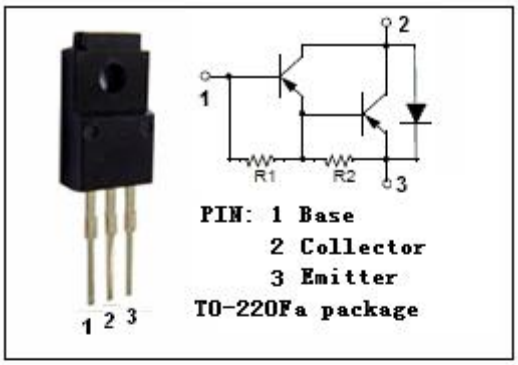
# *isc* Silicon PNP Darlingtion Power Transistor — 2SB1020

## DESCRIPTION

- High DC C urrent Gain-
  : $h_{FE}$= 2000(Min.)@$I_C$= -3A
- Low Collector Saturation Voltage-
  : $V_{CE(sat)}$= -1.5V(Max)@$I_C$= -3A
- Good Linearity of $h_{FE}$
- Complement to Type 2SD1415
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

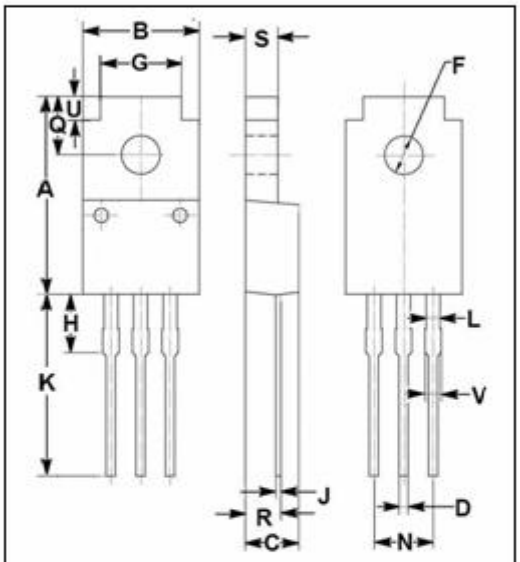



## APPLICATIONS

- High power switching applications.
- Hammer drive, pulse motor drive 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 | -7 | A |
| $I_B$ | Base Current-Continuous | -0.2 | A |
| $P_C$ | Collector Power Dissipation @ $T_a$=25℃ | 2 | W |
| | Collector Power Dissipation @ $T_C$=25℃ | 30 | |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 16.85 | 17.15 |
| B | 9.54 | 10.10 |
| C | 4.35 | 4.65 |
| D | 0.75 | 0.90 |
| F | 3.20 | 3.40 |
| G | 6.90 | 7.20 |
| H | 5.15 | 5.45 |
| J | 0.45 | 0.75 |
| K | 13.35 | 13.65 |
| L | 1.10 | 1.30 |
| N | 4.98 | 5.18 |
| Q | 4.85 | 5.15 |
| R | 2.55 | 3.25 |
| S | 2.70 | 2.90 |
| U | 1.75 | 2.05 |
| V | 1.30 | 1.50 |

# isc Silicon PNP Darlingtion Power Transistor 2SB1020

## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= -30mA; $I_B$= 0 | -100 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C$= -3A; $I_B$= -6mA | | | -1.5 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C$= -7A; $I_B$= -14mA | | | -2.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= -3A; $I_B$= -6mA | | | -2.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= -100V; $I_E$= 0 | | | -100 | μA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= -5V; $I_C$= 0 | | | -4.0 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= -3A; $V_{CE}$= -3V | 2000 | | 15000 | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= -7A; $V_{CE}$= -3V | 1000 | | | |