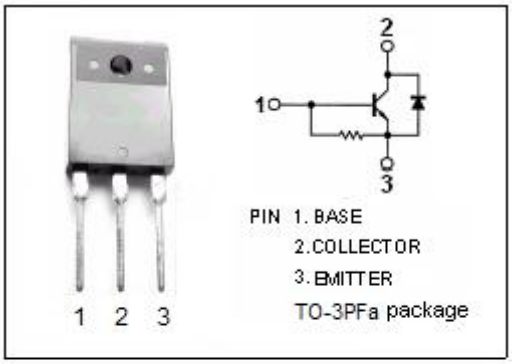
# isc Silicon NPN Power Transistor — 2SD2057

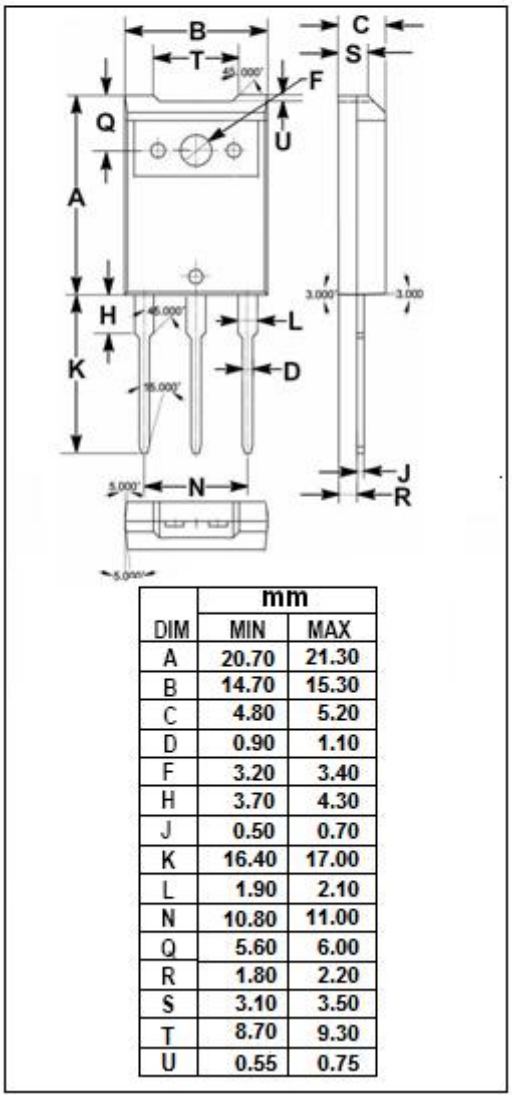



## DESCRIPTION

- High Voltage, High Speed
- Wide Area of Safe Operation
- Built-in Damper Diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Designed for horizontal deflection output applications.




| DIM | mm MIN | MAX |
|---|---|---|
| A | 20.70 | 21.30 |
| B | 14.70 | 15.30 |
| C | 4.80 | 5.20 |
| D | 0.90 | 1.10 |
| F | 3.20 | 3.40 |
| H | 3.70 | 4.30 |
| J | 0.50 | 0.70 |
| K | 16.40 | 17.00 |
| L | 1.90 | 2.10 |
| N | 10.80 | 11.00 |
| Q | 5.60 | 6.00 |
| R | 1.80 | 2.20 |
| S | 3.10 | 3.50 |
| T | 8.70 | 9.30 |
| U | 0.55 | 0.75 |

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CES}$ | Collector- Emitter Voltage($V_{BE}$= 0) | 1500 | V |
| $V_{CBO}$ | Collector-Base Voltage | 1500 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current- Continuous | 5 | A |
| $I_{CM}$ | Collector Current-Peak | 20 | A |
| $I_B$ | Base Current- Continuous | 4 | A |
| $P_C$ | Collector Power Dissipation @ $T_C$=25℃ | 100 | W |
| | Collector Power Dissipation @ $T_a$=25℃ | 3 | |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -55~150 | ℃ |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$= 200mA; $I_C$= 0 | 7 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 5A; $I_B$= 1.2A | | | 8.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$= 5A; $I_B$= 1.2A | | | 1.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 1000V; $I_E$= 0 | | | 30 | μA |
| | | $V_{CB}$= 1500V; $I_E$= 0 | | | 300 | |
| $h_{FE}$ | DC Current Gain | $I_C$= 5A; $V_{CE}$= 10V | 4.5 | | 15 | |
| $V_{ECF}$ | C-E Diode Forward Voltage | $I_F$= 6A | | | 2.3 | V |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 1A; $V_{CE}$= 10V | | 2 | | MHz |
| Switching times | | | | | | |
| $t_{stg}$ | Storage Time | $I_C$= 5A, $I_{B1}$= $I_{B1}$= 1.2A; $L_{leak}$= 5 μH; | | | 12 | μs |
| $t_f$ | Fall Time | | | | 0.8 | μs |

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