This product complies with the RoHS Directive (EU 2002/95/EC).



# UNR32AEG

## Silicon NPN epitaxial planar type

For digital circuits

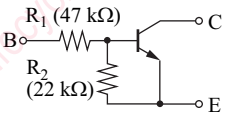
### ■ Features

- Suitable for high-density mounting and downsizing of the equipment
- Contribute to low power consumption

### ■ Package

- Code
  SSSMini3-F2
- Marking Symbol: KC
- Pin Name
  1: Base
  2: Emitter
  3: Collector

### ■ Internal Connection




### ■ 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 | $I_C$ | 80 | mA |
| Total power dissipation | $P_T$ | 100 | mW |
| Junction temperature | $T_j$ | 125 | °C |
| Storage temperature | $T_{stg}$ | −55 to +125 | °C |

### ■ Electrical Characteristics $T_a = 25°C \pm 3°C$

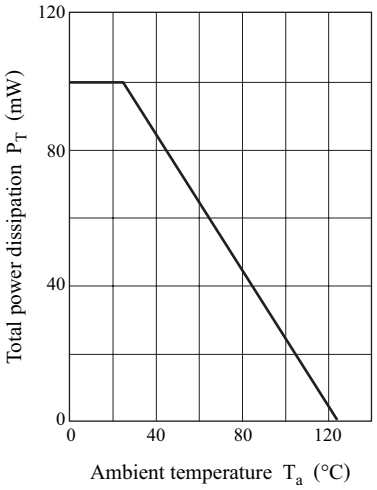
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | $I_C = 10\ \mu A$, $I_E = 0$ | 50 | | | V |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | $I_C = 2$ mA, $I_B = 0$ | 50 | | | V |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$ | $V_{CB} = 50$ V, $I_E = 0$ | | | 0.1 | μA |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$ | $V_{CE} = 50$ V, $I_B = 0$ | | | 0.5 | μA |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$ | $V_{EB} = 6$ V, $I_C = 0$ | | | 0.2 | mA |
| Forward current transfer ratio | $h_{FE}$ | $V_{CE} = 10$ V, $I_C = 5$ mA | 60 | | | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 10$ mA, $I_B = 0.3$ mA | | | 0.25 | V |
| Output voltage high-level | $V_{OH}$ | $V_{CC} = 5$ V, $V_B = 0.5$ V, $R_L = 1$ kΩ | 4.9 | | | V |
| Output voltage low-level | $V_{OL}$ | $V_{CC} = 5$ V, $V_B = 6$ V, $R_L = 1$ kΩ | | | 0.2 | V |
| Input resistance | $R_1$ | | −30% | 47 | +30% | kΩ |
| Resistance ratio | $R_1 / R_2$ | | 1.7 | 2.1 | 2.6 | — |
| Transition frequency | $f_T$ | $V_{CB} = 10$ V, $I_E = -2$ mA, f = 200 MHz | | 150 | | MHz |

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

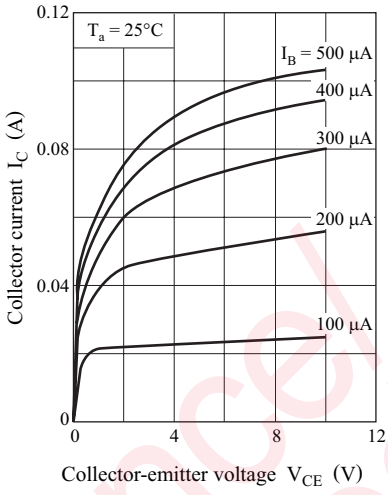
Maintenance/Discontinued

(Maintenance/Discontinued includes following four Product life cycle stage.
Planed maintenance type
Maintenance type
Planed discontinued typed
Discontinued type
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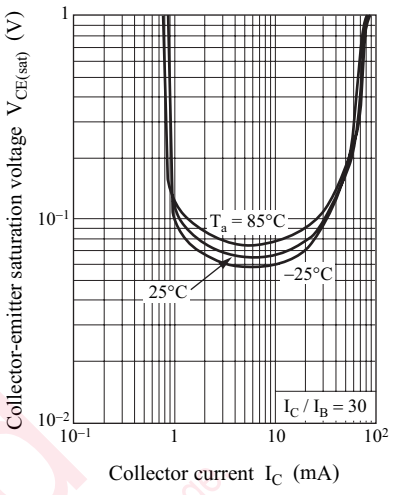
$P_T$ — $T_a$



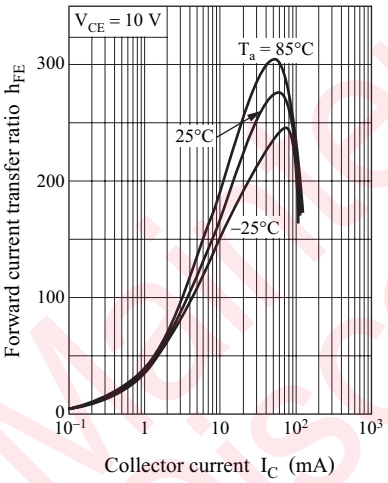

$I_C$ — $V_{CE}$



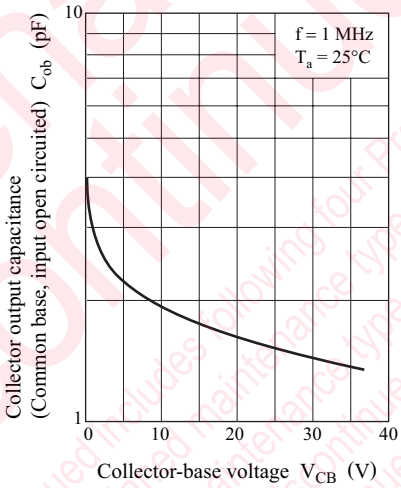

$V_{CE(sat)}$ — $I_C$



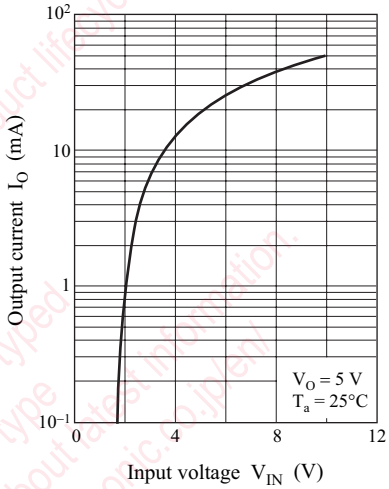

$h_{FE}$ — $I_C$



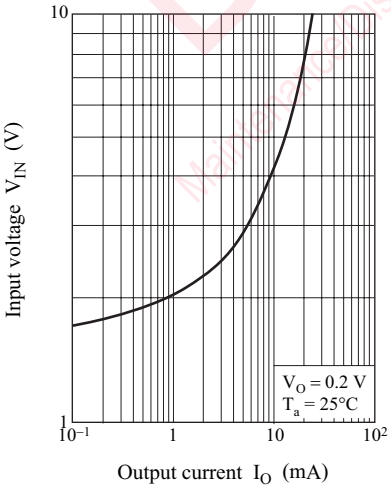

$C_{ob}$ — $V_{CB}$




$I_O$ — $V_{IN}$




$V_{IN}$ — $I_O$

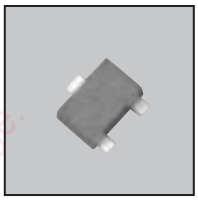


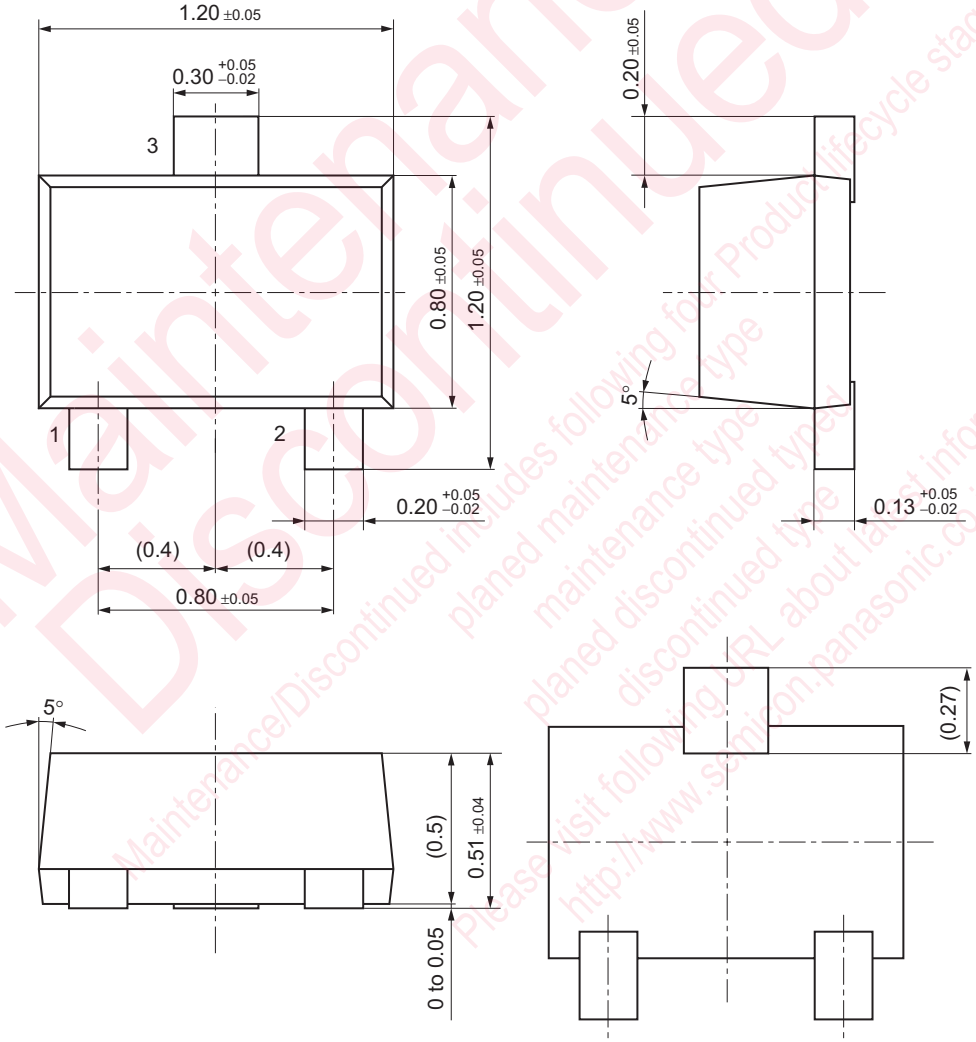

Maintenance/Discontinued

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# SSSMini3-F2

Unit: mm






Maintenance/Discontinued includes following for Product lifecycle stage.
planed maintenance type
maintenance type
planed discontinued type
discontinued type
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Maintenance/Discontinued
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