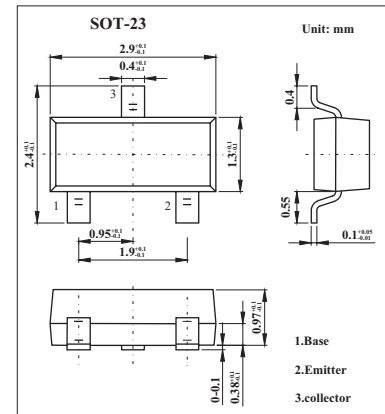


## Silicon NPN Epitaxial

## 2SC3122

## ■ Features

- High Gain:  $G_{pe}=24\text{dB(Typ.)}(f=200\text{MHz})$
- Low Noise : $NF=2.0\text{dB(Typ.)}(f=200\text{MHz})$
- Excellent Forward AGC Characteristics

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

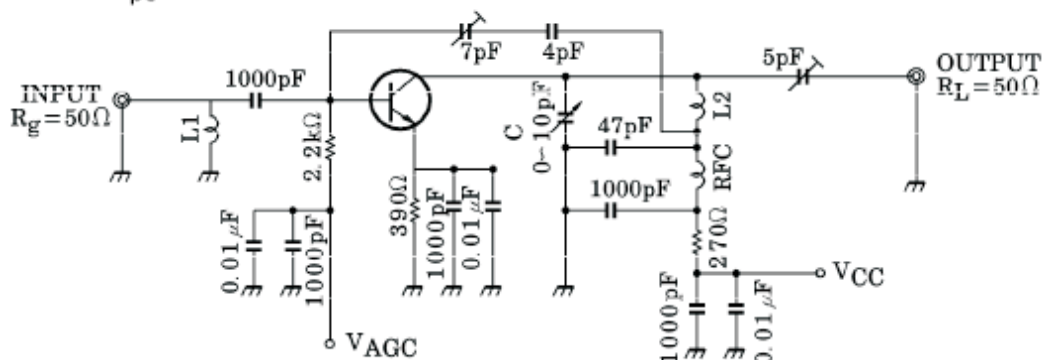
| Parameter                   | Symbol    | Rating      | Unit             |
|-----------------------------|-----------|-------------|------------------|
| Collector-base voltage      | $V_{CB0}$ | 30          | V                |
| Collector-emitter voltage   | $V_{CE0}$ | 30          | V                |
| Emitter-base voltage        | $V_{EB0}$ | 3           | V                |
| Collector current           | $I_C$     | 20          | mA               |
| Base current                | $I_B$     | 10          | mA               |
| Collector Power Dissipation | $P_C$     | 150         | mW               |
| Junction temperature        | $T_J$     | 125         | $^\circ\text{C}$ |
| Storage temperature Range   | $T_{stg}$ | -55 to +125 | $^\circ\text{C}$ |

## 2SC3122

## ■ Electrical Characteristics Ta = 25°C

| Parameter                           | Symbol               | Testconditions                                         | Min | Typ | Max  | Unit |
|-------------------------------------|----------------------|--------------------------------------------------------|-----|-----|------|------|
| Collector cut-off current           | ICBO                 | V <sub>CB</sub> = 25V, I <sub>E</sub> = 0              |     |     | 100  | nA   |
| Emitter cut-off current             | IEBO                 | V <sub>EB</sub> = 2V, I <sub>C</sub> = 0               |     |     | 100  | nA   |
| Collector-emitter breakdown voltage | V <sub>(BR)CEO</sub> | I <sub>C</sub> =1mA, I <sub>B</sub> =0                 | 30  |     |      | V    |
| DC current gain                     | h <sub>FE</sub>      | V <sub>CE</sub> = 10 V, I <sub>C</sub> = 2 mA          | 60  | 150 | 300  |      |
| Reverse Transfer Capacitance        | C <sub>re</sub>      | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz        |     | 0.3 | 0.45 | pF   |
| Transition Frequency                | f <sub>T</sub>       | V <sub>CE</sub> = 10 V, I <sub>C</sub> = 2mA           | 400 | 650 |      | MHz  |
| Power Gain                          | G <sub>pe</sub>      | V <sub>ce</sub> =12V, V <sub>AGC</sub> =1.4V, f=200MHz | 20  | 24  | 28   | dB   |
| Noise Figure                        | NF                   | V <sub>CC</sub> =12V, GR=30dB, f=200MHz *              |     | 2.0 | 3.2  | dB   |
| AGC Voltage                         | V <sub>AGC</sub>     |                                                        | 3.6 | 4.4 | 5.1  | V    |

\*V<sub>AGC</sub> measured by test circuit shown in Fig.1 when power gain is reduced to 30dB compared that of V<sub>AGC</sub> at 1.4V

Fig.1 200MHz G<sub>pe</sub>, NF TEST CIRCUIT

L1 : RF Coil M-15T (TOKO Inc.) or EQUIVALENT

L2 : RF Coil M-25T (TOKO Inc.) or EQUIVALENT

## ■ Marking

|         |    |
|---------|----|
| Marking | HD |
|---------|----|