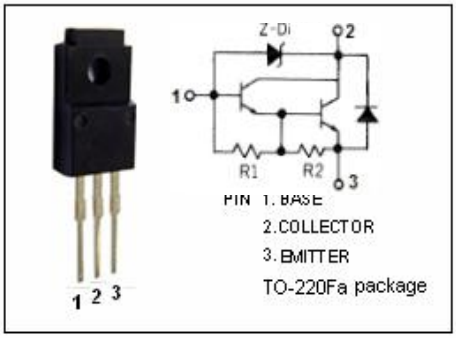
# isc Silicon NPN Darlington Power Transistor 2SD1983




## DESCRIPTION

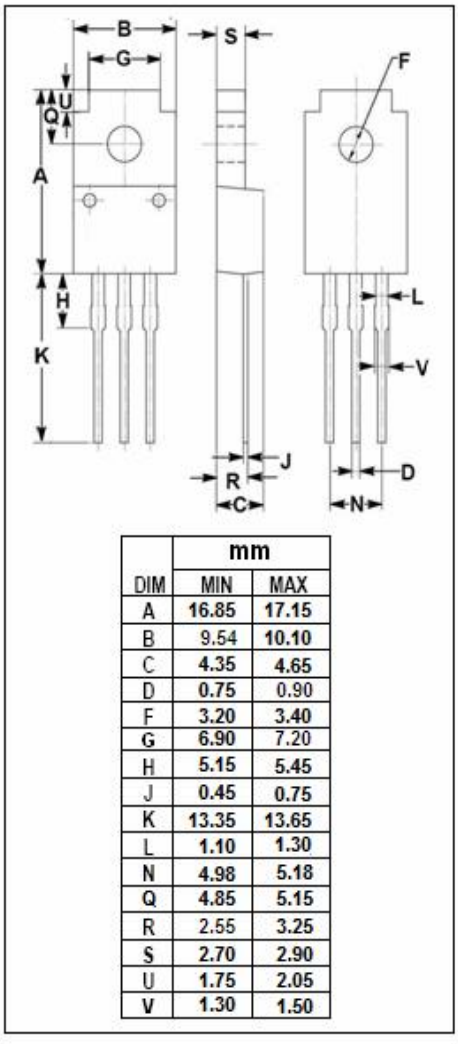
- High DC Current Gain
  : $h_{FE}$= 4000(Min) @$I_C$= 1A
- Low Collector Saturation Voltgae-
  : $V_{CE(sat)}$= 1.5V(Max.)@ $I_C$= 1A
- Incorporating a built-in zener diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- For low-frequency amplification

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 50-70 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 50-70 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current-Continuous | 1.5 | A |
| $I_{CP}$ | Collector Current-Peak | 2.5 | A |
| $P_C$ | Collector Power Dissipation @ $T_a$=25℃ | 2 | W |
| | Collector Power Dissipation @ $T_C$=25℃ | 20 | |
| $T_J$ | 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 |

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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 | $I_C$= 1mA; $I_B$= 0 | 50 | | 70 | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$=0.1mA; $I_E$= 0 | 50 | | 70 | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 1A; $I_B$= 1mA | | | 1.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= 1A; $I_B$= 1mA | | | 2.2 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 50V; $I_E$= 0 | | | 10 | μA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 5V; $I_C$= 0 | | | 3.0 | mA |
| $h_{FE}$ | DC Current Gain | $I_C$= 1A; $V_{CE}$= 2V | 4000 | | 40000 | |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 10mA; $V_{CE}$= 10V | 100 | | | MHz |