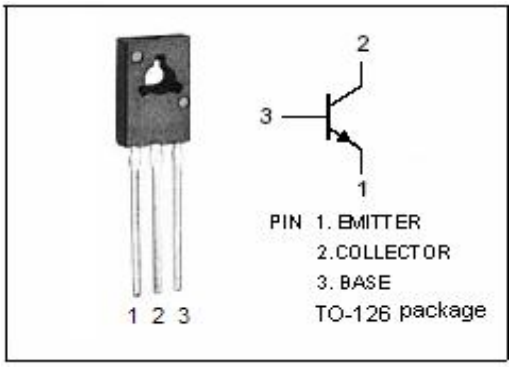
# isc Silicon NPN Power Transistor — 2SD669A

## DESCRIPTION

- High Collector Current-$I_C$= 1.5A
- High Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 120V(Min)
- Good Linearity of $h_{FE}$
- Low Saturation Voltage
- Complement to Type 2SD649
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

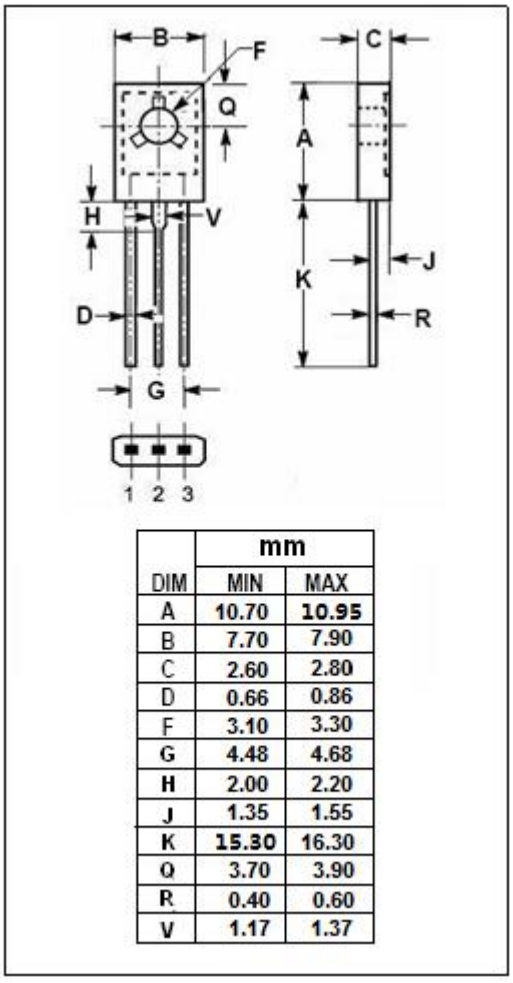



## APPLICATIONS

- Power amplifier applications

## ABSOLUTE MAXIMUM RATINGS(TC=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 180 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 160 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current-Continuous | 1.5 | A |
| $I_{CP}$ | Collector Current-Pulse | 3 | A |
| $P_C$ | Collector Power Dissipation @ $T_C$=25℃ | 20 | W |
| | Collector Power Dissipation @ $T_a$=25℃ | 1 | |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |




| DIM | mm MIN | 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 |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$= 1mA ; $I_E$= 0 | 180 | | | V |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 10mA ; $R_{BE}$= ∞ | 160 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Vltage | $I_E$= 1mA ; $I_C$=0 | 5 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 500mA; $I_B$= 50mA | | | 1.0 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= 150mA ; $V_{CE}$= 5V | | | 1.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 160V; $I_E$= 0 | | | 10 | μA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 150mA ; $V_{CE}$= 5V | 60 | | 200 | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 500mA ; $V_{CE}$= 5V | 30 | | | |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 150mA ; $V_{CE}$= 5V | | 140 | | MHz |
| $C_{OB}$ | Output Capacitance | $I_E$= 0; $V_{CB}$= 10V,$f_{test}$= 1MHz | | 27 | | pF |

◆ **$h_{FE-1}$ Classifications**

| B | C |
|---|---|
| 60-120 | 100-200 |

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