

Transistors

Small signal low frequency amplifier (50V, 100mA) 2SC6114

●Applications

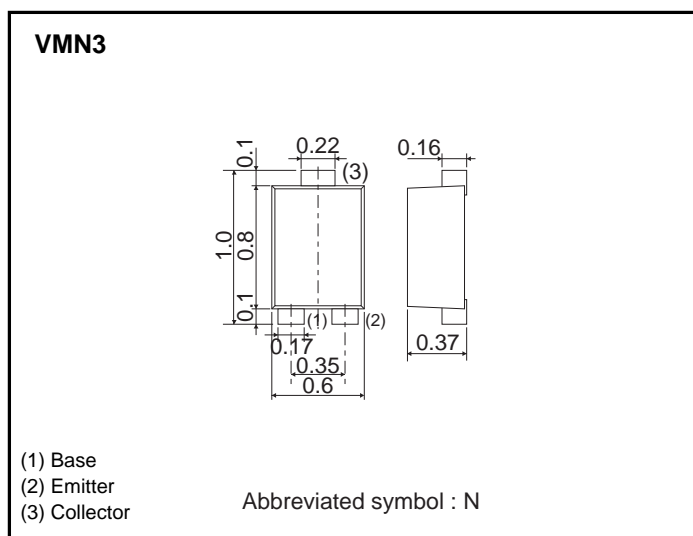
Small signal low frequency amplifier

●Features

- 1) Low Cob.
Cob=2.0pF (Typ.)
- 2) Complements the 2SA2199.

●Structure

NPN silicon epitaxial
planar transistor



●Dimensions (Unit : mm)

●Absolute maximum (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|------------------------------|-------------|-------------|------|
| Collector-base voltage | V_{CBO} | 50 | V |
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 100 | mA |
| | I_{CP} *1 | 200 | |
| Power dissipation | P_D *2 | 150 | mW |
| Junction temperature | T_j | 150 | °C |
| Range of storage temperature | T_{stg} | -55 to +150 | °C |

*1 $P_w=1ms$ Single pulse

*2 Each terminal mounted on a recommended land

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●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|---------------|---|
| Collector-emitter breakdown voltage | BV_{CEO} | 50 | — | — | V | $I_C=1\text{mA}$ |
| Collector-base breakdown voltage | BV_{CBO} | 50 | — | — | V | $I_C=50\mu\text{A}$ |
| Emitter-base breakdown voltage | BV_{EBO} | 5 | — | — | V | $I_E=50\mu\text{A}$ |
| Collector cutoff current | I_{CBO} | — | — | 0.1 | μA | $V_{CB}=50\text{V}$ |
| Emitter cutoff current | I_{EBO} | — | — | 0.1 | μA | $V_{EB}=5\text{V}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | — | 0.3 | V | $I_C/I_B=25\text{mA}/2.5\text{mA}$ |
| DC current gain | h_{FE} | 120 | — | 390 | — | $V_{CE}=6\text{V}, I_C=2\text{mA}$ |
| Transition frequency | f_r | — | 130 | — | MHz | $V_{CE}=10\text{V}, I_E=-1\text{mA}, f=100\text{MHz}$ |
| Output capacitance | C_{ob} | — | 1.0 | — | pF | $V_{CE}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$ |

 h_{FE} RANK

| Rank | Q | R |
|----------|------------|------------|
| h_{FE} | 120 to 270 | 180 to 390 |

●Electrical characteristic curves

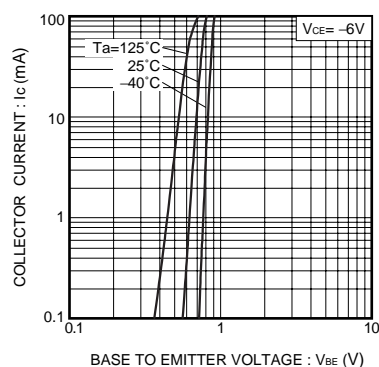


Fig.1 Grounded emitter propagation characteristics

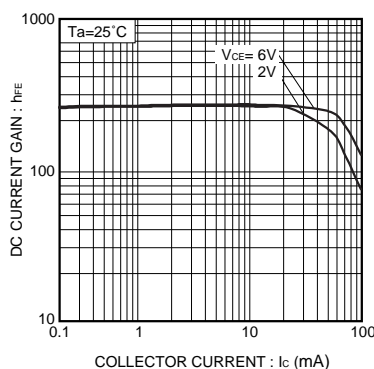


Fig.2 DC current gain vs. collector current (I)

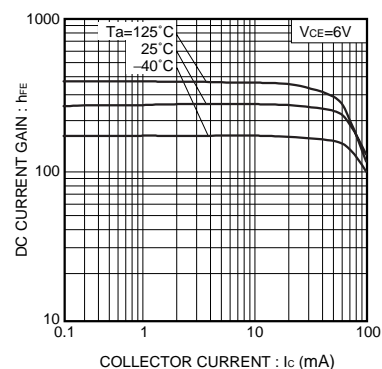


Fig.3 DC current gain vs. collector current (II)

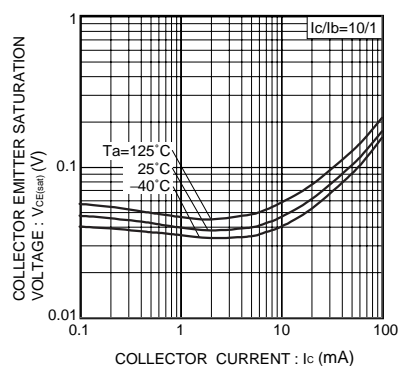


Fig.4 Collector-emitter saturation voltage vs. collector current

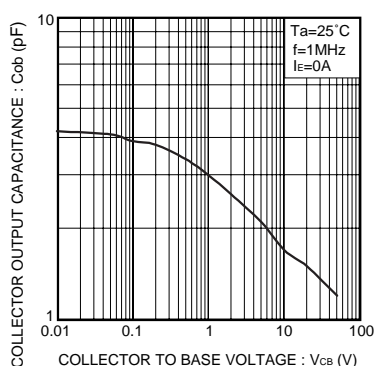


Fig.5 Collector output capacitance

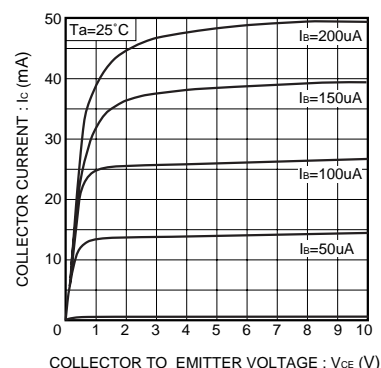


Fig.6 Typical output characteristics

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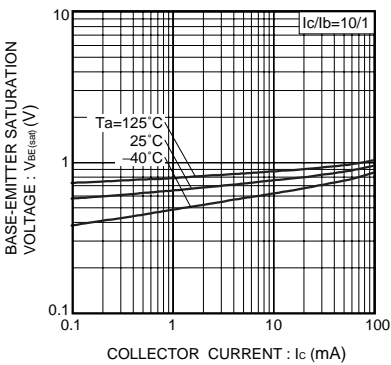


Fig.7 Base-emitter saturation voltage vs. collector current

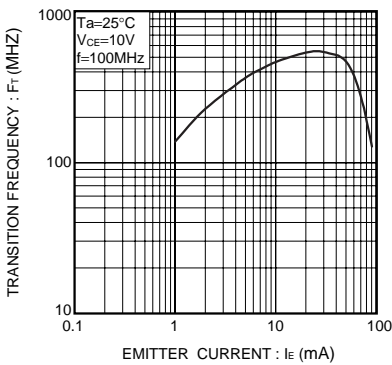


Fig.8 Transition frequency

Appendix

Notes

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