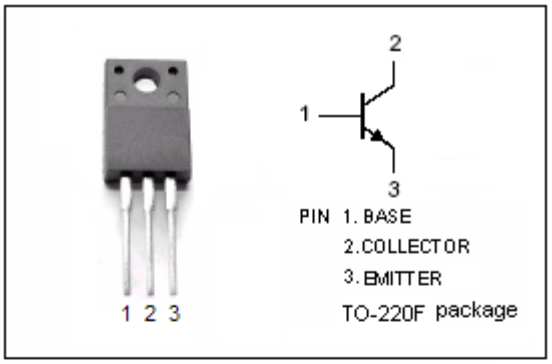
# isc Silicon NPN Power Transistor 2SC5993

## DESCRIPTION

- Good Linearity of $h_{FE}$
- High Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 180V(Min)
- Complement to Type 2SA2140

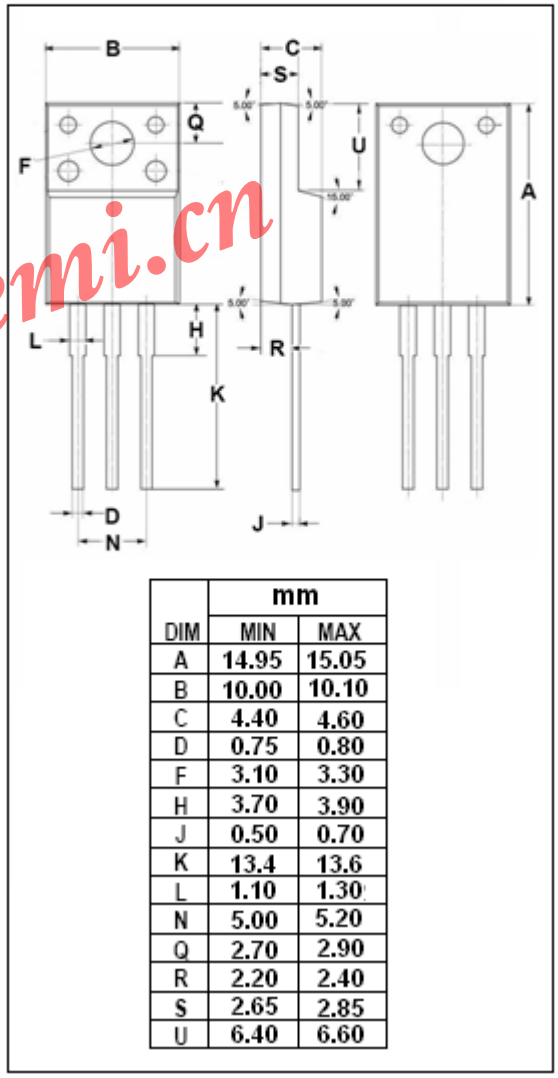



## APPLICATIONS

- Power amplification
- For TV VM circuit

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 180 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 180 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 6 | V |
| $I_C$ | Collector Current-Continuous | 1.5 | A |
| $I_{CM}$ | Collector Current-Peak | 3.0 | A |
| $P_C$ | Collector Power Dissipation @ $T_a$=25℃ | 2.0 | 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 | 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 |

# isc Silicon NPN Power Transistor 2SC5993

## ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 10mA; $I_B$= 0 | 180 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 1A; $I_B$= 0.1A | | | 0.5 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 180V; $I_E$= 0 | | | 100 | μA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 6V; $I_C$= 0 | | | 100 | μA |
| $h_{FE}$ | DC Current Cain | $I_C$= 0.1A; $V_{CE}$= 5V | 60 | | 240 | |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 0.2A; $V_{CE}$= 10V; f= 10MHz | | 130 | | MHz |
| $C_{OB}$ | Output Capacitance | $I_E$= 0; $V_{CB}$= 10V; $f_{test}$= 1.0MHz | | 10 | | pF |
| Switching Time, Resistance Loaded | | | | | | |
| $t_{on}$ | Turn-on Time | $I_C$= 0.4A, $I_{B1}$= -$I_{B2}$= 0.04A; $V_{CC}$= 100V | | 0.1 | | μs |
| $t_{stg}$ | Storage Time | | | 0.5 | | μs |
| $t_f$ | Fall Time | | | 0.1 | | μs |



### ◆ $h_{FE}$ Classifications

| Q | P |
|---|---|
| 60-140 | 120-240 |