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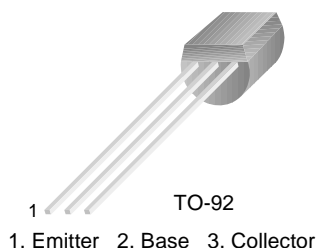
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# SS9014

SS9014

## Pre-Amplifier, Low Level & Low Noise

- High total power dissipation. ( $P_T=450mW$ )
- High  $h_{FE}$  and good linearity
- Complementary to SS9015



## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ C$ unless otherwise noted

| Symbol    | Parameter                   | Ratings   | Units      |
|-----------|-----------------------------|-----------|------------|
| $V_{CBO}$ | Collector-Base Voltage      | 50        | V          |
| $V_{CEO}$ | Collector-Emitter Voltage   | 45        | V          |
| $V_{EBO}$ | Emitter-Base Voltage        | 5         | V          |
| $I_C$     | Collector Current           | 100       | mA         |
| $P_C$     | Collector Power Dissipation | 450       | mW         |
| $T_J$     | Junction Temperature        | 150       | $^\circ C$ |
| $T_{STG}$ | Storage Temperature         | -55 ~ 150 | $^\circ C$ |

### Electrical Characteristics $T_a=25^\circ C$ unless otherwise noted

| Symbol        | Parameter                           | Test Condition                                   | Min. | Typ. | Max. | Units |
|---------------|-------------------------------------|--|------|------|------|-------|
| $BV_{CBO}$    | Collector-Base Breakdown Voltage    | $I_C=100\mu A, I_E=0$                            | 50   |      |      | V     |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage | $I_C=1mA, I_B=0$                                 | 45   |      |      | V     |
| $BV_{EBO}$    | Emitter-Base Breakdown Voltage      | $I_E=100\mu A, I_C=0$                            | 5    |      |      | V     |
| $I_{CBO}$     | Collector Cut-off Current           | $V_{CB}=50V, I_E=0$                              |      |      | 50   | nA    |
| $I_{EBO}$     | Emitter Cut-off Current             | $V_{EB}=5V, I_C=0$                               |      |      | 50   | nA    |
| $h_{FE}$      | DC Current Gain                     | $V_{CE}=5V, I_C=1mA$                             | 60   | 280  | 1000 |       |
| $V_{CE(sat)}$ | Collector-Base Saturation Voltage   | $I_C=100mA, I_B=5mA$                             |      | 0.14 | 0.3  |       |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage     | $I_C=100mA, I_B=5mA$                             |      | 0.84 | 1.0  | V     |
| $V_{BE(on)}$  | Base-Emitter On Voltage             | $V_{CE}=5V, I_C=2mA$                             | 0.58 | 0.63 | 0.7  | V     |
| $C_{ob}$      | Output Capacitance                  | $V_{CB}=10V, I_E=0$<br>$f=1MHz$                  |      | 2.2  | 3.5  | pF    |
| $f_T$         | Current Gain Bandwidth Product      | $V_{CE}=5V, I_C=10mA$                            | 150  | 270  |      | MHz   |
| NF            | Noise Figure                        | $V_{CE}=5V, I_C=0.2mA$<br>$f=1KHz, R_S=2K\Omega$ |      | 0.9  | 10   | dB    |

### $h_{FE}$ Classification

| Classification | A        | B         | C         | D          |
|----------------|----------|-----------|-----------|------------|
| $h_{FE}$       | 60 ~ 150 | 100 ~ 300 | 200 ~ 600 | 400 ~ 1000 |

# Typical Characteristics

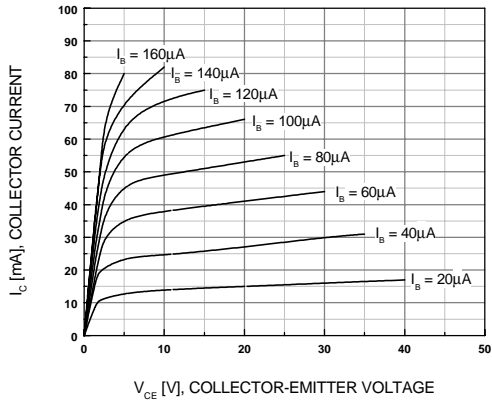


Figure 1. Static Characteristic

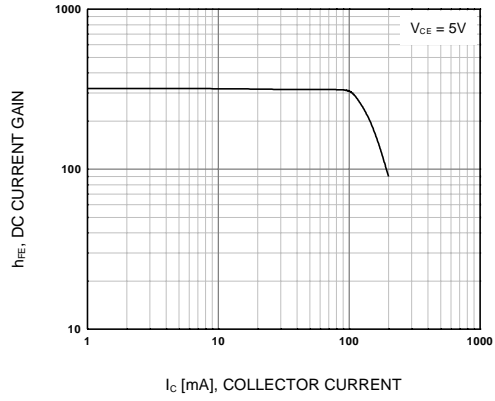


Figure 2. DC current Gain

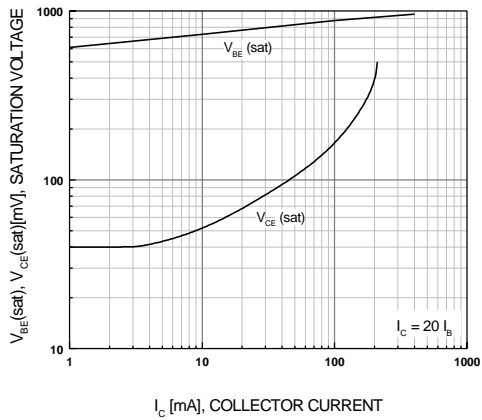


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

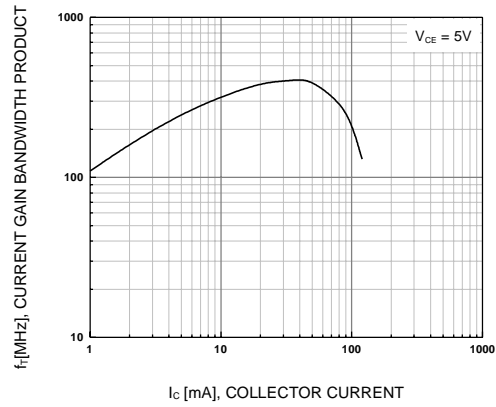


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

SS9014

## TO-92



Dimensions in Millimeters

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