

isc Silicon NPN Power Transistor

2SC5305

DESCRIPTION

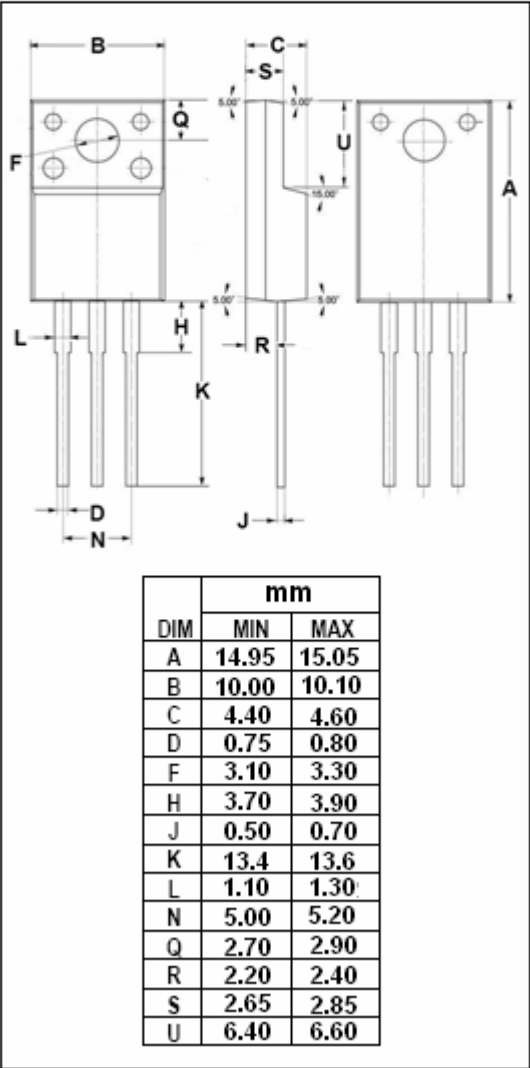
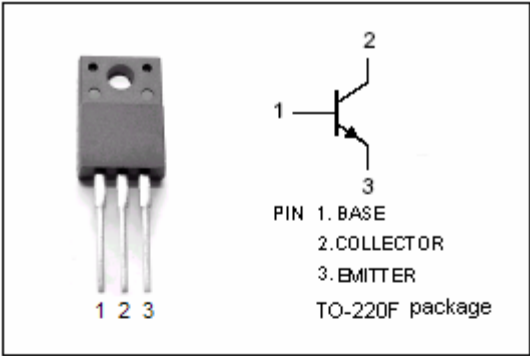
- High Breakdown Voltage  
:V<sub>(BR)CBO</sub>= 1200V (Min)
- High Speed Switching

APPLICATIONS

- Designed for inverter lighting applications.

Absolute maximum ratings (T<sub>a</sub>=25°C)

| SYMBOL           | PARAMETER                                            | VALUE   | UNIT |
|------------------|------------------------------------------------------|---------|------|
| V <sub>CBO</sub> | Collector-Base Voltage                               | 1200    | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage                            | 600     | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage                                 | 9       | V    |
| I <sub>C</sub>   | Collector Current-Continuous                         | 6       | A    |
| I <sub>CM</sub>  | Collector Current-Peak                               | 12      | A    |
| P <sub>C</sub>   | Collector Power Dissipation<br>@T <sub>a</sub> =25°C | 2       | W    |
|                  | Collector Power Dissipation<br>@T <sub>c</sub> =25°C | 35      |      |
| T <sub>j</sub>   | Junction Temperature                                 | 150     | °C   |
| T <sub>stg</sub> | Storage Temperature Range                            | -55~150 | °C   |



**isc Silicon NPN Power Transistor****2SC5305****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            | CONDITIONS                          | MIN | TYP. | MAX | UNIT          |
|----------------|--------------------------------------|-------------------------------------|-----|------|-----|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=0.1\text{A}; I_B=0$            | 600 |      |     | V             |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C=3\text{A}; I_B=0.6\text{A}$    |     |      | 1.0 | V             |
| $V_{BE(sat)}$  | Base-Emitter Saturation Voltage      | $I_C=3\text{A}; I_B=0.6\text{A}$    |     |      | 1.5 | V             |
| $h_{FE-1}$     | DC Current Gain                      | $I_C=0.3\text{A}; V_{CE}=5\text{V}$ | 30  |      | 50  |               |
| $h_{FE-2}$     | DC Current Gain                      | $I_C=2.5\text{A}; V_{CE}=5\text{V}$ | 10  |      |     |               |
| $I_{CBO}$      | Collector Cutoff Current             | $V_{CB}=600\text{V}; I_E=0$         |     |      | 10  | $\mu\text{A}$ |
| $I_{CES}$      | Collector Cutoff Current             | $V_{CE}=1200\text{V}; R_{BE}=0$     |     |      | 1.0 | mA            |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB}=9\text{V}; I_C=0$           |     |      | 1.0 | mA            |

## Switching Times

|       |              |                                                            |  |  |      |               |
|-------|--------------|------------------------------------------------------------|--|--|------|---------------|
| $t_s$ | Storage Time | $I_C=3.5\text{A}; I_{B1}=0.6\text{A}; I_{B2}=-1.2\text{A}$ |  |  | 2.5  | $\mu\text{s}$ |
| $t_f$ | Fall Time    |                                                            |  |  | 0.15 | $\mu\text{s}$ |