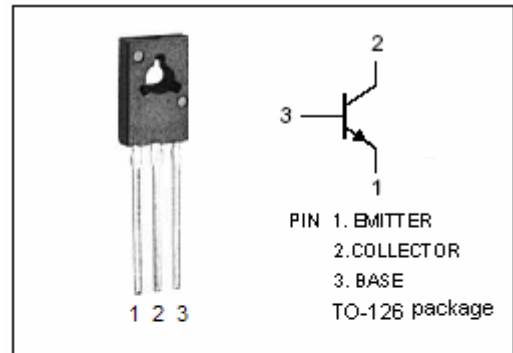


isc Silicon NPN Power Transistor**BD721****DESCRIPTION**

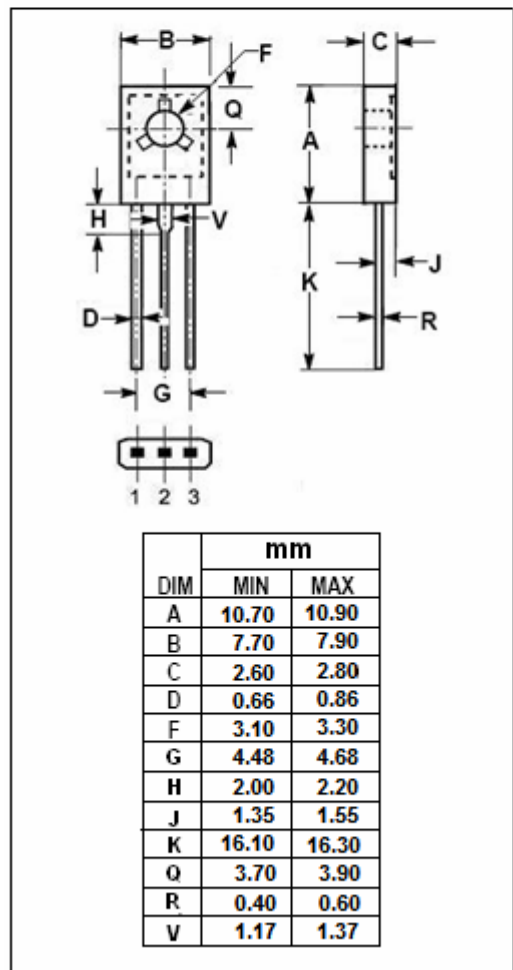
- DC Current Gain-
: $h_{FE} = 40 @ I_C = 0.5A$
- Collector-Emitter Breakdown Voltage -
: $V_{(BR)CEO} = 80V(\text{Min})$
- Complement to type BD722

APPLICATIONS

- Designed for use in audio output and general purpose amplifier applications.

**ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)**

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 80 | V |
| V_{CEO} | Collector-Emitter Voltage | 80 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 4 | A |
| I_{CM} | Collector Current-Peak | 7 | A |
| I_B | Base Current-Continuous | 1 | A |
| P_C | Collector Power Dissipation @ $T_C = 25^\circ\text{C}$ | 30 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -65~150 | $^\circ\text{C}$ |

**THERMAL CHARACTERISTICS**

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|---|-----|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 3.5 | $^\circ\text{C/W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 100 | $^\circ\text{C/W}$ |

isc Silicon NPN Power Transistor

BD721

ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---|-----|------|-----|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=30\text{mA}; I_B=0$ | 80 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=2\text{A}; I_B=0.2\text{A}$ | | | 1.0 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C=2\text{A}; V_{CE}=4\text{V}$ | | | 1.4 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=80\text{V}; I_E=0$ | | | 50 | μA |
| | | $V_{CB}=40\text{V}; I_E=0; T_C=150^{\circ}\text{C}$ | | | 1 | mA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=40\text{V}; I_B=0$ | | | 0.1 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 0.2 | mA |
| h_{FE-1} | DC Current Gain | $I_C=0.5\text{A}; V_{CE}=4\text{V}$ | 40 | | | |
| h_{FE-2} | DC Current Gain | $I_C=2\text{A}; V_{CE}=4\text{V}$ | 20 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C=0.5\text{A}; V_{CE}=4\text{V}$ | 3 | | | MHz |

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Switching Times

| | | | | | | |
|-----------|---------------|--|--|-----|--|---------------|
| t_{on} | Turn-On time | $I_C=1\text{A}; I_{B1}=-I_{B2}=0.1\text{A}; V_{CC}=20\text{V}$ | | 0.3 | | μs |
| t_{off} | Turn-Off time | | | 1.5 | | μs |