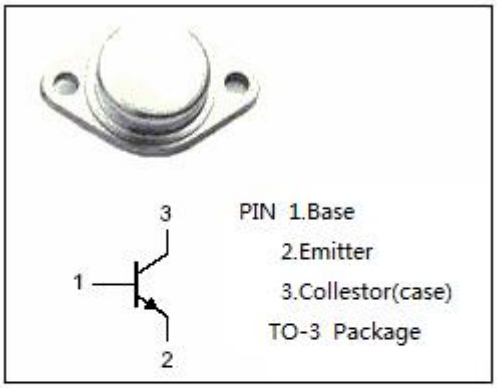
# isc Silicon NPN Power Transistor BDY77

## DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 120V (Min)
- Low Collector-Emitter Saturation Voltage
- Excellent Safe Operating Area
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

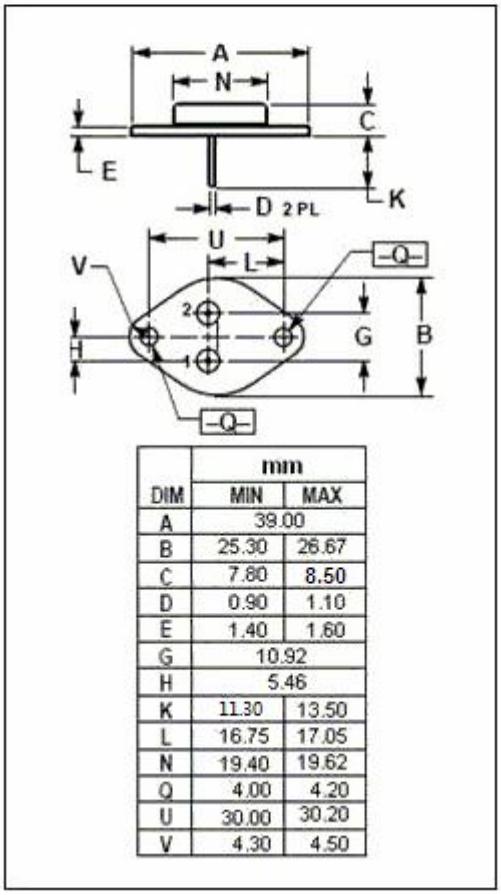



## APPLICATIONS

- Designed for high power audio, disk head positioners, linear amplifiers, switching regulators,solenoid drivers,and DC-DC converters or inverters.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 150 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 120 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current-Continuous | 16 | A |
| $I_{CM}$ | Collector Current-Peak | 30 | A |
| $I_B$ | Base Current-Continuous | 4 | A |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 150 | W |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -65~150 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 39.00 | |
| B | 25.30 | 26.67 |
| C | 7.80 | 8.50 |
| D | 0.90 | 1.10 |
| E | 1.40 | 1.60 |
| G | 10.92 | |
| H | 5.46 | |
| K | 11.30 | 13.50 |
| L | 16.75 | 17.05 |
| N | 19.40 | 19.62 |
| Q | 4.00 | 4.20 |
| U | 30.00 | 30.20 |
| V | 4.30 | 4.50 |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal Resistance,Junction to Case | 1.17 | ℃/W |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C$= 50mA ; $I_B$= 0 | 120 | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C$= 8A; $I_B$= 0.8A | | 1.0 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C$= 16A; $I_B$= 3.2A | | 2.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= 8A ; $V_{CE}$= 2V | | 2.0 | V |
| $I_{CEO}$ | Collector Cutoff Current | $V_{CE}$= 120V; $I_B$= 0 | | 0.5 | mA |
| $I_{CEX}$ | Collector Cutoff Current | $V_{CE}$= 150V; $V_{BE(off)}$= 1.5V | | 2.0 | mA |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 150V; $I_E$= 0 | | 0.2 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 7V; $I_C$= 0 | | 0.1 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 8A ; $V_{CE}$= 4V | 40 | 120 | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 16A ; $V_{CE}$= 4V | 10 | | |