Unit: mm

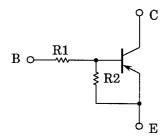
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

RN2207,RN2208,RN2209

Switching, Inverter Circuit, Interface Circuit And Driver Circuit Applications

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN1207~RN1209

Equivalent Circuit and Bias Resistor Values



| Type No. | R1 (kΩ) | R2 (kΩ) | | |
|----------|---------|---------|--|--|
| RN2207 | 10 | 47 | | |
| RN2208 | 22 | 47 | | |
| RN2209 | 47 | 22 | | |

0.55MAX. 0.4 0.55MAX. 0.4 0.55MAX. 1.27,1.27, 060 1.27,1.27, 060 1.27,1.27, 060 1.27,1.27, 060 1.27,1.27, 060

- 1. EMITTER
- 2. COLLECTPR
- 3. BASE

| JEDEC | _ | |
|---------|--------|---|
| EIAJ | _ | _ |
| TOSHIBA | 2-4E1A | |

Weight: 0.13g

Maximum Ratings (Ta = 25°C)

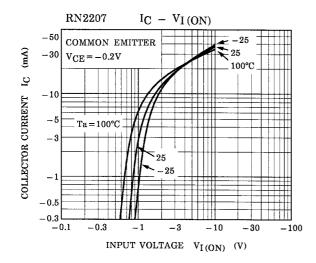
| Characteristic | | Symbol | Rating | Unit | |
|-----------------------------|--------|------------------|---------|------|--|
| Collector-base voltage | | V _{CBO} | -50 | V | |
| Collector-emitter voltage | | V _{CEO} | -50 | V | |
| Emitter-base voltage | RN2207 | | -6 | ٧ | |
| | RN2208 | V _{EBO} | -7 | | |
| | RN2209 | | -15 | | |
| Collector current | | I _C | -100 | mA | |
| Collector power dissipation | | PC | 300 | mW | |
| Junction temperature | | Tj | 150 | °C | |
| Storage temperature range | | T _{stg} | -55~150 | °C | |

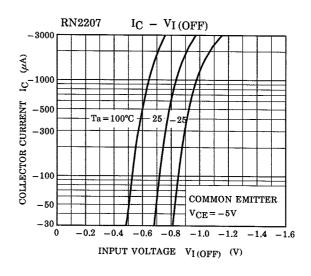


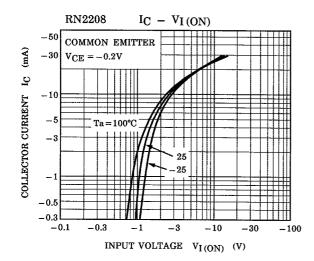
Electrical Characteristics (Ta = 25°C)

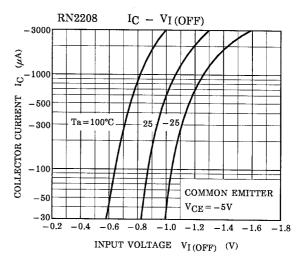
| Characteristic | ; | Symbol | Test Circuit | Test Condition | Min | Тур. | Max | Unit |
|------------------------------|-----------|-----------------------|-----------------|---|--------|-------|--------|------|
| Collector cut-off current | | I _{CBO} | _ | V _{CB} = -50V, I _E = 0 | _ | _ | -100 | nA |
| | | I _{CEO} | _ | V _{CE} = -50V, I _B = 0 | _ | _ | -500 | |
| Emitter cut-off current | RN2207 | I _{EBO} | _ | V _{EB} = -6V, I _C = 0 | -0.081 | _ | -0.15 | mA |
| | RN2208 | | _ | V _{EB} = -7V, I _C = 0 | -0.078 | _ | -0.145 | |
| | RN2209 | | _ | V _{EB} = −15V, I _C = 0 | -0.167 | _ | -0.311 | |
| DC current gain | RN2207 | h _{FE} | _ | V _{CE} = -5V, I _C = -10mA | 80 | _ | _ | _ |
| | RN2208 | | _ | | 80 | _ | _ | |
| | RN2209 | | _ | | 70 | _ | _ | |
| Collector-emitter saturation | n voltage | V _{CE (sat)} | _ | I _C = -5mA, I _B = -0.25mA | _ | -0.1 | -0.3 | V |
| Input voltage (ON) | RN2207 | V _I (ON) | _ | V _{CE} = -0.2V, I _C = -5mA | -0.7 | _ | -1.8 | ٧ |
| | RN2208 | | _ | | -1.0 | _ | -2.6 | |
| | RN2209 | | _ | | -2.2 | _ | -5.8 | |
| Input voltage (OFF) | RN2207 | V _{I (OFF)} | _ | V _{CE} = -5V, I _C = -0.1mA | -0.5 | _ | -1.0 | V |
| | RN2208 | | _ | | -0.6 | _ | -1.16 | |
| | RN2209 | | _ | | -1.5 | _ | -2.6 | |
| Translation frequency | • | f _T | _ | V _{CE} = −10V, I _C = −5mA | _ | 200 | _ | MHz |
| Collector output capacitand | ce | C _{ob} | _ | V _{CB} = -10V, I _E = 0, f = 1MHz | _ | 3 | 6 | pF |
| Input resistor | RN2207 | R1 | _ | _ | 7 | 10 | 13 | kΩ |
| | RN2208 | | _ | | 15.4 | 22 | 28.6 | |
| | RN2209 | | _ | | 32.9 | 47 | 61.1 | |
| Resistor ratio | RN2207 | R1/R2 — | _ | _ | 0.191 | 0.213 | 0.232 | _ |
| | RN2208 | | _ | | 0.421 | 0.468 | 0.515 | |
| | RN2209 | | _ | | 1.92 | 2.14 | 2.35 | |

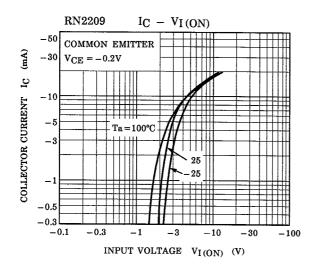
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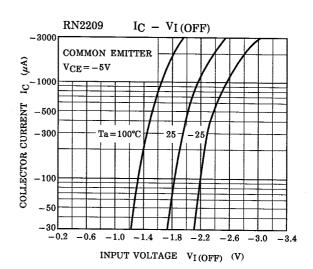


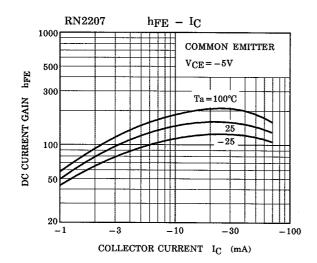


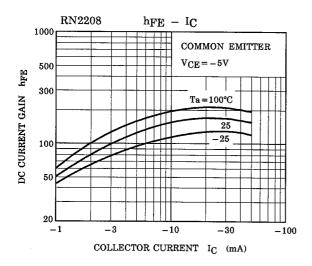


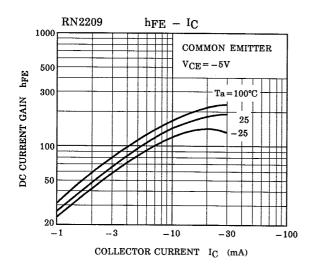












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