Silicon NPN Epitaxial

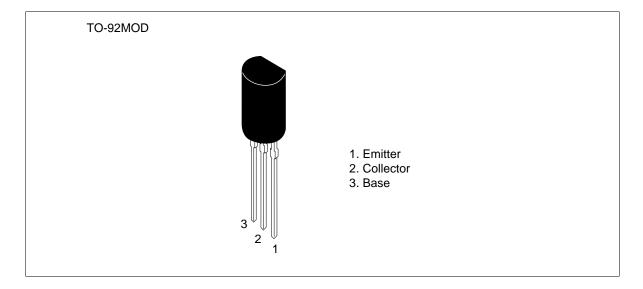
HITACHI

ADE-208-1137 (Z) 1st. Edition Mar. 2001

Application

- Low frequency power amplifier
- Complementary pair with 2SB647/A

Outline





Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | 2SD667 | 2SD667A | Unit |
|------------------------------|----------------------|-------------|-------------|------|
| Collector to base voltage | V_{CBO} | 120 | 120 | V |
| Collector to emitter voltage | V _{CEO} | 80 | 100 | V |
| Emitter to base voltage | V_{EBO} | 5 | 5 | V |
| Collector current | I _c | 1 | 1 | A |
| Collector peak current | i _{C(peak)} | 2 | 2 | A |
| Collector power dissipation | P _c | 0.9 | 0.9 | W |
| Junction temperature | Tj | 150 | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | -50 to +150 | °C |

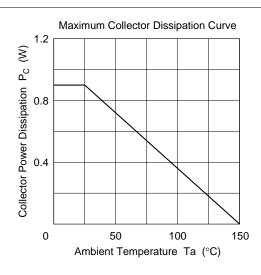
Electrical Characteristics ($Ta = 25^{\circ}C$)

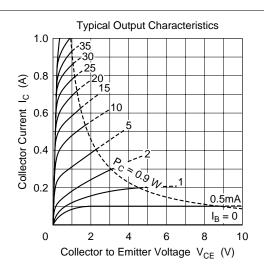
| | | 2SD667A 2SD667A | | | | | | | |
|---|----------------------|-----------------|-----|-----|-----|-----|-----|------|--|
| Item | Symbol | Min | Тур | Max | Min | Тур | Max | Unit | Test conditions |
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 120 | _ | _ | 120 | _ | _ | V | $I_{\rm C} = 10 \ \mu \text{A}, \ I_{\rm E} = 0$ |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | 80 | _ | _ | 100 | _ | _ | V | $I_{\rm C}$ = 1 mA, $R_{\rm BE}$ = ∞ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | 5 | _ | _ | 5 | _ | _ | V | $I_{E} = 10 \mu A, I_{C} = 0$ |
| Collector cutoff current | I _{CBO} | _ | _ | 10 | | _ | 10 | μΑ | V _{CB} = 100 V, I _E = 0 |
| DC current transfer ratio | h _{FE1} *1 | 60 | _ | 320 | 60 | _ | 200 | | $V_{CE} = 5 \text{ V},$ $I_{C} = 150 \text{ mA}^{*2}$ |
| | h _{FE2} | 30 | _ | _ | 30 | _ | _ | | $V_{CE} = 5 \text{ V},$ $I_{C} = 500 \text{ mA}^{*2}$ |
| Collector to emitter saturation voltage | $V_{\text{CE(sat)}}$ | _ | _ | 1 | _ | _ | 1 | V | I _C = 500 mA, I _B = 50 mA* ² |
| Base to emitter voltage | V_{BE} | _ | _ | 1.5 | _ | _ | 1.5 | V | $V_{CE} = 5 \text{ V},$ $I_{C} = 150 \text{ mA}^{*2}$ |
| Gain bandwidth product | f _T | _ | 140 | | _ | 140 | | MHz | $V_{CE} = 5 \text{ V},$ $I_{C} = 150 \text{ mA}^{*2}$ |
| Collector output capacitance | Cob | _ | 12 | _ | _ | 12 | _ | pF | $V_{CB} = 10 \text{ V}, I_{E} = 0,$ f = 1 MHz |

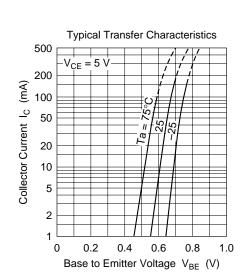
Notes: 1. The 2SD667 and 2SD667A are grouped by h_{FE1} as follows.

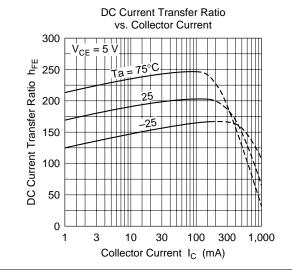
2. Pulse test

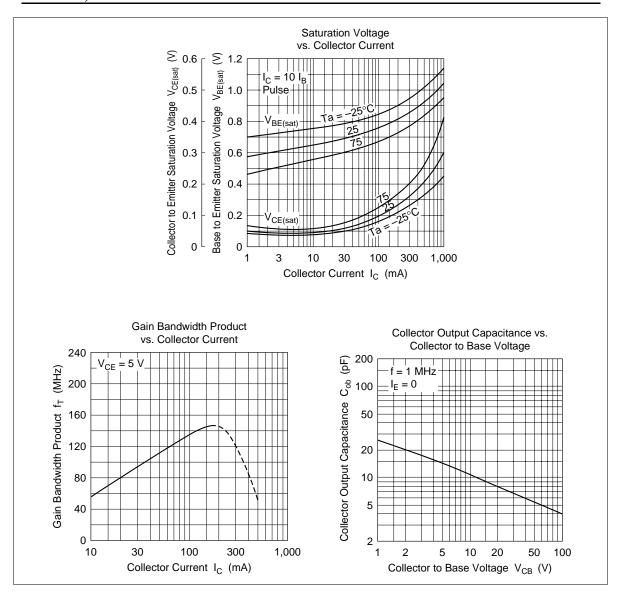
| | В | С | D |
|---------|-----------|------------|------------|
| 2SD667 | 60 to 120 | 100 to 200 | 160 to 320 |
| 2SD667A | 60 to 120 | 100 to 200 | |



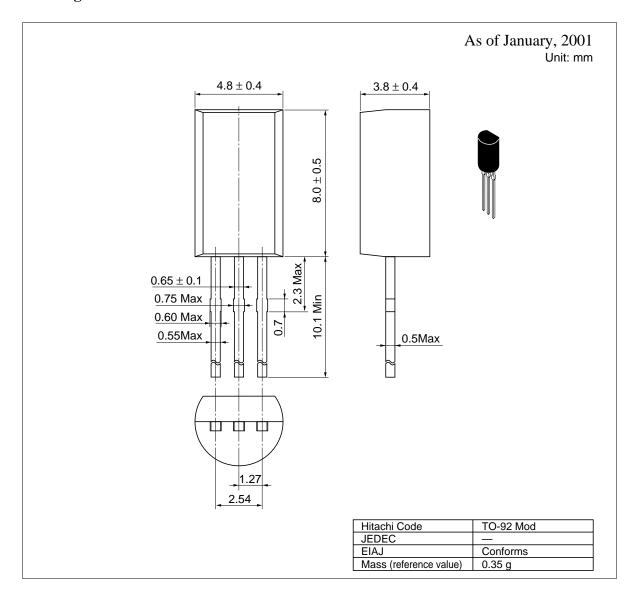








Package Dimensions



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