

# UNR5154 (UN5154)

## Silicon PNP epitaxial planar type

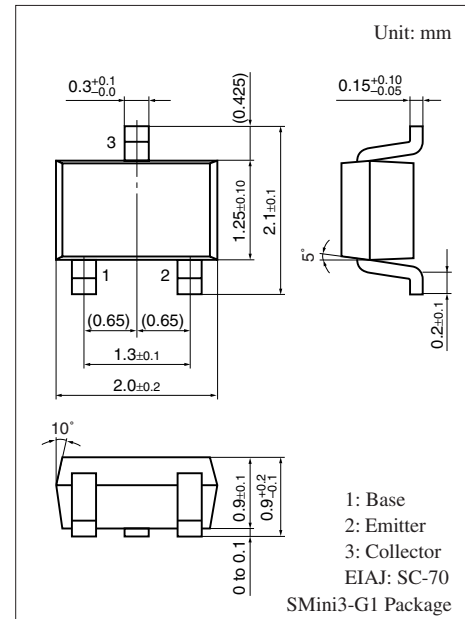
For digital circuits

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts
- S-Mini type package, allowing automatic insertion through tape packing and magazine packing

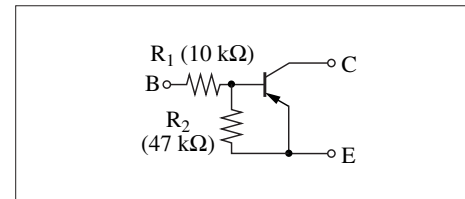
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | -30         | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | -30         | V                |
| Collector current                     | $I_C$     | -100        | mA               |
| Total power dissipation               | $P_T$     | 150         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |



Marking Symbol: EV

Internal Connection

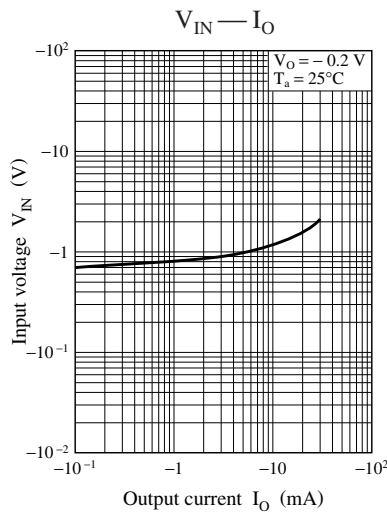
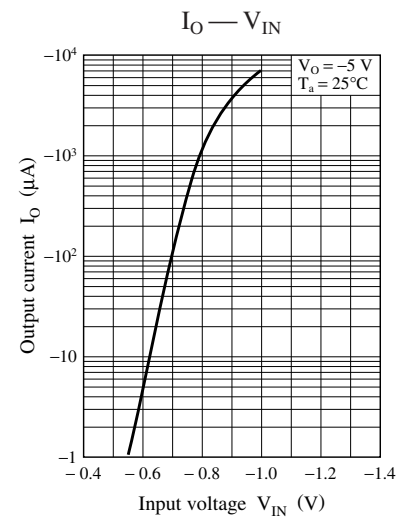
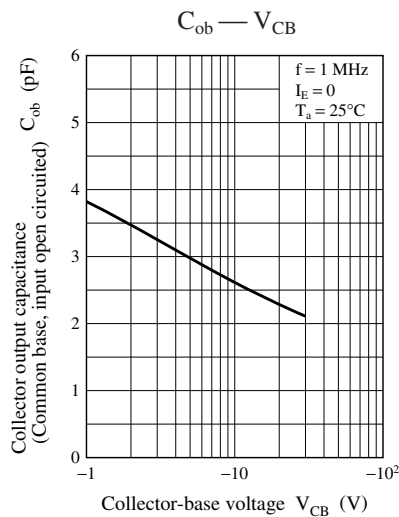
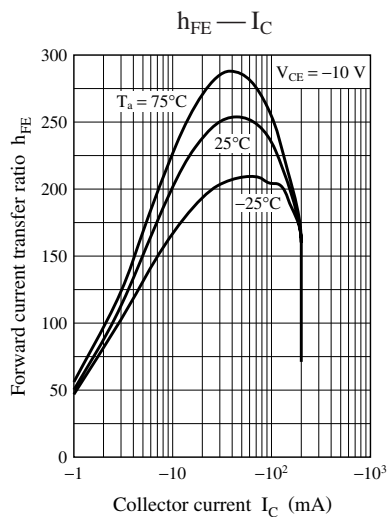
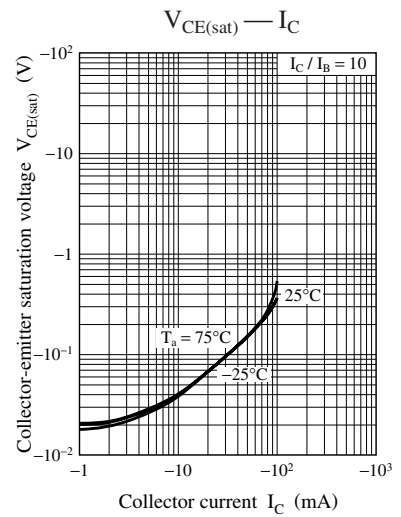
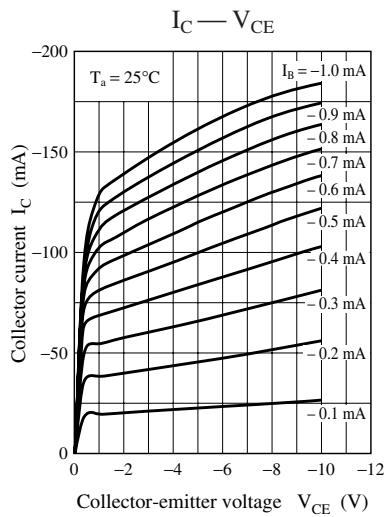
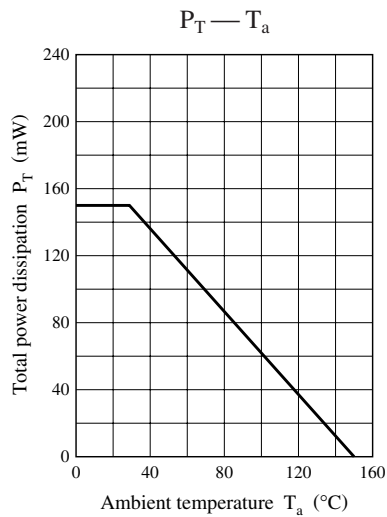


### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter                                    | Symbol        | Conditions   | Min  | Typ   | Max  | Unit             |
|--|---------------|--|------|-------|------|------------------|
| Collector-base voltage (Emitter open)        | $V_{CBO}$     | $I_C = -10 \mu\text{A}$ , $I_E = 0$  | -30  |       |      | V                |
| Collector-emitter voltage (Base open)        | $V_{CEO}$     | $I_C = -2 \text{ mA}$ , $I_B = 0$  | -30  |       |      | V                |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$     | $V_{CB} = -30 \text{ V}$ , $I_E = 0$   |      |       | -0.1 | $\mu\text{A}$    |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$     | $V_{CE} = -30 \text{ V}$ , $I_B = 0$   |      |       | -0.5 |                  |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$     | $V_{EB} = -3 \text{ V}$ , $I_C = 0$  |      |       | -0.1 | mA               |
| Forward current transfer ratio               | $h_{FE}$      | $V_{CE} = -10 \text{ V}$ , $I_C = -5 \text{ mA}$                             | 80   |       |      | —                |
| Collector-emitter saturation voltage         | $V_{CE(sat)}$ | $I_C = -50 \text{ mA}$ , $I_B = -0.33 \text{ mA}$                            |      | -0.5  | -1.2 | V                |
| Output voltage high-level                    | $V_{OH}$      | $V_{CC} = -5 \text{ V}$ , $V_B = -0.5 \text{ V}$ , $R_L = 1 \text{ k}\Omega$ | -4.9 |       |      | V                |
| Output voltage low-level                     | $V_{OL}$      | $V_{CC} = -5 \text{ V}$ , $V_B = -2.5 \text{ V}$ , $R_L = 1 \text{ k}\Omega$ |      |       | -0.2 | V                |
| Transition frequency                         | $f_T$         | $V_{CB} = -10 \text{ V}$ , $I_E = 1 \text{ mA}$ , $f = 200 \text{ MHz}$      |      | 80    |      | MHz              |
| Input resistance                             | $R_1$         |  | -30% | 10    | +30% | $\text{k}\Omega$ |
| Resistance ratio                             | $R_1/R_2$     |  |      | 0.213 |      | —                |

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Note) The part number in the parenthesis shows conventional part number.



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