

Silicon PNP Darlington Power Transistor

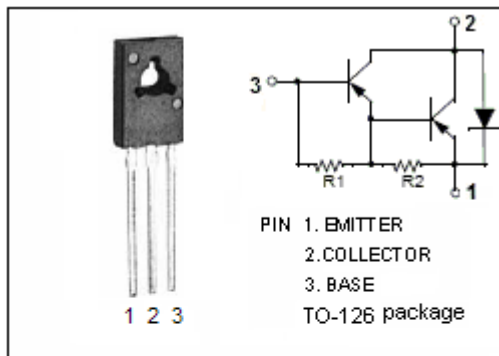
BD680

DESCRIPTION

- Collector–Emitter Breakdown Voltage—
: $V_{(BR)CEO} = -80V$
- DC Current Gain—
: $h_{FE} = 750(\text{Min}) @ I_C = -1.5 A$
- Complement to Type BD679

APPLICATIONS

- Designed for use as output devices in complementary general-purpose amplifier applications.

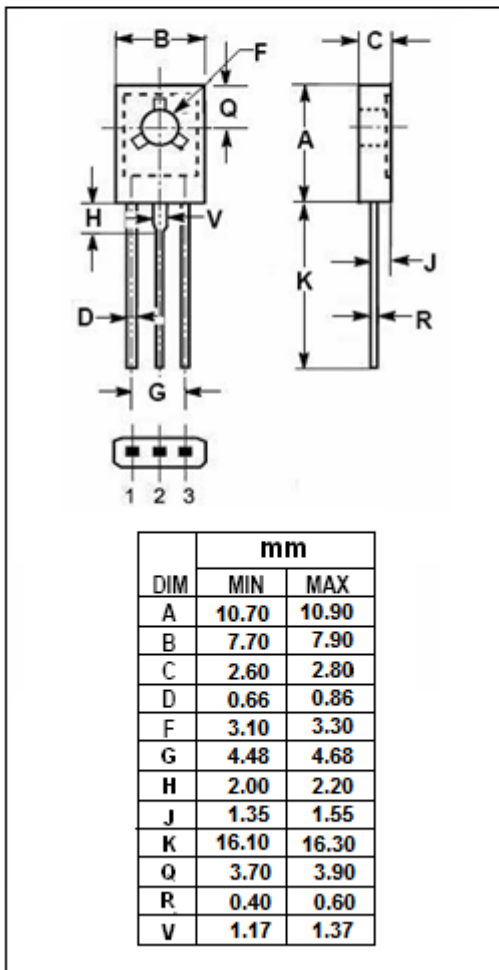


ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ C$)

| 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_B | Base Current | -0.1 | A |
| P_C | Collector Power Dissipation $T_C=25^\circ C$ | 40 | W |
| T_j | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ C$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|--------------|--------------------------------------|------|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 3.13 | $^\circ C/W$ |



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ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---------------|--------------------------------------|---|-----|--------------|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C = -50\text{mA}; I_B = 0$ | -80 | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -1.5\text{A}; I_B = -30\text{mA}$ | | -2.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = -1.5\text{A}; V_{CE} = -3\text{V}$ | | -2.5 | V |
| I_{CEO} | Collector Cutoff Current | $V_{CE} = -80\text{V}; I_B = 0$ | | -0.5 | mA |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = -80\text{V}; I_E = 0$ $V_{CB} = -80\text{V}; I_E = 0; T_C = 100^\circ\text{C}$ | | -0.2 -2.0 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = -5\text{V}; I_C = 0$ | | -2.0 | mA |
| h_{FE} | DC Current Gain | $I_C = -1.5\text{A}; V_{CE} = -3\text{V}$ | 750 | | |