

2SC3312

Silicon NPN epitaxial planar type

For low-frequency and low-noise amplification

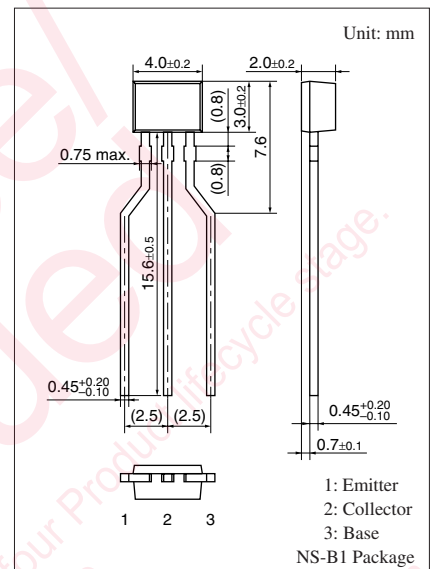
Complementary to 2SA1310

■ Features

- Optimum for high-density mounting
- Allowing supply with the radial tapering
- Low noise voltage NV

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|------------------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 60 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 55 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | 7 | V |
| Collector current | I_{C} | 100 | mA |
| Peak collector current | I_{CP} | 200 | mA |
| Collector power dissipation | P_{C} | 300 | mW |
| Junction temperature | T_{j} | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



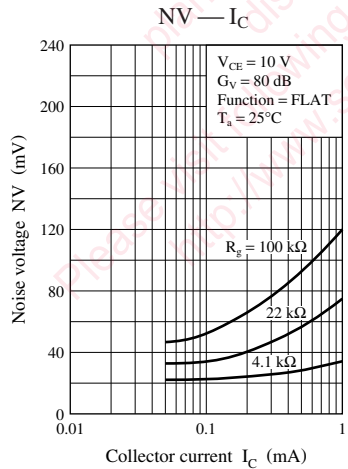
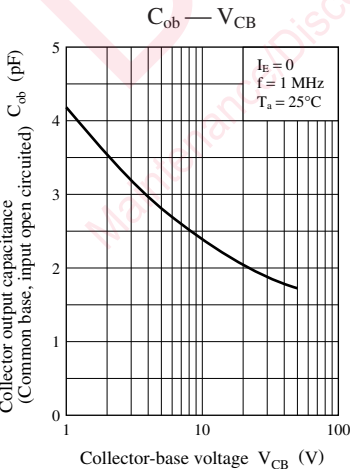
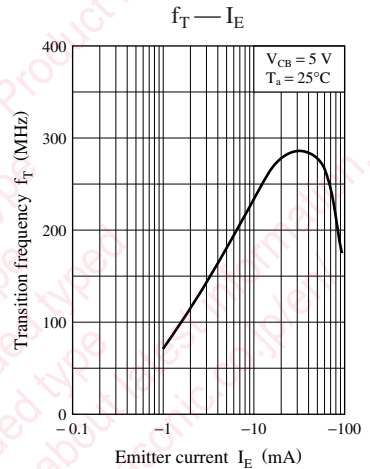
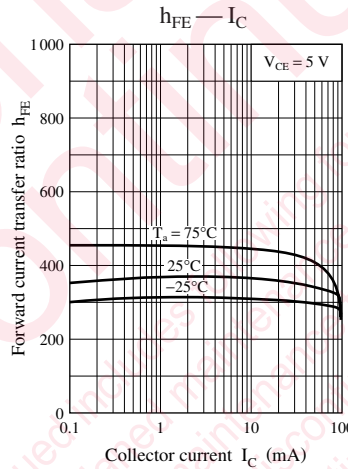
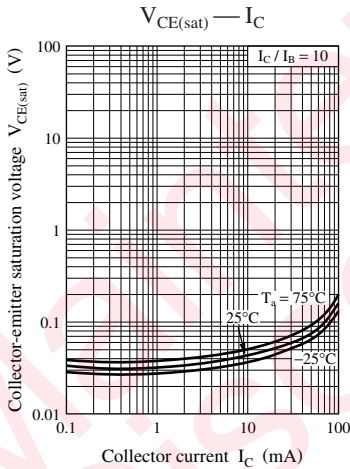
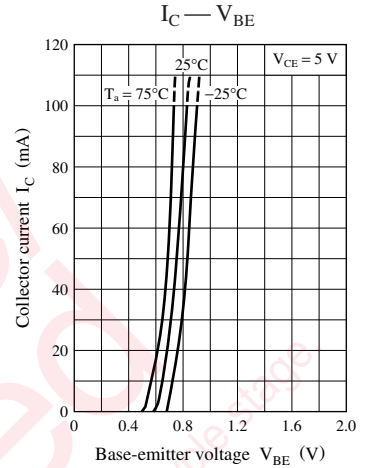
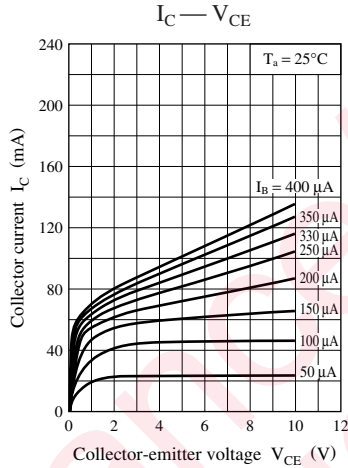
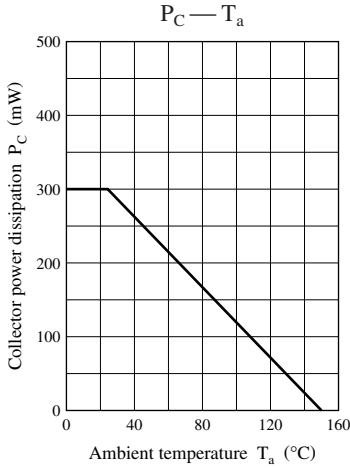
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|----------------------|--|-----|-----|-----|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_{\text{C}} = 10 \mu\text{A}, I_{\text{E}} = 0$ | 60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_{\text{C}} = 2 \text{ mA}, I_{\text{B}} = 0$ | 55 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_{\text{E}} = 10 \mu\text{A}, I_{\text{C}} = 0$ | 7 | | | V |
| Base-emitter voltage | V_{BE} | $V_{\text{CE}} = 1 \text{ V}, I_{\text{C}} = 30 \text{ mA}$ | | | 1 | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{\text{CB}} = 20 \text{ V}, I_{\text{E}} = 0$ | | | 0.1 | μA |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{\text{CE}} = 20 \text{ V}, I_{\text{B}} = 0$ | | | 1 | μA |
| Forward current transfer ratio * | h_{FE} | $V_{\text{CE}} = 5 \text{ V}, I_{\text{C}} = 2 \text{ mA}$ | 180 | | 700 | — |
| Collector-emitter saturation voltage | $V_{\text{CE(sat)}}$ | $I_{\text{C}} = 100 \text{ mA}, I_{\text{B}} = 10 \text{ mA}$ | | | 1 | V |
| Transition frequency | f_{T} | $V_{\text{CB}} = 5 \text{ V}, I_{\text{E}} = -2 \text{ mA}, f = 200 \text{ MHz}$ | | 200 | | MHz |
| Noise voltage | NV | $V_{\text{CE}} = 10 \text{ V}, I_{\text{C}} = 1 \text{ mA}, G_{\text{V}} = 80 \text{ dB}$ $R_{\text{g}} = 100 \text{ k}\Omega, \text{Function} = \text{FLAT}$ | | | 150 | mV |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

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



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