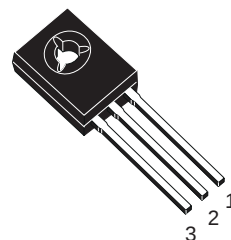


## SILICON NPN TRANSISTOR

### ■ SGS-THOMSON PREFERRED SALESTYPE

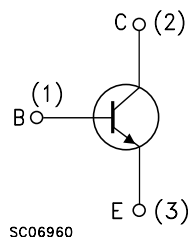
#### DESCRIPTION

The MJE521 is a silicon epitaxial-base NPN transistor in Jedec SOT-32 plastic package, intended for use in 5 to 20W audio amplifiers, general purpose amplifier and switching circuits.



**SOT-32**

#### INTERNAL SCHEMATIC DIAGRAM



SC06960

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter                                        | Value       | Unit             |
|-----------|--------------------------------------------------|-------------|------------------|
| $V_{CBO}$ | Collector-Base Voltage ( $I_E = 0$ )             | 40          | V                |
| $V_{CEO}$ | Collector-Emitter Voltage ( $I_B = 0$ )          | 40          | V                |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_C = 0$ )               | 4           | V                |
| $I_C$     | Collector Current                                | 4           | A                |
| $I_{CM}$  | Collector Peak Current                           | 8           | A                |
| $I_B$     | Base Current                                     | 2           | A                |
| $P_{tot}$ | Total Dissipation at $T_c \leq 25^\circ\text{C}$ | 40          | W                |
| $T_{stg}$ | Storage Temperature                              | -65 to +150 | $^\circ\text{C}$ |
| $T_j$     | Max. Operating Junction Temperature              | 150         | $^\circ\text{C}$ |

## MJE521

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### THERMAL DATA

|                      |                                     |     |      |      |
|----------------------|-------------------------------------|-----|------|------|
| R <sub>thj-amb</sub> | Thermal Resistance Junction-ambient | Max | 3.12 | °C/W |
|----------------------|-------------------------------------|-----|------|------|

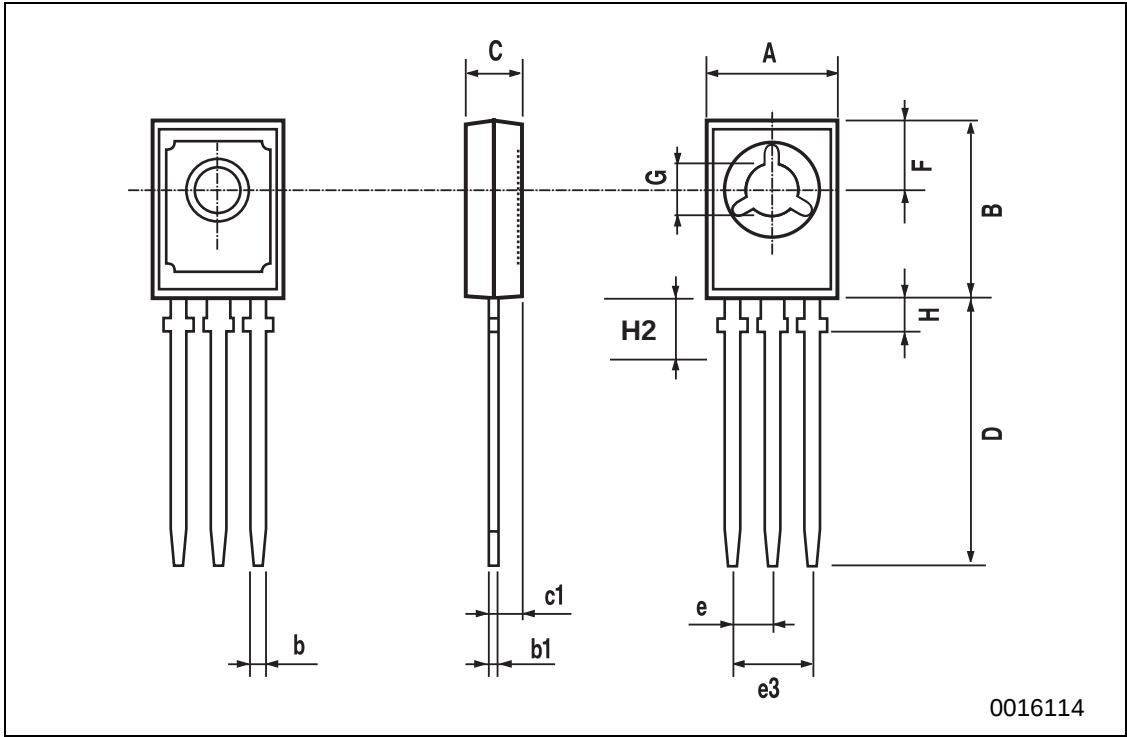
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol                 | Parameter                                                 | Test Conditions                                 | Min. | Typ. | Max. | Unit |
|------------------------|-----------------------------------------------------------|-------------------------------------------------|------|------|------|------|
| I <sub>CBO</sub>       | Collector Cut-off Current (I <sub>E</sub> = 0)            | V <sub>CB</sub> = 40 V                          |      |      | 100  | μA   |
| I <sub>EBO</sub>       | Emitter Cut-off Current (I <sub>C</sub> = 0)              | V <sub>EB</sub> = 4 V                           |      |      | 100  | μA   |
| V <sub>CEO(sus)*</sub> | Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0) | I <sub>C</sub> = 0.1 A                          | 40   |      |      | V    |
| h <sub>FE</sub>        | DC Current Gain                                           | I <sub>C</sub> = 1 A      V <sub>CE</sub> = 1 V | 40   |      |      |      |

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

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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