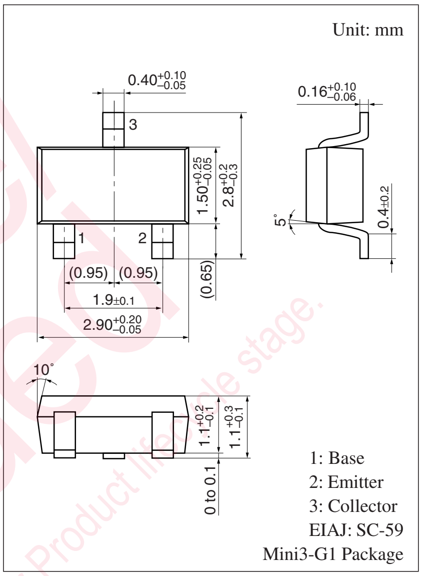
# 2SA1034, 2SA1035

## Silicon PNP epitaxial planar type

For low-frequency and low-noise amplification
Complementary to 2SC2405, 2SC2406



### Features

- Low noise voltage NV
- High forward current transfer ratio $h_{FE}$
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

Marking Symbol:
- 2SA1034: F
- 2SA1035: H

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

| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Collector-base voltage (Emitter open) | 2SA1034 | $V_{CBO}$ | −35 | V |
| | 2SA1035 | | −55 | |
| Collector-emitter voltage (Base open) | 2SA1034 | $V_{CEO}$ | −35 | V |
| | 2SA1035 | | −55 | |
| Emitter-base voltage (Collector open) | | $V_{EBO}$ | −5 | V |
| Collector current | | $I_C$ | −50 | mA |
| Peak collector current | | $I_{CP}$ | −100 | mA |
| Collector power dissipation | | $P_C$ | 200 | 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) | 2SA1034 | $V_{CBO}$ | $I_C = -10\ \mu A$, $I_E = 0$ | −35 | | | V |
| | 2SA1035 | | | −55 | | | |
| Collector-emitter voltage (Base open) | 2SA1034 | $V_{CEO}$ | $I_C = -2$ mA, $I_B = 0$ | −35 | | | V |
| | 2SA1035 | | | −55 | | | |
| Emitter-base voltage (Collector open) | | $V_{EBO}$ | $I_E = -10\ \mu A$, $I_C = 0$ | −5 | | | V |
| Base-emitter voltage *1 | | $V_{BE}$ | $V_{CE} = -1$ V, $I_C = -100$ mA | | − 0.7 | −1.0 | V |
| Collector-base cutoff current (Emitter open) | | $I_{CBO}$ | $V_{CB} = -10$ V, $I_E = 0$ | | | − 0.1 | µA |
| Collector-emitter cutoff current (Base open) | | $I_{CEO}$ | $V_{CE} = -10$ V, $I_B = 0$ | | | −1 | µA |
| Forward current transfer ratio *2 | | $h_{FE}$ | $V_{CE} = -5$ V, $I_C = -2$ mA | 180 | | 700 | — |
| Collector-emitter saturation voltage *1 | | $V_{CE(sat)}$ | $I_C = -100$ mA, $I_B = -10$ mA | | | − 0.6 | V |
| Transition frequency | | $f_T$ | $V_{CB} = -5$ V, $I_E = 2$ mA, f = 200 MHz | | 200 | | MHz |
| Noise voltage | | NV | $V_{CE} = -10$ V, $I_C = -1$ mA, $G_V = 80$ dB<br>$R_g = 100\ k\Omega$, Function = FLAT | | | 150 | mV |

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

| Rank | R | S | T |
|---|---|---|---|
| $h_{FE}$ | 180 to 360 | 260 to 520 | 360 to 700 |

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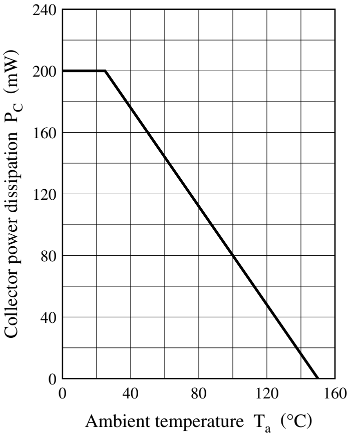
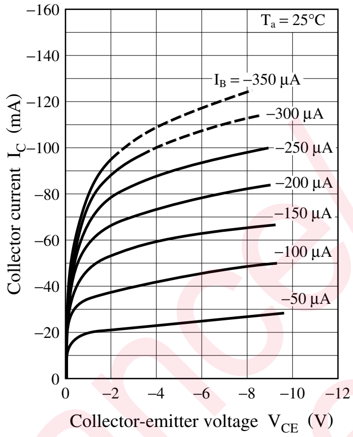
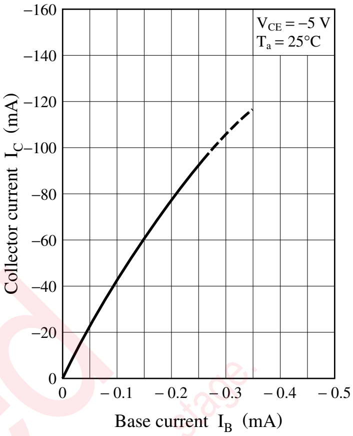
$P_C$ — $T_a$



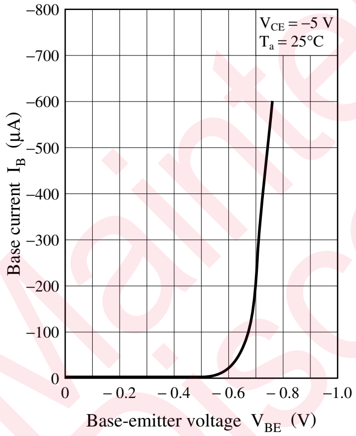
$I_C$ — $V_{CE}$



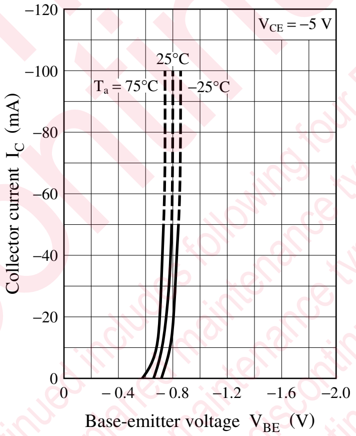
$I_C$ — $I_B$



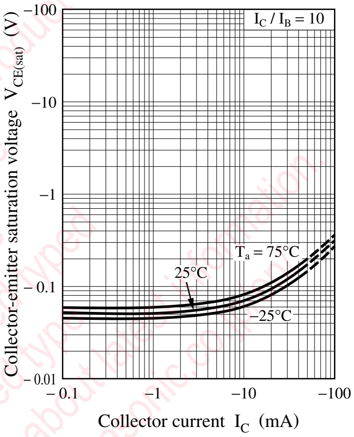
$I_B$ — $V_{BE}$



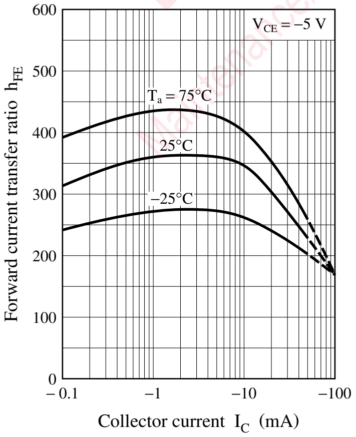
$I_C$ — $V_{BE}$



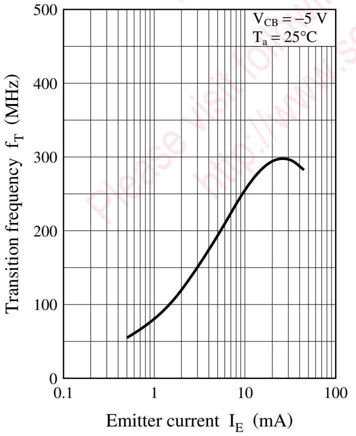
$V_{CE(sat)}$ — $I_C$



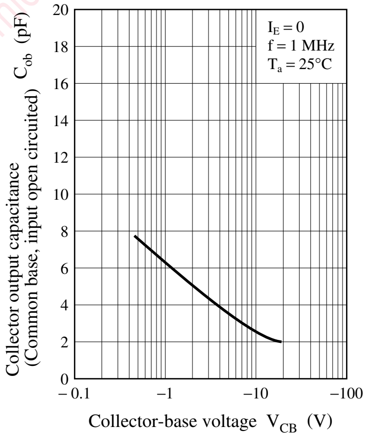
$h_{FE}$ — $I_C$



$f_T$ — $I_E$



$C_{ob}$ — $V_{CB}$



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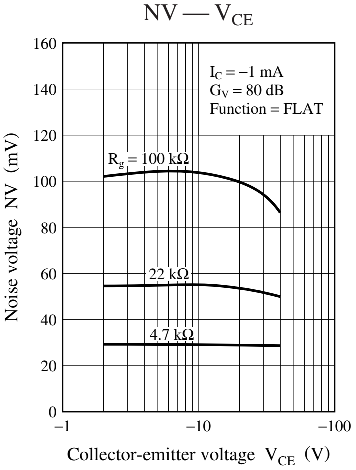
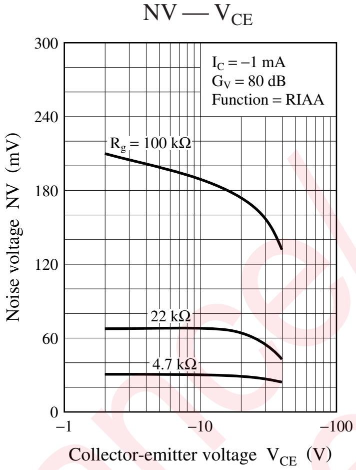
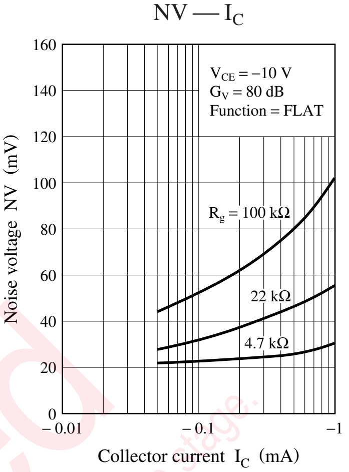
NV — $V_{CE}$



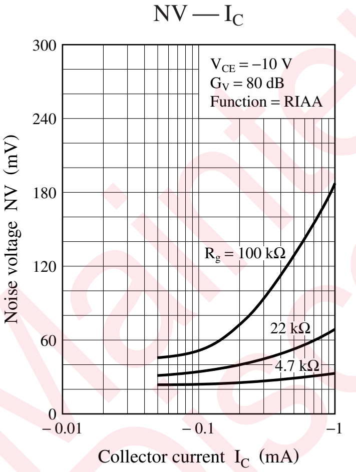
NV — $V_{CE}$



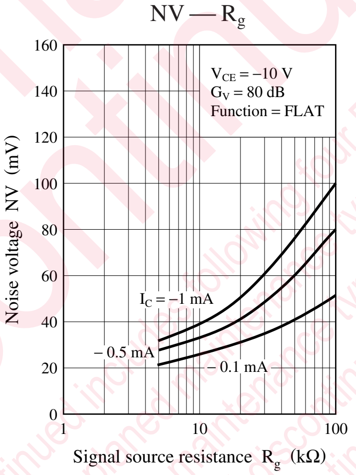
NV — $I_C$



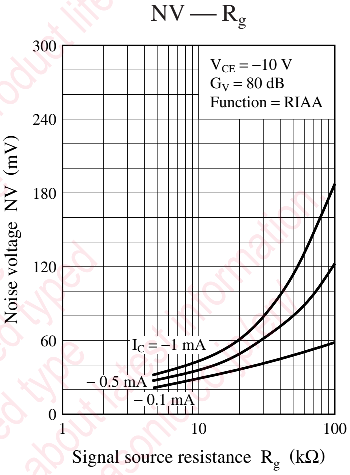
NV — $I_C$



NV — $R_g$



NV — $R_g$



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