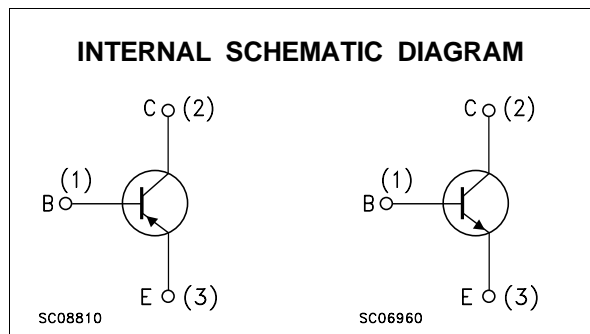
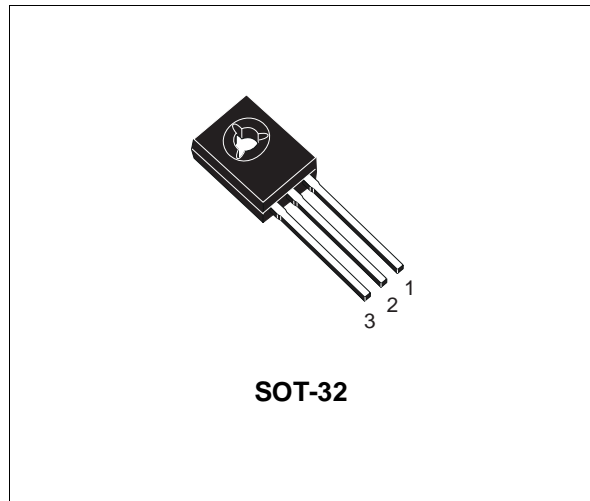


COMPLEMENTARY SILICON POWER TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

DESCRIPTION

The MJE172 (PNP type) and MJE182 (NPN type) are silicon epitaxial planar, complementary transistors in Jedec SOT-32 plastic package, they are designed for low power audio amplifier and low current, high speed switching applications.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|-----------|---|-------|--------|------|
| | | NPN | MJE182 | |
| | | PNP | MJE172 | |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 80 | 80 | V |
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | 100 | 100 | V |
| V_{EBO} | Base-Emitter Voltage ($I_C = 0$) | 7 | 7 | V |
| I_C | Collector Current | 3 | 3 | A |
| I_{CM} | Collector Peak Current | 6 | 6 | A |
| I_B | Base Current | 1 | 1 | A |
| P_{tot} | Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$ | 12.5 | 12.5 | W |

MJE172 - MJE182

THERMAL DATA

| | | | | |
|-----------------------|-------------------------------------|-----|------|------|
| R _{thj-amb} | Thermal Resistance Junction-ambient | Max | 83.4 | °C/W |
| R _{thj-case} | Thermal Resistance Junction-case | Max | 10 | °C/W |

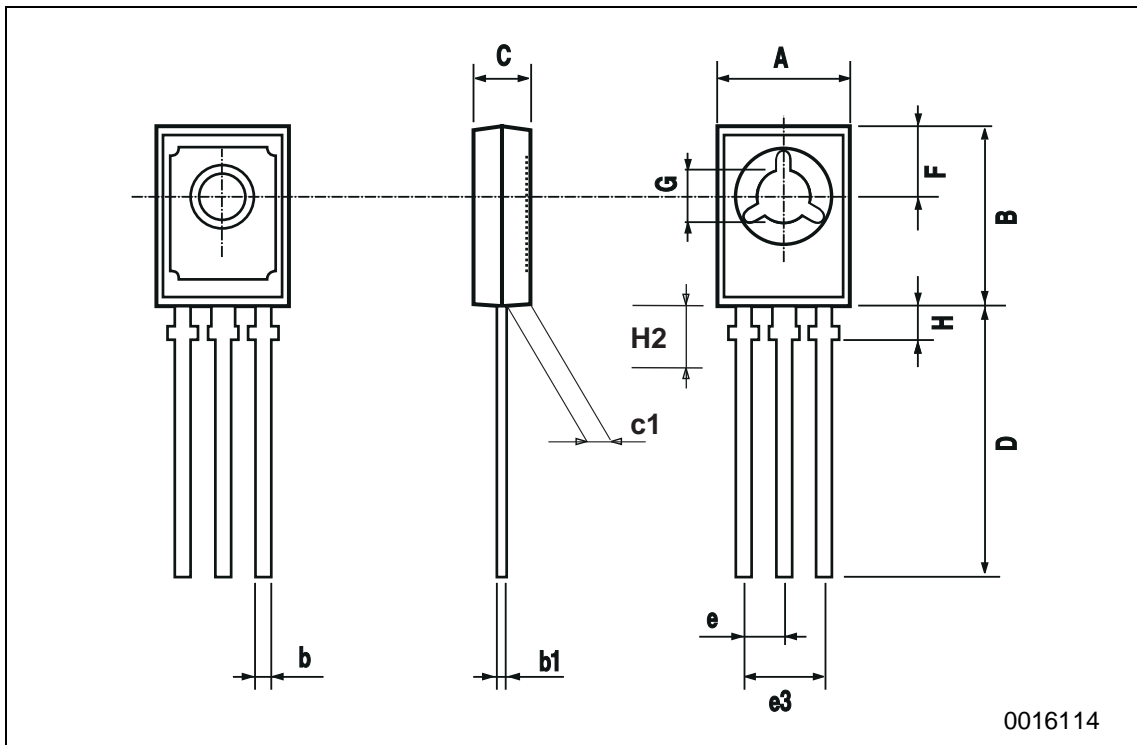
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------|--|--|------|----------------|-------------------|-------------|
| I _{CBO} | Collector Cut-off Current (I _E = 0) | V _{CB} = rated V _{CBO} T _{CASE} = 150°C | | | 0.1 0.1 | μA mA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 7 V | | | 0.1 | μA |
| V _{CEO(sus)*} | Collector-Emitter Sustaining Voltage | I _C = 10 mA | 80 | | | V |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = 0.5 A I _C = 1.5 A I _C = 3 A | | | 0.3 0.9 1.7 | V V V |
| V _{BE(sat)*} | Base-Emitter on Voltage | I _C = 1.5 A I _C = 3 A | | | 1.5 2 | V V |
| V _{BE*} | Base-Emitter on Voltage | I _C = 0.5 A | | | 1.2 | V |
| h _{FE} | DC Current Gain | I _C = 0.1 A I _C = 0.5 A I _C = 1.5 A | | 50 30 12 | 250 | |
| f _T | Transistor Frequency | I _C = 0.1 A f = 10 MHz | | 50 | | MHz |
| C _{CBO} | Collector-base Capacitance | V _{CB} = 10 V I _E = 0 f = 0.1MHz for MJE172 for MJE182 | | | 60 40 | pF pF |

* Pulsed: Pulse duration = 300μs, duty cycle ≤ 1.5%
For PNP type voltage and current values are negative.

SOT-32 (TO-126) 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 | | 0.445 |
| b | 0.7 | | 0.9 | 0.028 | | 0.035 |
| b1 | 0.49 | | 0.75 | 0.019 | | 0.030 |
| C | 2.4 | | 2.7 | 0.040 | | 0.106 |
| c1 | 1.0 | | 1.3 | 0.039 | | 0.050 |
| D | 15.4 | | 16.0 | 0.606 | | 0.629 |
| e | | 2.2 | | | 0.087 | |
| e3 | 4.15 | | 4.65 | 0.163 | | 0.183 |
| F | | 3.8 | | | 0.150 | |
| G | 3 | | 3.2 | 0.118 | | 0.126 |
| H | | | 2.54 | | | 0.100 |
| H2 | | 2.15 | | | 0.084 | |



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