

〈SMALL-SIGNAL TRANSISTOR〉

# RTGN14BAP

TRANSISTOR WITH RESISTOR  
FOR SWITCHING APPLICATION  
SILICON NPN EPITAXIAL TYPE

## DISCRIPTION

RTGN14BAP is a one chip transistor with built-in bias transistor.

## FEATURE

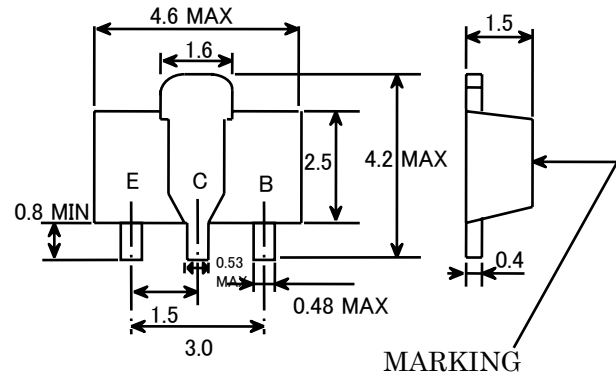
- Built-in bias resistor (R2=10kΩ)
- High collector current IC=1A
- Built-in zener diode between collector and base

## APPLICATION

Motor driver circuit

## OUTLINE DRAWING

Unit:mm

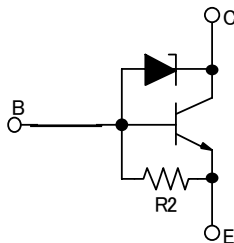


## TERMINAL CONNECTOR

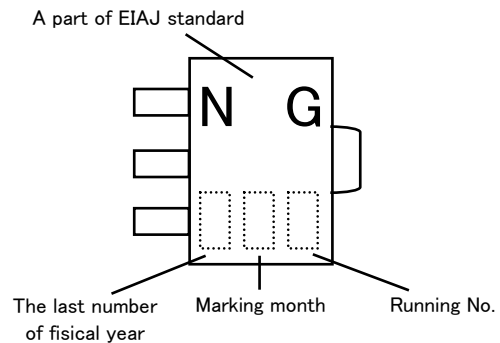
E: EMITTER  
C: COLLECTOR  
B: BASE

JEDEC :—

## EQUIVALENT CIRCUIT



## MARKING



## MAXIMUM RATING (Ta=25°C)

| SYMBOL           | PARAMETER                    | RATING   | UNIT |
|------------------|------------------------------|----------|------|
| V <sub>CBO</sub> | Collector to Base voltage    | 60±10    | V    |
| V <sub>EBO</sub> | Emitter to Base voltage      | 10       | V    |
| V <sub>CEO</sub> | Collector to Emitter voltage | 60±10    | V    |
| I <sub>C</sub>   | Collector current (DC)       | 1        | A    |
| I <sub>CM</sub>  | Collector current (pulse)    | 2        | A    |
| P <sub>C</sub>   | Collector dissipation        | 500      | mW   |
| T <sub>j</sub>   | Junction temperature         | +150     | °C   |
| T <sub>stg</sub> | Storage temperature          | -55~+150 | °C   |

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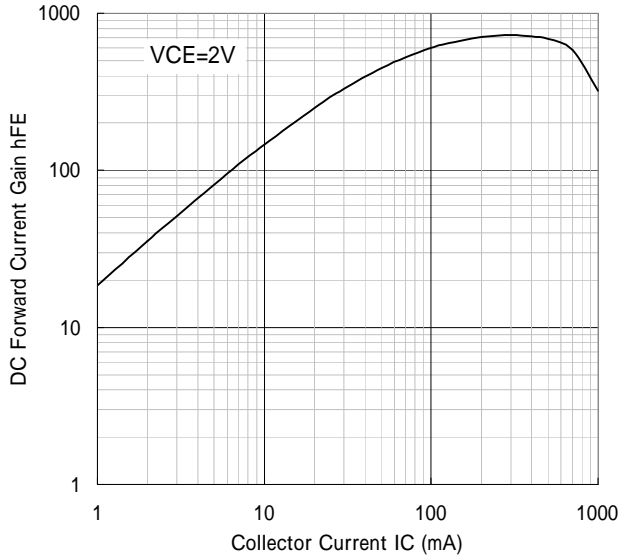
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## ELECTRICAL CHARACTERISTICS (Ta=25°C)

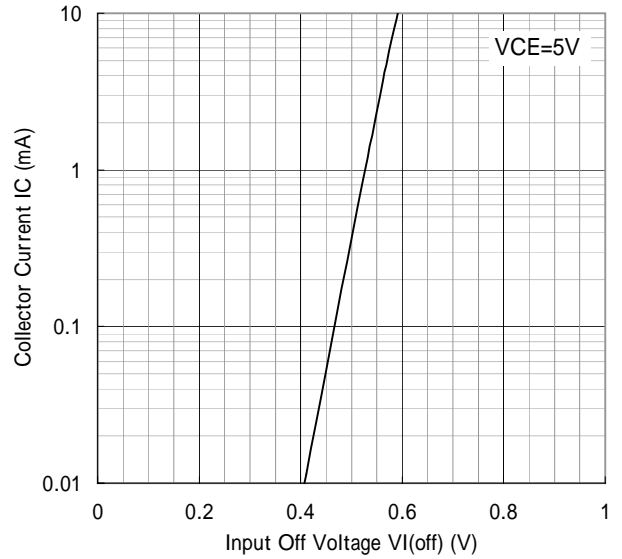
| Symbol    | Parameter                 | Test conditions            | Limits |     |     | Unit       |
|-----------|---------------------------|----------------------------|--------|-----|-----|------------|
|           |                           |                            | Min    | Typ | Max |            |
| $I_{CBO}$ | Collector cut off current | $V_{CB}=40V, I_E=0$        | —      | —   | 0.1 | $\mu A$    |
| $V_{IL}$  | Input voltage (OFF)       | $V_{CE}=5V, I_C=100 \mu A$ | 0.3    | —   | —   | V          |
| hFE1      | DC forward current gain   | $V_{CE}=2V, I_C=0.1A$      | 200    | —   | —   | —          |
| hFE2      | DC forward current gain   | $V_{CE}=2V, I_C=0.5A$      | 300    | —   | —   | —          |
| hFE3      | DC forward current gain   | $V_{CE}=2V, I_C=1A$        | 200    | —   | —   | —          |
| VCE(sat)  | C to E saturation voltage | $I_C=500mA, I_B=5mA$       |        |     | 400 | mV         |
| $R_2$     | Emitter – Base resistor   | —                          | 7      | 10  | 13  | K $\Omega$ |

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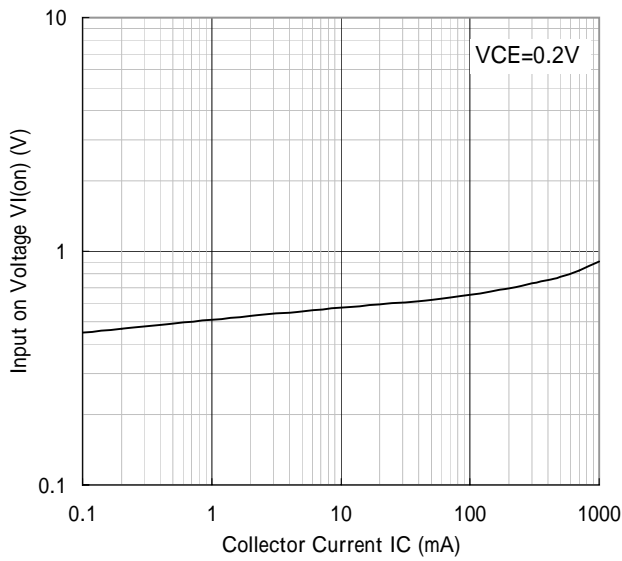
hFE - IC



IC - VI(off)



VI(on) - IC





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