# 2SC3931G

## Silicon NPN epitaxial planar type

For high-frequency amplification

### ■ Features

- Optimum for RF amplification of FM/AM radios
- High transition frequency $f_T$
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing

### ■ Package

- Code
  SMini3-F2
- Marking Symbol: U
- Pin Name
  1. Base
  2. Emitter
  3. Collector

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

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 30 | V |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 20 | V |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 3 | V |
| Collector current | $I_C$ | 15 | mA |
| Collector power dissipation | $P_C$ | 150 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |

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

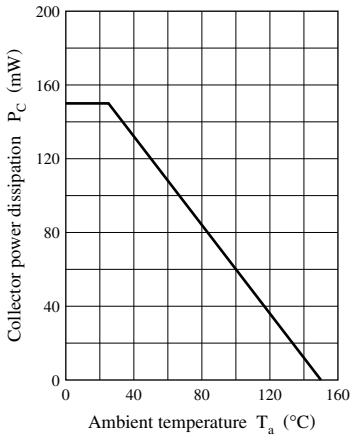
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | $I_C = 10\ \mu A$, $I_E = 0$ | 30 | | | V |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | $I_E = 10\ \mu A$, $I_C = 0$ | 3 | | | V |
| Base-emitter voltage | $V_{BE}$ | $V_{CB} = 6$ V, $I_E = -1$ mA | | 720 | | mV |
| Forward current transfer ratio * | $h_{FE}$ | $V_{CB} = 6$ V, $I_E = -1$ mA | 65 | | 260 | — |
| Transition frequency | $f_T$ | $V_{CB} = 6$ V, $I_E = -1$ mA, f = 200 MHz | 450 | 650 | | MHz |
| Common-emitter reverse transfer capacitance | $C_{re}$ | $V_{CB} = 6$ V, $I_E = -1$ mA, f = 10.7 MHz | | 0.8 | 1.0 | pF |
| Power gain | $G_P$ | $V_{CB} = 6$ V, $I_E = -1$ mA, f = 100 MHz | | 24 | | dB |
| Noise figure | NF | $V_{CB} = 6$ V, $I_E = -1$ mA, f = 100 MHz | | 3.3 | | dB |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

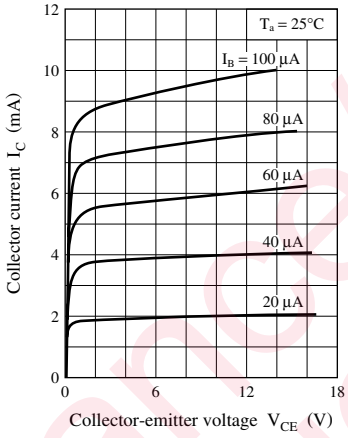
| Rank | C | D |
|---|---|---|
| $h_{FE}$ | 65 to 160 | 100 to 260 |

Maintenance/Discontinued
This product includes following four Product lifecycle stage.
Planned maintenance type
Maintenance type
Planned discontinued typed
Discontinued type
Please visit following URL and check latest information.
http://www.semicon.panasonic.co.jp/en/

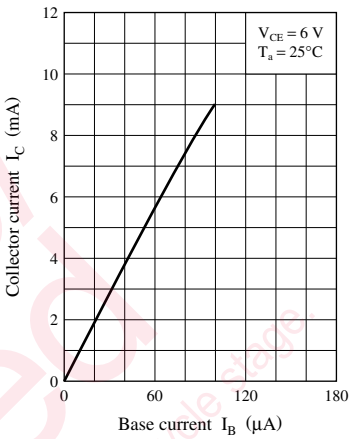
$P_C$ — $T_a$



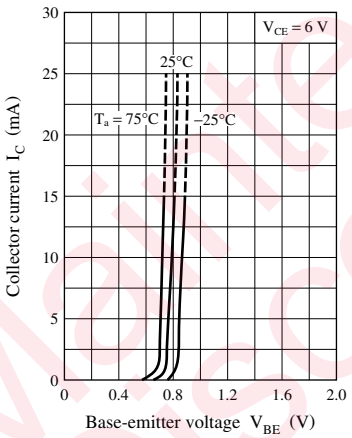

$I_C$ — $V_{CE}$



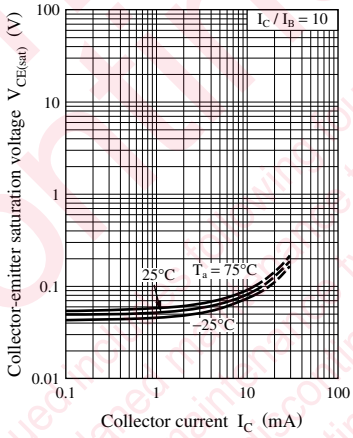

$I_C$ — $I_B$



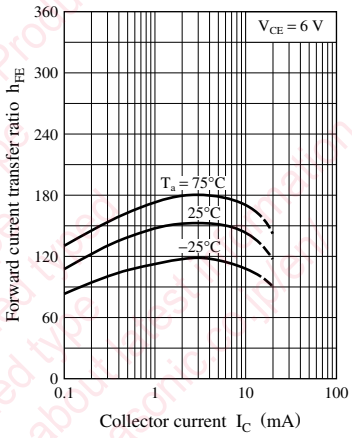

$I_C$ — $V_{BE}$



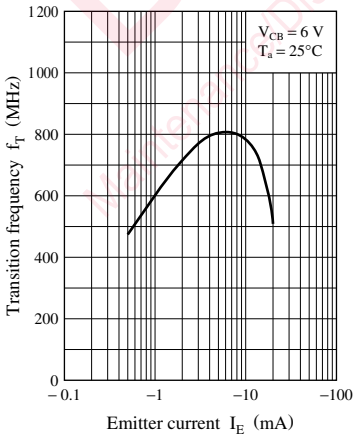

$V_{CE(sat)}$ — $I_C$



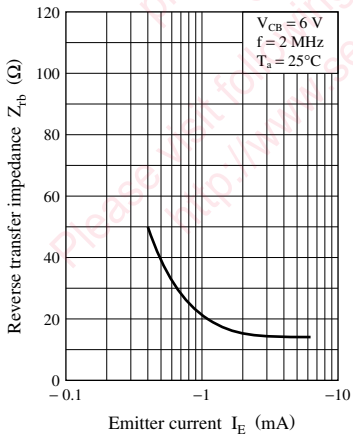

$h_{FE}$ — $I_C$



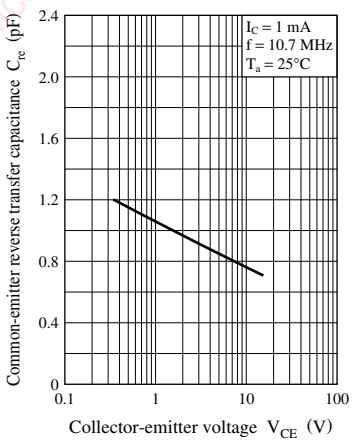

$f_T$ — $I_E$




$Z_{rb}$ — $I_E$

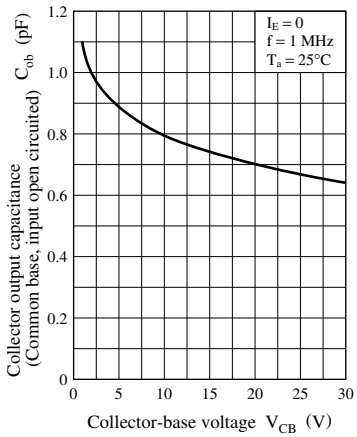



$C_{re}$ — $V_{CE}$

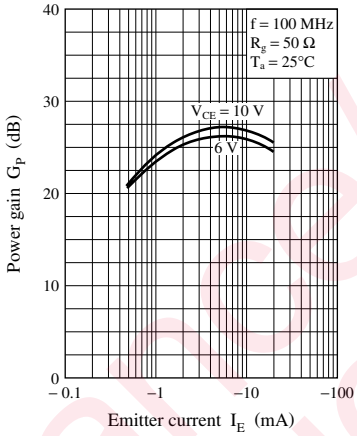



Maintenance/ Discontinued
This product will be discontinued or maintenance type in your Product lifecycle stage planed. Please refer to the latest information.
Maintenance/ discontinued type (2SC3931G) is planned discontinued type. Please refer to following URL about latest information.
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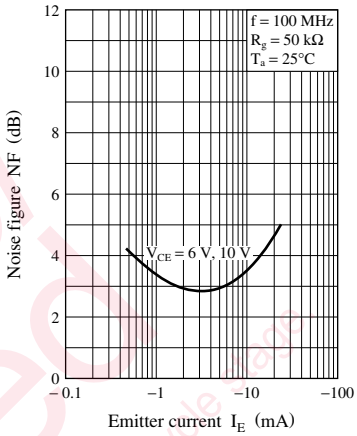
$C_{ob}$ — $V_{CB}$



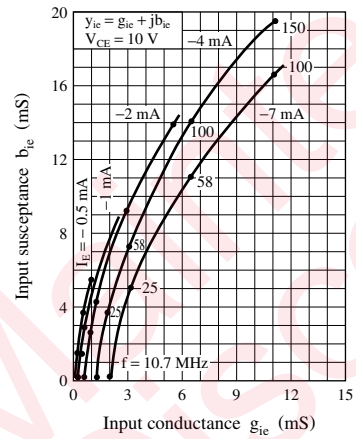

$G_P$ — $I_E$



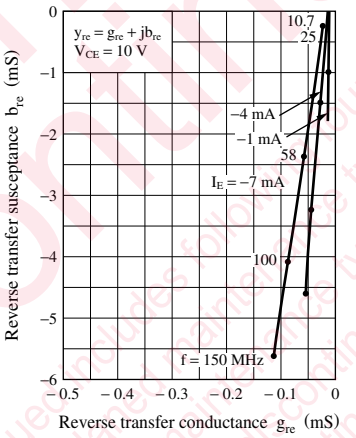

NF — $I_E$



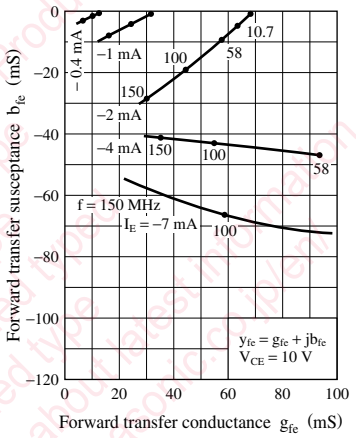

$b_{ie}$ — $g_{ie}$



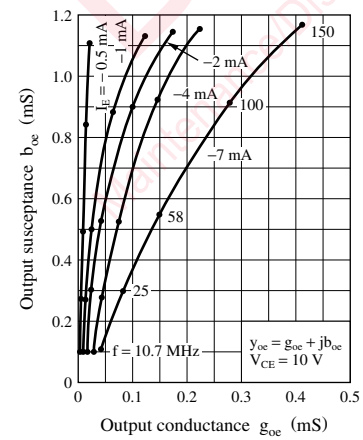

$b_{re}$ — $g_{re}$




$b_{fe}$ — $g_{fe}$



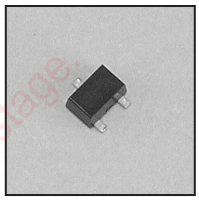

$b_{oe}$ — $g_{oe}$

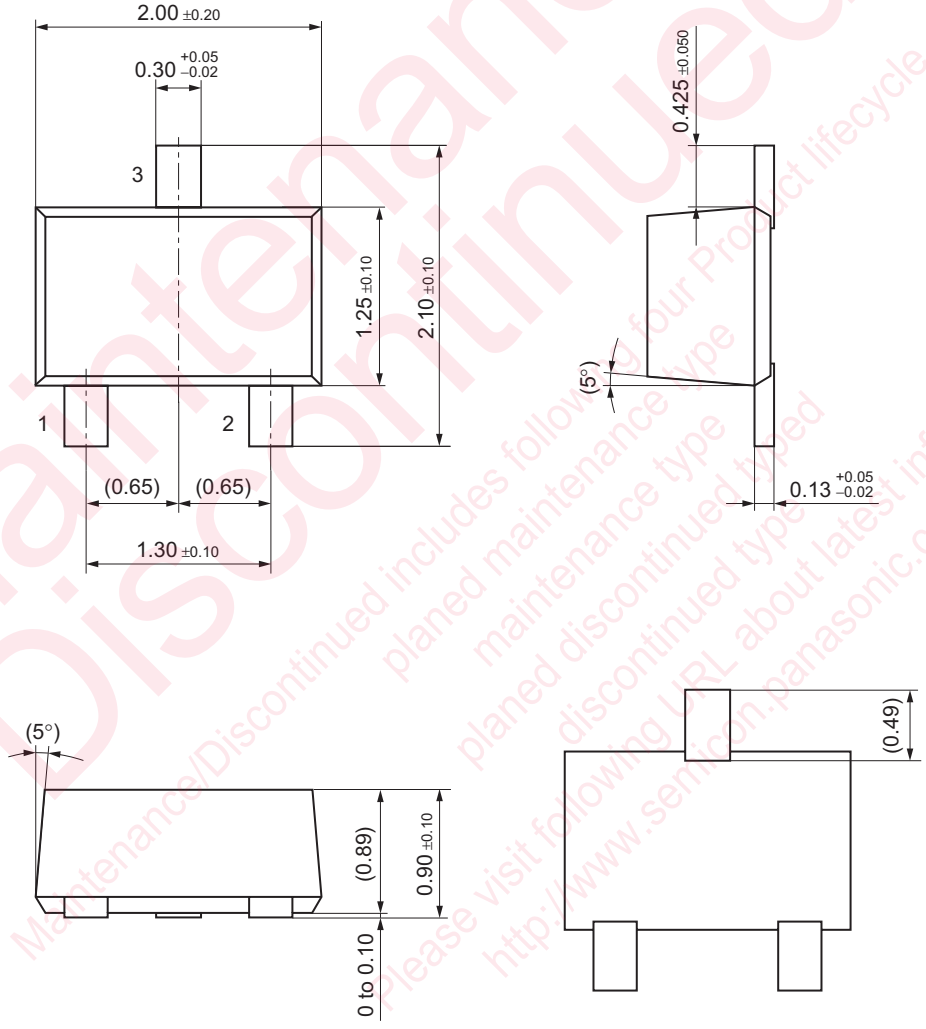



Maintenance/ Discontinued
This product includes discontinued type(s). Please visit following URL about latest information. http://www.semicon.panasonic.co.jp/en/

# SMini3-F2

Unit: mm






Maintenance/Discontinued includes following four Product lifecycle stage.
planed maintenance type
maintenance type
planed discontinued type
discontinued type
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Maintenance/Discontinued includes following our product life cycle stage.
planed maintenance type
maintenance type
planed discontinued type
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Maintenance/ Discontinued

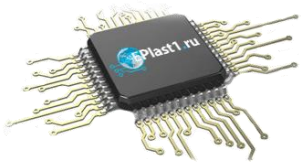
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**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
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