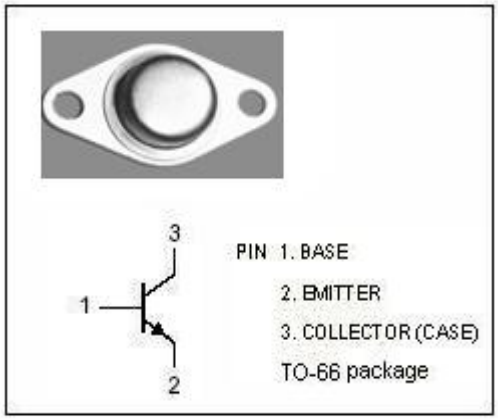
# isc Silicon NPN Power Transistor — BDY71X

## DESCRIPTION

- Continuous Collector Current-$I_C$= 4A
- Collector Power Dissipation-
  : $P_C$= 29W @$T_C$= 25℃
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

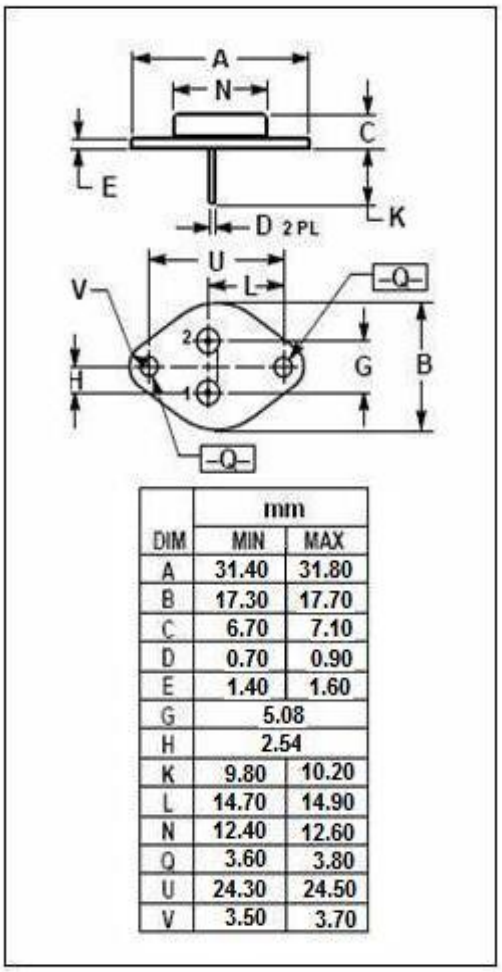



## APPLICATIONS

- Designed for accordance with the requirements of BS, CECC and JAN,JANTX, JANTXV and JANS specifications。

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 90 | V |
| $V_{CEX}$ | Collector-Emitter Voltage $V_{BE}$= -1.5V | 90 | V |
| $V_{CER}$ | Collector-Emitter Voltage $R_{BE}$= 100Ω | 60 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 55 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current-Continuous | 4 | A |
| $I_B$ | Base Current-Continuous | 2 | A |
| $P_C$ | Collector Power Dissipation@$T_C$=25℃ | 29 | W |
| $T_J$ | Junction Temperature | 200 | ℃ |
| $T_{stg}$ | Storage Temperature | -65~200 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 31.40 | 31.80 |
| B | 17.30 | 17.70 |
| C | 6.70 | 7.10 |
| D | 0.70 | 0.90 |
| E | 1.40 | 1.60 |
| G | 5.08 | |
| H | 2.54 | |
| K | 9.80 | 10.20 |
| L | 14.70 | 14.90 |
| N | 12.40 | 12.60 |
| Q | 3.60 | 3.80 |
| U | 24.30 | 24.50 |
| V | 3.50 | 3.70 |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal Resistance,Junction to Case | 6.0 | ℃/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 | $I_C$= 30mA; $I_B$= 0 | 55 | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$= 1mA; $I_C$= 0 | 7 | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 0.5A; $I_B$= 50mA | | 1.0 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= 0.5A; $V_{CE}$= 4V | | 1.7 | V |
| $I_{CEO}$ | Collector Cutoff Current | $V_{CE}$= 30V; $I_B$= 0 | | 0.5 | mA |
| $I_{CEV}$ | Collector Cutoff Current | $V_{CE}$= 90V; $V_{BE(off)}$= 1.5V<br>$V_{CE}$= 30V; $V_{BE(off)}$= 1.5V,$T_C$=150℃ | | 1.0<br>5.0 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 7V; $I_C$= 0 | | 1.0 | mA |
| $h_{FE}$ | DC Current Gain | $I_C$= 0.5A ; $V_{CE}$= 4V | 80 | 250 | |
| $f_T$ | Current Gain-Bandwidth Product | $I_C$= 0.2A; $V_{CE}$= 10V | 0.8 | | MHz |