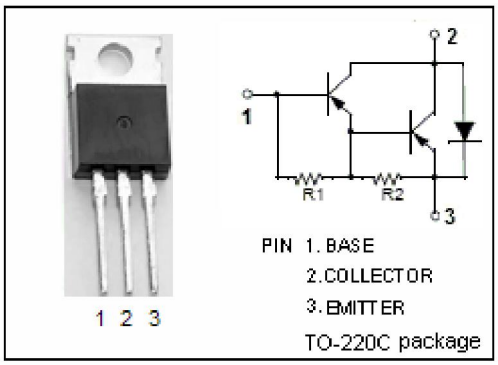
# isc Silicon PNP Darlington Power Transistor BD902

## DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= -100V(Min)
- High DC Current Gain
  : $h_{FE}$= 750(Min) @$I_C$= -3A
- Collector Power Dissipation-
  : $P_C$= 70W@ $T_C$= 25℃
- 8 A Continuous Collector Current
- Complement to Type BD901




## APPLICATIONS

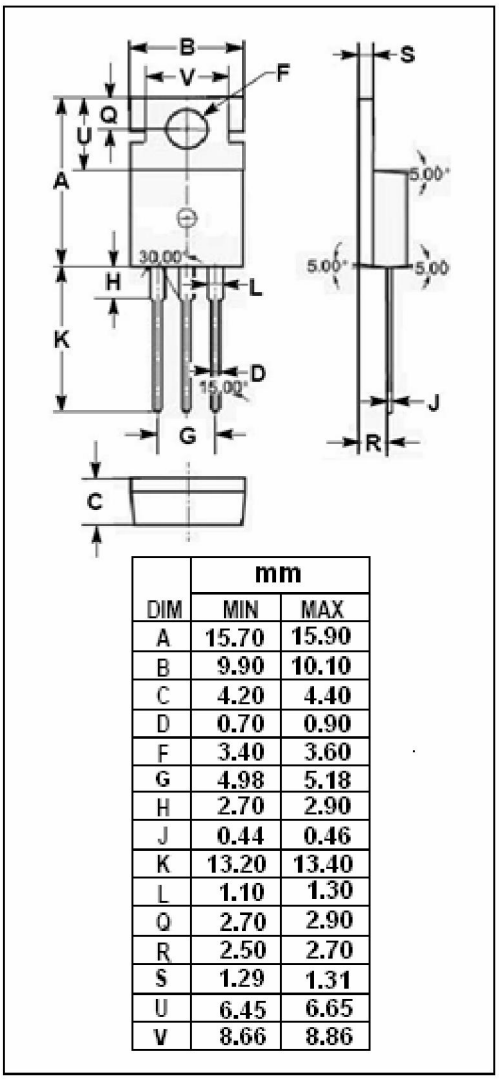
- Designed for use as complementary AF push-pull output stage applications

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | -100 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | -100 | V |
| $V_{EBO}$ | Emitter-Base Voltage | -5 | V |
| $I_C$ | Collector Current-Continuous | -8 | A |
| $I_B$ | Base Current-Continuous | -0.3 | A |
| $P_C$ | Collector Power Dissipation @ $T_a$=25℃ | 2 | W |
| | Collector Power Dissipation @ $T_C$=25℃ | 70 | |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -65~150 | ℃ |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal Resistance,Junction to Case | 1.79 | ℃/W |
| $R_{th\ j\text{-}a}$ | Thermal Resistance,Junction to Ambient | 62.5 | ℃/W |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 15.70 | 15.90 |
| B | 9.90 | 10.10 |
| C | 4.20 | 4.40 |
| D | 0.70 | 0.90 |
| F | 3.40 | 3.60 |
| G | 4.98 | 5.18 |
| H | 2.70 | 2.90 |
| J | 0.44 | 0.46 |
| K | 13.20 | 13.40 |
| L | 1.10 | 1.30 |
| Q | 2.70 | 2.90 |
| R | 2.50 | 2.70 |
| S | 1.29 | 1.31 |
| U | 6.45 | 6.65 |
| V | 8.66 | 8.86 |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= -100mA; $I_B$= 0 | -100 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= -3A; $I_B$= -12mA | | | -2.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= -3A ; $V_{CE}$= -3V | | | -2.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= -100V; $I_E$= 0 | | | -0.2 | mA |
| | | $V_{CB}$= -100V; $I_E$= 0; $T_C$= 100℃ | | | -2.0 | |
| $I_{CEO}$ | Collector Cutoff Current | $V_{CE}$= -50V; $I_B$= 0 | | | -0.5 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= -5V; $I_C$= 0 | | | -2 | mA |
| $h_{FE}$ | DC Current Gain | $I_C$= -3A ; $V_{CE}$= -3V | -750 | | | |

Switching Times

| | | | | | | |
|---|---|---|---|---|---|---|
| $t_{on}$ | Turn-On Time | $I_C$= -3A; $I_{B1}$= -$I_{B2}$= -12mA; $V_{BE(off)}$= 3.5V; $R_L$= 10Ω ; $t_p$= 20μs,DutyCycle≤ 2% | | 1 | | μs |
| $t_{off}$ | Turn-Off Time | | | 5 | | μs |