

isc Silicon NPN Power Transistor

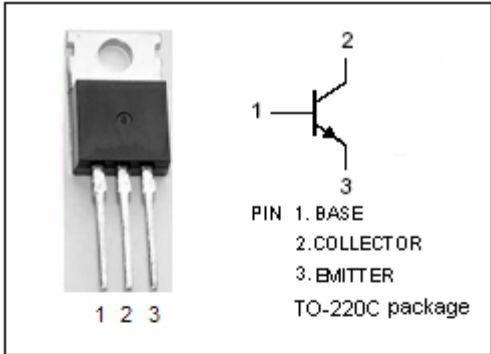
2SC4848

DESCRIPTION

- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = 0.6V(Max) @ I_C = 5A$
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 120V (Min)$
- High Switching Speed
- Wide Area of Safe Operation

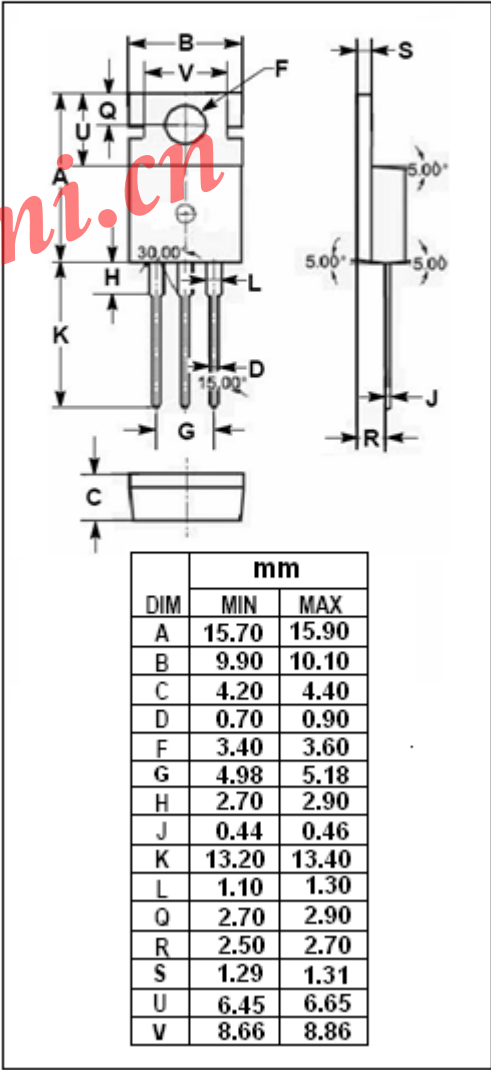
APPLICATIONS

- Designed for power amplifier and general purpose applications.



ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}C$ )

| SYMBOL    | PARAMETER                                          | VALUE   | UNIT        |
|-----------|----------------------------------------------------|---------|-------------|
| $V_{CBO}$ | Collector-Base Voltage                             | 250     | V           |
| $V_{CEO}$ | Collector-Emitter Voltage                          | 120     | V           |
| $V_{EBO}$ | Emitter-Base Voltage                               | 12      | V           |
| $I_C$     | Collector Current-Continuous                       | 7       | A           |
| $I_{CM}$  | Collector Current-Pulse                            | 15      | A           |
| $P_C$     | Collector Power Dissipation<br>@ $T_a=25^{\circ}C$ | 2       | W           |
|           | Collector Power Dissipation<br>@ $T_C=25^{\circ}C$ | 40      |             |
| $T_J$     | Junction Temperature                               | 150     | $^{\circ}C$ |
| $T_{stg}$ | Storage Temperature Range                          | -55~150 | $^{\circ}C$ |



## ISC Silicon NPN Power Transistor

## 2SC4848

## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            | CONDITIONS                                                                                            | MIN | TYP. | MAX | UNIT          |
|----------------|--------------------------------------|-------------------------------------------------------------------------------------------------------|-----|------|-----|---------------|
| $V_{CEX(SUS)}$ | Collector-Emitter Breakdown Voltage  | $I_{CP}=8\text{A}$ ; $I_{B1}=-I_{B2}=0.5\text{A}$ , $I_C=5\text{A}$ ;<br>$L=200\mu\text{H}$ , clamped | 125 |      |     | V             |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C=5\text{A}$ ; $I_B=0.5\text{A}$                                                                   |     |      | 0.6 | V             |
| $V_{BE(sat)}$  | Base-Emitter Saturation Voltage      | $I_C=5\text{A}$ ; $I_B=0.5\text{A}$                                                                   |     |      | 1.2 | V             |
| $I_{CBO}$      | Collector Cutoff Current             | $V_{CB}=100\text{V}$ ; $I_E=0$                                                                        |     |      | 10  | $\mu\text{A}$ |
| $I_{CEO}$      | Collector Cutoff Current             | $V_{CE}=100\text{V}$ ; $I_B=0$ ; $T_a=125^{\circ}\text{C}$                                            |     |      | 2.0 | mA            |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB}=12\text{V}$ ; $I_C=0$                                                                         |     |      | 10  | $\mu\text{A}$ |
| $h_{FE}$       | DC Current Gain                      | $I_C=3\text{A}$ ; $V_{CE}=5\text{V}$                                                                  | 100 |      | 200 |               |
| $f_T$          | Current-Gain—Bandwidth Product       | $I_E=-0.5\text{A}$ ; $V_{CE}=10\text{V}$                                                              |     | 20   |     | MHz           |
| $C_{OB}$       | Output Capacitance                   | $I_E=0$ ; $V_{CB}=10\text{V}$ ; $f_{test}=1.0\text{MHz}$                                              |     | 150  |     | pF            |

## Switching times

|           |              |                                                                                                 |  |  |     |               |
|-----------|--------------|-------------------------------------------------------------------------------------------------|--|--|-----|---------------|
| $t_{on}$  | Turn-on Time | $I_C=5\text{A}$ ; $I_{B1}=-I_{B2}=0.5\text{A}$ ;<br>$R_L=10\Omega$ ; $V_{CC}\approx 50\text{V}$ |  |  | 0.5 | $\mu\text{s}$ |
| $t_{stg}$ | Storage Time |                                                                                                 |  |  | 2.5 | $\mu\text{s}$ |
| $t_f$     | Fall Time    |                                                                                                 |  |  | 0.5 | $\mu\text{s}$ |