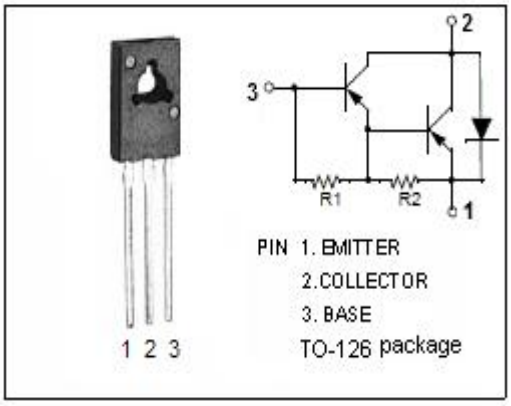
# isc Silicon PNP Darlington Power Transistor BD678A

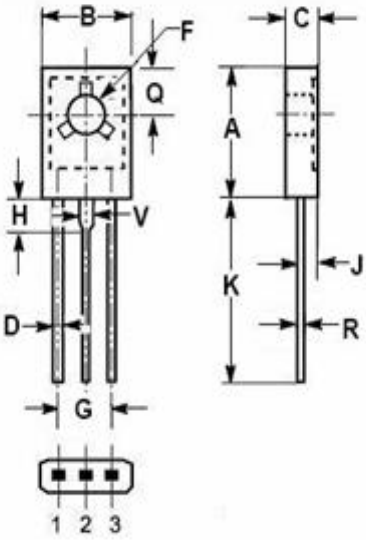



## DESCRIPTION

- Collector–Emitter Breakdown Voltage—
  : $V_{(BR)CEO}$ = -60V
- DC Current Gain—
  : $h_{FE}$ = 750(Min) @ $I_C$= -2 A
- Complement to Type BD677A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

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




| DIM | mm MIN | mm MAX |
|---|---|---|
| A | 10.70 | 10.95 |
| B | 7.70 | 7.90 |
| C | 2.60 | 2.80 |
| D | 0.66 | 0.86 |
| F | 3.10 | 3.30 |
| G | 4.48 | 4.68 |
| H | 2.00 | 2.20 |
| J | 1.35 | 1.55 |
| K | 15.30 | 16.30 |
| Q | 3.70 | 3.90 |
| R | 0.40 | 0.60 |
| V | 1.17 | 1.37 |

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | -60 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | -60 | 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℃ | 40 | W |
| $T_j$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |

## THERMAL CHARACTERISTICS

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

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## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= -50mA; $I_B$= 0 | -60 | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= -2A; $I_B$= -40mA | | -2.8 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= -2A; $V_{CE}$= -3V | | -2.5 | V |
| $I_{CEO}$ | Collector Cutoff Current | $V_{CE}$= -60V; $I_B$= 0 | | -0.5 | mA |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= -60V; $I_E$= 0<br>$V_{CB}$= -60V; $I_E$= 0;$T_C$= 100℃ | | -0.2<br>-2.0 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= -5V; $I_C$= 0 | | -2.0 | mA |
| $h_{FE}$ | DC Current Gain | $I_C$= -2 A ; $V_{CE}$= -3V | 750 | | |