, I _B =-80mA |
| *V _{BE(on)} | - | - | -2.8 | V | I _C =-8A, V _{CE} =-4V |
| *h _{FE1} | 1 | - | 20 | K | I _C =-3A, V _{CE} =-4V |
| *h _{FE2} | 200 | - | - | | I _C =-8A, V _{CE} =-4V |
| Cob | - | - | 300 | pF | V _{CB} =-10V, f=0.1MHz |

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



Characteristics Curve







TO-220AB Dimension

3-Lead TO-220AB
 Plastic Package
 HSMC Package Code: E

Marking:

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

Date Code Control Code

Note: Green label is used for pb-free packing
 Pin Style: 1.Base 2 & Tab.Collector 3.Emitter
 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 | 5.58 | 7.49 |
| B | 8.38 | 8.90 |
| C | 4.40 | 4.70 |
| D | 1.15 | 1.39 |
| E | 0.35 | 0.60 |
| F | 2.03 | 2.92 |
| G | 9.66 | 10.28 |
| H | - | *16.25 |
| I | - | *3.83 |
| J | 3.00 | 4.00 |
| K | 0.75 | 0.95 |
| L | 2.54 | 3.42 |
| M | 1.14 | 1.40 |
| N | - | *2.54 |
| O | 12.70 | 14.27 |
| P | 14.48 | 15.87 |

*: Typical, Unit: mm

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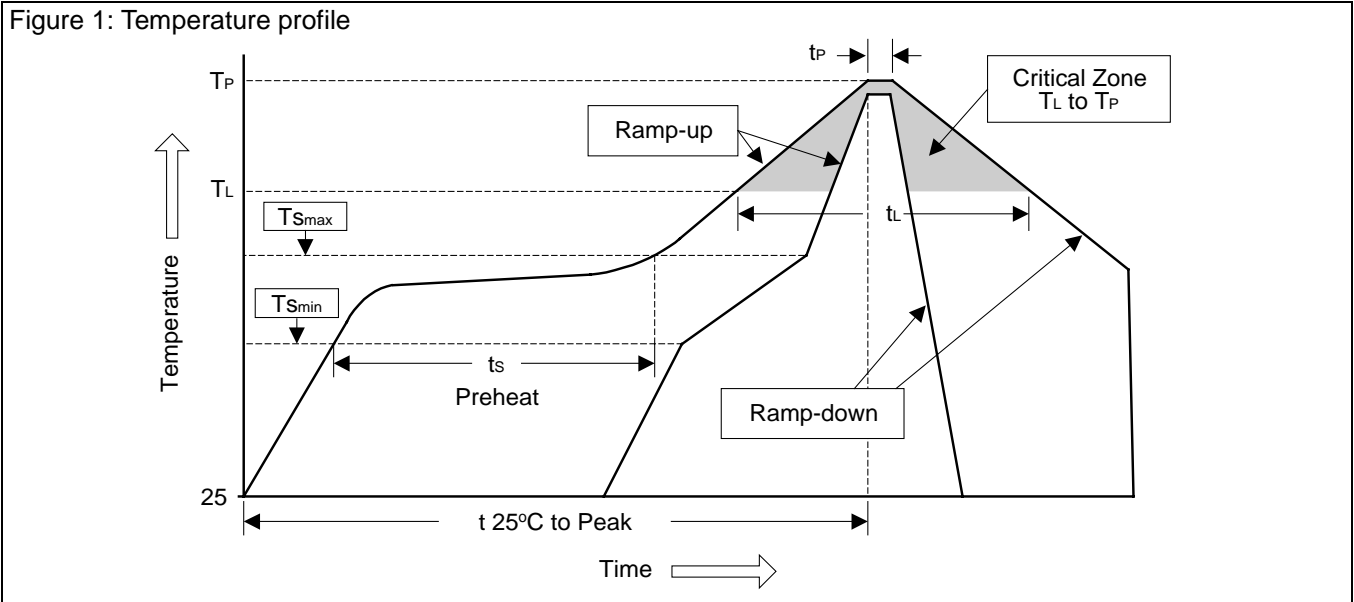
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Soldering Methods for HSMC's Products

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



| 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 |