

SILICON PNP POWER DARLINGTON TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- PNP DARLINGTON
- INTEGRATED ANTIPARALLEL COLLECTOR-EMITTER DIODE

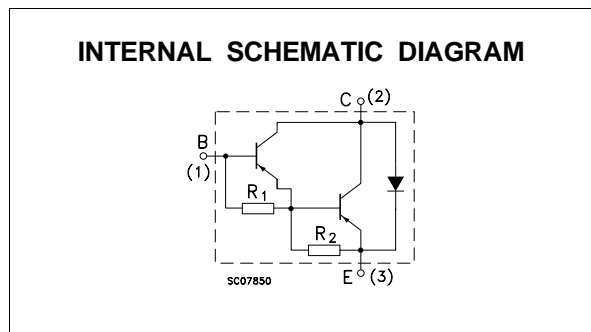
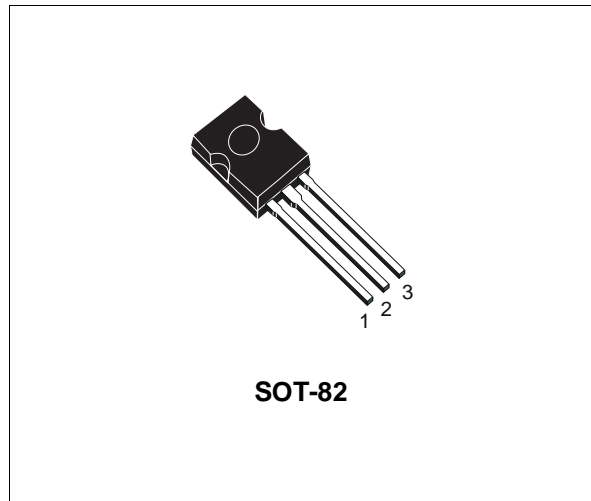
APPLICATIONS

- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

DESCRIPTION

The BD336 is a silicon epitaxial-base PNP transistor in Darlington configuration mounted in SOT-82 plastic package.

It is intended for use in audio output stages general amplifier and switching applications.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|------------|------------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | -100 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | -100 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | -5 | V |
| I_C | Collector Current | -6 | A |
| I_{CM} | Collector Peak Current ($t_p < 10ms$) | -10 | A |
| I_B | Base Current | -0.15 | A |
| P_{tot} | Total Dissipation at $T_c \leq 25^\circ C$ | 60 | W |
| T_{stg} | Storage Temperature | -65 to 150 | $^\circ C$ |
| T_j | Max. Operating Junction Temperature | 150 | $^\circ C$ |

BD336

THERMAL DATA

| | | | | |
|-----------------------|----------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 2.08 | °C/W |
|-----------------------|----------------------------------|-----|------|------|

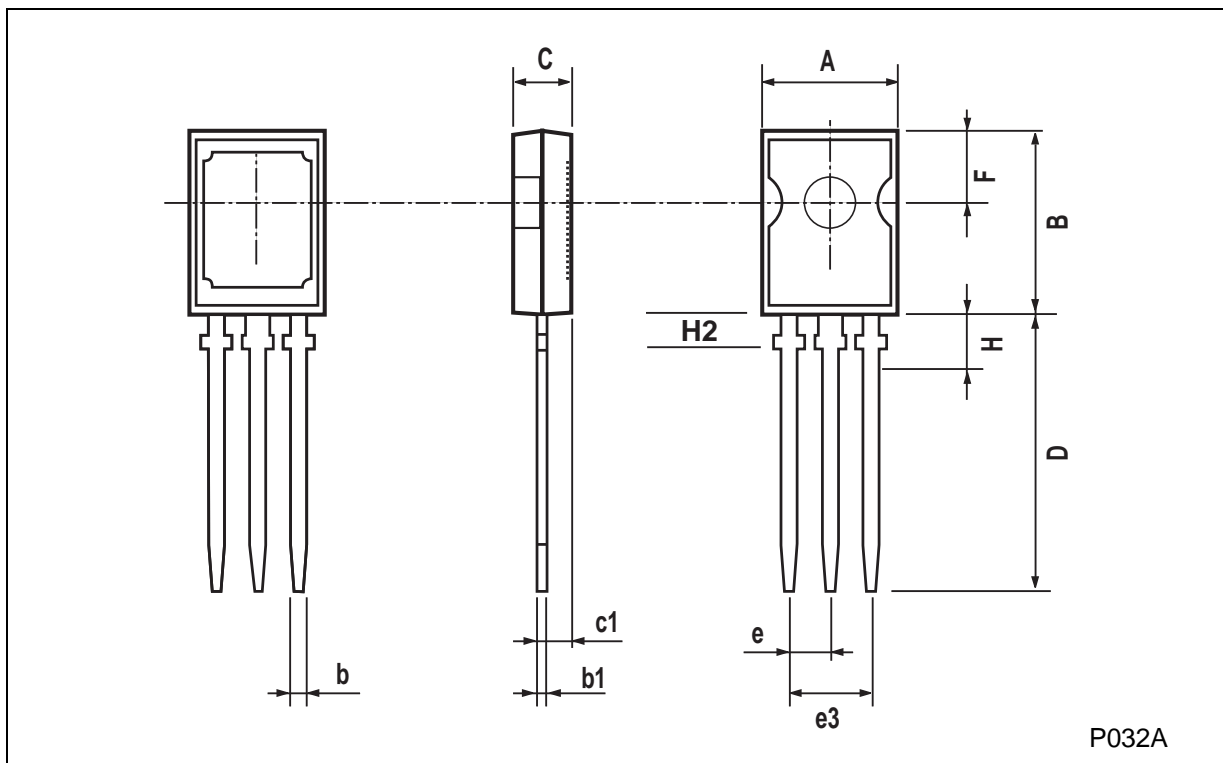
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|--|--|------|-------------|------------|----------|
| I _{CB0} | Collector Cut-off Current (I _E = 0) | V _{CB} = -100 V V _{CB} = -100 V T _C = 150 °C | | | -0.2 -2 | mA mA |
| I _{CEO} | Collector Cut-off Current (I _B = 0) | V _{CE} = -50 V | | | -0.5 | mA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = -5 V | | | -5 | mA |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = -3 A I _B = -12 mA | | | -2 | V |
| V _{BE*} | Base-Emitter Voltage | I _C = -3 A V _{CE} = -3 V | | | -2.5 | V |
| h _{FE*} | DC Current Gain | I _C = -0.5 A V _{CE} = -3 V I _C = -3 A V _{CE} = -3 V I _C = -6 A V _{CE} = -3 V | 750 | 2700 400 | | |
| V _{F*} | Parallel Diode Forward Voltage | I _F = -3 A | | -1.8 | | V |
| h _{fe} | Small Signal Current Gain | I _C = -3 A V _{CE} = -3 V f = 1MHz | | 150 | | |
| t _{on} | Turn on Time | I _C = -3 A V _{CC} = -30 V | | 1 | 2 | μs |
| t _{off} | Turn off Time | I _{B1} = -I _{B2} = -12 mA | | 5 | 10 | μs |

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 1.5 %

SOT-82 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 7.4 | | 7.8 | 0.291 | | 0.307 |
| B | 10.5 | | 10.8 | 0.413 | | 0.444 |
| b | 0.7 | | 0.9 | 0.028 | | 0.035 |
| b1 | 0.49 | | 0.75 | 0.019 | | 0.030 |
| C | 2.4 | | 2.7 | 0.04 | | 0.106 |
| c1 | 1.0 | | 1.3 | 0.039 | | 0.05 |
| D | 15.4 | | 16 | 0.606 | | 0.629 |
| e | | 2.2 | | | 0.087 | |
| e3 | 4.15 | | 4.65 | 0.163 | | 0.183 |
| F | | 3.8 | | | 0.150 | |
| H | | | 2.54 | | 0.100 | |
| H2 | | 2.15 | | | 0.084 | |



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