# **DRC2144T**

# Silicon NPN epitaxial planar type

For digital circuits
Complementary to DRA2144T

#### ■ Features

- High forward current transfer ratio h<sub>FE</sub> with excellent linearity
- ullet Low collector-emitter saturation voltage  $V_{\text{CE(sat)}}$
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

#### Packaging

Embossed type (Thermo-compression sealing): 3000 pcs / reel (standard)

### ■ Absolute Maximum Ratings $T_a = 25$ °C

| Parameter                             | Symbol           | Rating      | Unit |  |
|---------------------------------------|------------------|-------------|------|--|
| Collector-base voltage (Emitter open) | V <sub>CBO</sub> | 50          | V    |  |
| Collector-emitter voltage (Base open) | V <sub>CEO</sub> | 50          | V    |  |
| Collector current                     | $I_{C}$          | 100         | mA   |  |
| Total power dissipation               | P <sub>T</sub>   | 200         | mW   |  |
| Junction temperature                  | T <sub>j</sub>   | 150         | °C   |  |
| Storage temperature                   | T <sub>stg</sub> | -55 to +150 | °C   |  |

#### ■ Package

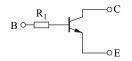
• Code

Mini3-G3-B

- Pin Name
  - 1: Base
  - 2: Emitter
  - 3: Collector

## ■ Marking Symbol: NP

#### ■ Internal Connection



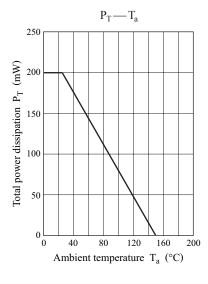
| Resistance value | $R_1$ | 47 | kΩ |
|------------------|-------|----|----|

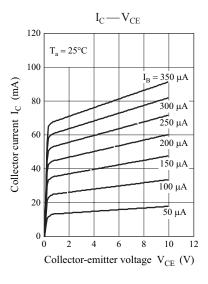
## ■ Electrical Characteristics $T_a = 25$ °C±3°C

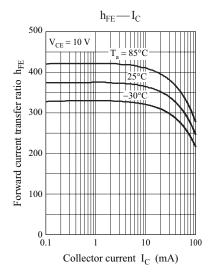
| Parameter                                    | Symbol               | Conditions                                      | Min  | Тур | Max  | Unit |
|--|----------------------|---|------|-----|------|------|
| Collector-base voltage (Emitter open)        | V <sub>CBO</sub>     | $I_C = 10 \mu A, I_E = 0$                       | 50   |     |      | V    |
| Collector-emitter voltage (Base open)        | V <sub>CEO</sub>     | $I_{\rm C} = 2 \text{ mA}, I_{\rm B} = 0$       | 50   |     |      | V    |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$            | $V_{\rm CB} = 50 \text{ V}, I_{\rm E} = 0$      |      |     | 0.1  | μА   |
| Collector-emitter cutoff current (Base open) | I <sub>CEO</sub>     | $V_{CE} = 50 \text{ V}, I_{B} = 0$              |      |     | 0.5  | μА   |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$            | $V_{EB} = 6 \text{ V}, I_C = 0$                 |      |     | 0.01 | mA   |
| Forward current transfer ratio               | $h_{\mathrm{FE}}$    | $V_{CE} = 10 \text{ V}, I_{C} = 5 \text{ mA}$   | 160  |     | 460  |      |
| Collector-emitter saturation voltage         | V <sub>CE(sat)</sub> | $I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$     |      |     | 0.25 | V    |
| Input voltage (ON)                           | V <sub>I(on)</sub>   | $V_{CE} = 0.2 \text{ V}, I_{C} = 5 \text{ mA}$  | 2.8  |     |      | V    |
| Input voltage (OFF)                          | V <sub>I(off)</sub>  | $V_{CE} = 5 \text{ V}, I_{C} = 100 \mu\text{A}$ |      |     | 0.4  | V    |
| Input resistance                             | $R_1$                |   | -30% | 47  | +30% | kΩ   |

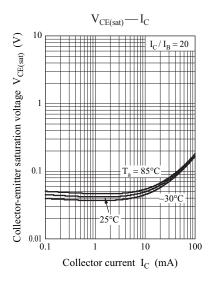
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

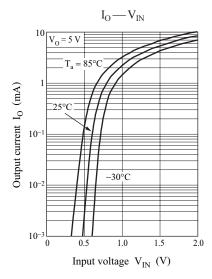
DRC2144T Panasonic

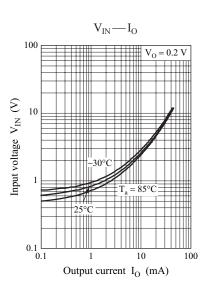






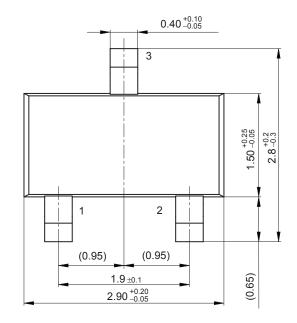


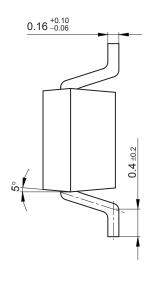


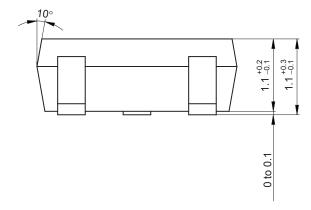


2 Ver. BED

Mini3-G3-B Unit: mm







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