UP01213G

Silicon NPN epitaxial planar type

For digital circuits

■ Features

- Two elements incorporated into one package (Transistors with built-in resistor)
- Reduction of the mounting area and assembly cost by one half

■ Basic Part Number

• UNR1213 × 2

■ Absolute Maximum Ratings $T_a = 25$ °C

| Parameter | Symbol | Rating | Unit | |
|---------------------------------------|--------------------|-------------|------|--|
| Collector-base voltage (Emitter open) | V _{CBO} | 50 | V | |
| Collector-emitter voltage (Base open) | V _{CEO} | 50 | V | |
| Collector current | I_C | 100 | mA | |
| Total power dissipation | P _T 125 | | mW | |
| Junction temperature | T _j | 125 | °C | |
| Storage temperature | T _{stg} | -55 to +125 | °C | |

■ Package

Code

SSMini5-F3

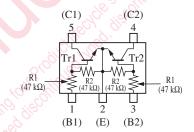
• Pin Name

1: Base (Tr1) 4: Collector (Tr2) 2: Emitter 5: Collector (Tr1)

3: Base (Tr2)

Marking Symbol: 9L

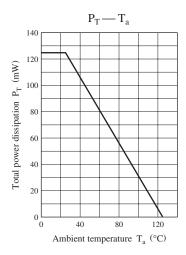
■ Internal Connection

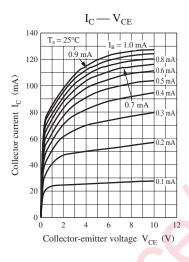


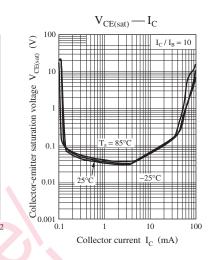
■ Electrical Characteristics $T_a = 25$ °C ± 3 °C

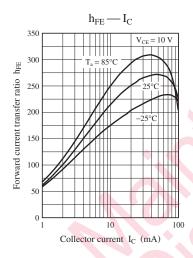
| Parameter | Symbol | Conditions | Min | Тур | Max | Unit |
|--|---------------------------------|--|------|-----|------|------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_{\rm C} = 10 \mu \text{A}, I_{\rm E} = 0$ | 50 | | | V |
| Collector-emitter voltage (Base open) | V _{CEO} | $I_C = 2 \text{ mA}, I_B = 0$ | 50 | | | V |
| Collector-base cutoff current (Emitter open) | I _{CBO} | $V_{CB} = 50 \text{ V}, I_{E} = 0$ | | | 0.1 | μΑ |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = 50 \text{ V}, I_{B} = 0$ | | | 0.5 | μΑ |
| Emitter-base cutoff current (Collector open) | I _{EBO} | $V_{EB} = 6 \text{ V}, I_{C} = 0$ | | | 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)} | $I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA}$ | | | 0.25 | 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} | $V_{CC} = 5 \text{ V}, V_{B} = 3.5 \text{ V}, R_{L} = 1 \text{ k}\Omega$ | | | 0.2 | V |
| Input resistance | R ₁ | | -30% | 47 | +30% | kΩ |
| Resistance ratio | R ₁ / R ₂ | | 0.8 | 1.0 | 1.2 | _ |
| Transition frequency | f_T | $V_{CB} = 10 \text{ V}, I_{E} = -2 \text{ mA}, f = 200 \text{ MHz}$ | | 150 | | MHz |

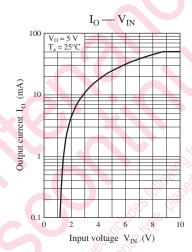
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

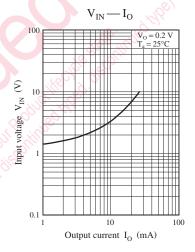






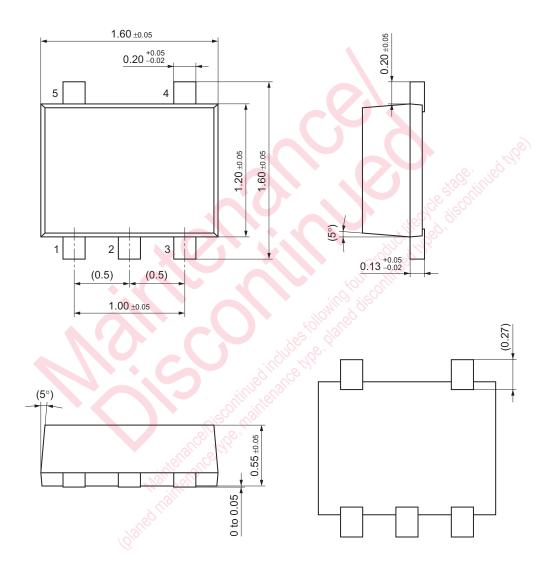






2 SJJ00364AED

SSMini5-F3 Unit: mm



SJJ00364AED 3

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