

RC101S...RC106S

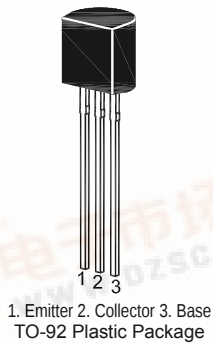
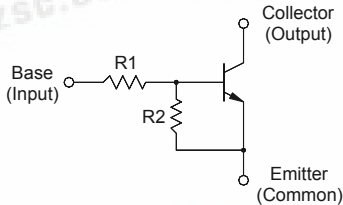
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NPN Silicon Epitaxial Planar Transistor

for switching and interface circuit and drive circuit applications

Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process



Resistor Values

| Type   | R1 (KΩ) | R2 (KΩ) |
|--------|---------|---------|
| RC101S | 4.7     | 4.7     |
| RC102S | 10      | 10      |
| RC103S | 22      | 22      |
| RC104S | 47      | 47      |
| RC105S | 2.2     | 47      |
| RC106S | 4.7     | 47      |

Absolute Maximum Ratings (T<sub>a</sub> = 25 °C)

| Parameter                 |        | Symbol           | Value         | Unit |
|---------------------------|--------|------------------|---------------|------|
| Output Voltage            |        | V <sub>O</sub>   | 50            | V    |
| Input Voltage             | RC101S | V <sub>I</sub>   | 20, -10       | V    |
|                           | RC102S |                  | 30, -10       |      |
|                           | RC103S |                  | 40, -10       |      |
|                           | RC104S |                  | 40, -10       |      |
|                           | RC105S |                  | 12, -5        |      |
|                           | RC106S |                  | 20, -5        |      |
| Output Current            |        | I <sub>O</sub>   | 100           | mA   |
| Total Power Dissipation   |        | P <sub>tot</sub> | 200           | mW   |
| Junction Temperature      |        | T <sub>j</sub>   | 150           | °C   |
| Storage Temperature Range |        | T <sub>stg</sub> | - 55 to + 150 | °C   |

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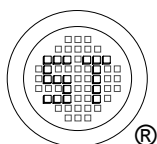
# RC101S...RC106S

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## Characteristics at $T_a = 25^\circ\text{C}$

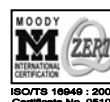
| Parameter                                                            | Symbol       | Min. | Typ. | Max. | Unit |
|----------------------------------------------------------------------|--------------|------|------|------|------|
| DC Current Gain<br>at $V_O = 5\text{ V}$ , $I_O = 10\text{ mA}$      | $G_I$        | 30   | -    | -    | -    |
| RC101S                                                               |              | 50   | -    | -    | -    |
| RC102S                                                               |              | 70   | -    | -    | -    |
| RC103S                                                               |              | 80   | -    | -    | -    |
| RC104S                                                               |              | 80   | -    | -    | -    |
| RC105S                                                               |              | 80   | -    | -    | -    |
| RC106S                                                               |              | 80   | -    | -    | -    |
| Output Cutoff Current<br>at $V_O = 50\text{ V}$                      | $I_{O(OFF)}$ | -    | -    | 500  | nA   |
| Input Current<br>at $V_I = 5\text{ V}$                               | $I_I$        | -    | -    | 1.8  | mA   |
| RC101S                                                               |              | -    | -    | 0.88 |      |
| RC102S                                                               |              | -    | -    | 0.36 |      |
| RC103S                                                               |              | -    | -    | 0.18 |      |
| RC104S                                                               |              | -    | -    | 3.6  |      |
| RC105S                                                               |              | -    | -    | 1.8  |      |
| RC106S                                                               |              | -    | -    |      |      |
| Output Voltage<br>at $I_O = 10\text{ mA}$ , $I_I = 0.5\text{ mA}$    | $V_{O(ON)}$  | -    | -    | 0.3  | V    |
| Input Voltage (ON)<br>at $V_O = 0.2\text{ V}$ , $I_O = 5\text{ mA}$  | $V_{I(ON)}$  | -    | -    | 2    | V    |
| RC101S                                                               |              | -    | -    | 2.4  |      |
| RC102S                                                               |              | -    | -    | 3    |      |
| RC103S                                                               |              | -    | -    | 5    |      |
| RC104S                                                               |              | -    | -    | 1.1  |      |
| RC105S                                                               |              | -    | -    | 1.3  |      |
| RC106S                                                               |              | -    | -    |      |      |
| Input Voltage (OFF)<br>at $V_O = 5\text{ V}$ , $I_O = 0.1\text{ mA}$ | $V_{I(OFF)}$ | 1    | -    | -    | V    |
| RC101S~104S                                                          |              | 0.5  | -    | -    |      |
| RC105S~106S                                                          |              |      |      |      |      |
| Transition Frequency<br>at $V_O = 10\text{ V}$ , $I_O = 5\text{ mA}$ | $f_T^{1)}$   | -    | 200  | -    | MHz  |

<sup>1)</sup> Characteristic of transistor only.



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Dated : 01/12/2008