## DMA2610F

## Silicon PNP epitaxial planar type

## For digital circuits

## Features

- Low collector-emitter saturation voltage $\mathrm{V}_{\mathrm{CE}(\text { sat })}$
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)


## ■ Marking Symbol: R3

## - Basic Part Number

Dual DRA2143X (Common emitter)

## Packaging

DMA2610F0R Embossed type (Thermo-compression sealing): $3000 \mathrm{pcs} /$ reel (standard)

Absolute Maximum Ratings $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$

| Parameter |  | Symbol | Rating | Unit |
| :---: | :--- | :---: | :---: | :---: |
| T Tr1 | Collector-base voltage (Emitter open) | $\mathrm{V}_{\mathrm{CBO}}$ | -50 | V |
|  | Collector-emitter voltage (Base open) | $\mathrm{V}_{\mathrm{CEO}}$ | -50 | V |
|  | Collector current | $\mathrm{I}_{\mathrm{C}}$ | -100 |  |
|  | Total power dissipation | $\mathrm{P}_{\mathrm{T}}$ | 300 | mW |
|  | Junction temperature | Operating ambient temperature | $\mathrm{T}_{\mathrm{j}}$ | 150 |
| ${ }^{\circ}{ }^{\circ} \mathrm{C}$ |  |  |  |  |
|  | Storage temperature | -40 to +85 | ${ }^{\circ} \mathrm{C}$ |  |

Electrical Characteristics $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C} \pm 3^{\circ} \mathrm{C}$


| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Collector-base voltage (Emitter open) | $\mathrm{V}_{\mathrm{CBO}}$ | $\mathrm{I}_{\mathrm{C}}=-10 \mu \mathrm{~A}, \mathrm{I}_{\mathrm{E}}=0$ | -50 |  |  | V |
| Collector-emitter voltage (Base open) | $\mathrm{V}_{\text {CEO }}$ | $\mathrm{I}_{\mathrm{C}}=-2 \mathrm{~mA}, \mathrm{I}_{\mathrm{B}}=0$ | -50 |  |  | V |
| Collector-base cutoff current (Emitter open) | $\mathrm{I}_{\text {CBO }}$ | $\mathrm{V}_{\mathrm{CB}}=-50 \mathrm{~V}, \mathrm{I}_{\mathrm{E}}=0$ |  |  | $-0.1$ | $\mu \mathrm{A}$ |
| Collector-emitter cutoff current (Base open) | $\mathrm{I}_{\text {CEO }}$ | $\mathrm{V}_{\mathrm{CE}}=-50 \mathrm{~V}, \mathrm{I}_{\mathrm{B}}=0$ |  |  | $-0.5$ | $\mu \mathrm{A}$ |
| Emitter-base cutoff current (Collector open) | $\mathrm{I}_{\text {EBO }}$ | $\mathrm{V}_{\mathrm{EB}}=-6 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=0$ |  |  | -1.0 | mA |
| Forward current transfer ratio | $\mathrm{h}_{\mathrm{FE}}$ | $\mathrm{V}_{\mathrm{CE}}=-10 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=-5 \mathrm{~mA}$ | 30 |  |  | - |
| $\mathrm{h}_{\mathrm{FE}}$ ratio ${ }^{* 1}$ | $\begin{gathered} \mathrm{h}_{\mathrm{FE}} \\ \text { (Small/Large) } \end{gathered}$ | $\mathrm{V}_{\mathrm{CE}}=-10 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=-5 \mathrm{~mA}$ | 0.50 | 0.99 |  | - |
| Collector-emitter saturation voltage | $\mathrm{V}_{\mathrm{CE} \text { (sat) }}$ | $\mathrm{I}_{\mathrm{C}}=-10 \mathrm{~mA}, \mathrm{I}_{\mathrm{B}}=-0.5 \mathrm{~mA}$ |  |  | -0.25 | V |
| Input voltage (ON) | $\mathrm{V}_{\mathrm{I}(\mathrm{on})}$ | $\mathrm{V}_{\mathrm{CE}}=-0.2 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=-5 \mathrm{~mA}$ | -1.7 |  |  | V |
| Input voltage (OFF) | $\mathrm{V}_{\mathrm{I} \text { (fff) }}$ | $\mathrm{V}_{\mathrm{CE}}=-5 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=-100 \mu \mathrm{~A}$ |  |  | -0.6 | V |
| Input resistance | $\mathrm{R}_{1}$ |  | -30\% | 4.7 | +30\% | $\mathrm{k} \Omega$ |
| Resistance ratio | $\mathrm{R}_{1} / \mathrm{R}_{2}$ |  | 0.37 | 0.47 | 0.57 | - |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. $* 1$ : Ratio between 2 elements







Mini5-G3-B




Land Pattern (Reference) (Unit: mm)


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