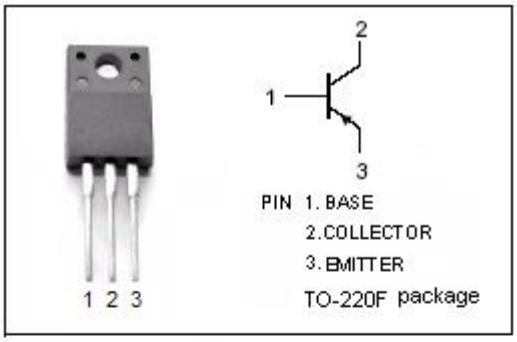
# isc Silicon NPN Power Transistor 2SC3746

## DESCRIPTION

- Good Linearity of $h_{FE}$
- High Switching Speed
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

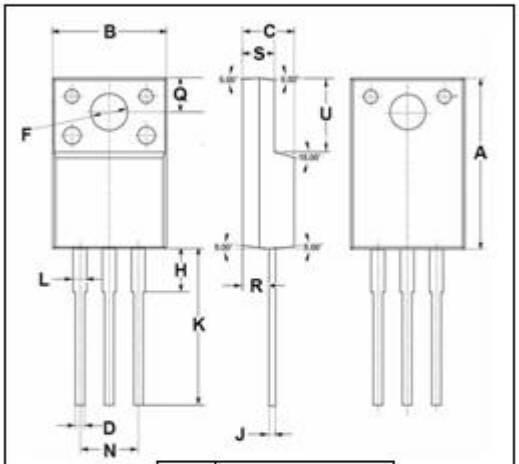



## APPLICATIONS

- Various inductance lamp drivers for electrical equipment
- Inverters, converters
- Power amplifiers
- High-speed switching applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 80 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current-Continuous | 5 | A |
| $I_{CM}$ | Collector Current-Pulse | 7 | A |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 20 | W |
| | Collector Power Dissipation @$T_a$=25℃ | 2.0 | |
| $T_J$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -55~150 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 14.95 | 15.05 |
| B | 10.00 | 10.10 |
| C | 4.40 | 4.60 |
| D | 0.75 | 0.80 |
| F | 3.10 | 3.30 |
| H | 3.70 | 3.90 |
| J | 0.50 | 0.70 |
| K | 13.4 | 13.6 |
| L | 1.10 | 1.30 |
| N | 5.00 | 5.20 |
| Q | 2.70 | 2.90 |
| R | 2.20 | 2.40 |
| S | 2.65 | 2.85 |
| U | 6.40 | 6.60 |

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## ELECTRICAL CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 10mA; $R_{BE}$= ∞ | 60 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$= 1mA; $I_E$= 0 | 80 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$= 10mA; $I_C$= 0 | 5 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 2.5A; $I_B$= 0.125A | | | 0.4 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 40V ; $I_E$= 0 | | | 100 | μA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 4V; $I_C$= 0 | | | 100 | μA |
| $h_{FE}$ | DC Current Gain | $I_C$= 1A ; $V_{CE}$= 2V | 70 | | 280 | |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 1A ; $V_{CE}$= 5V | | 100 | | MHz |