

Descriptions

This is Silicon NPN transistor in a TO-92 Plastic Package.

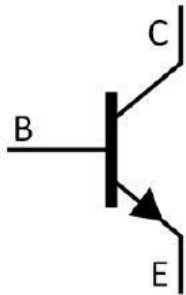
Features

- High PC and hFE excellent hFE linearity
- complementary pair with 9015

Applications

- Low frequency, low noise amplifier.

Equivalent Circuit & Pinning



PIN1: Collector

PIN 2: Base

PIN 3: Emitter

hFE Classifications & Marking

| h _{FE} Classifications Symbol | A | B | C | D |
|--|--------|---------|---------|----------|
| h _{FE} Range | 60~150 | 100~300 | 200~600 | 400~1000 |

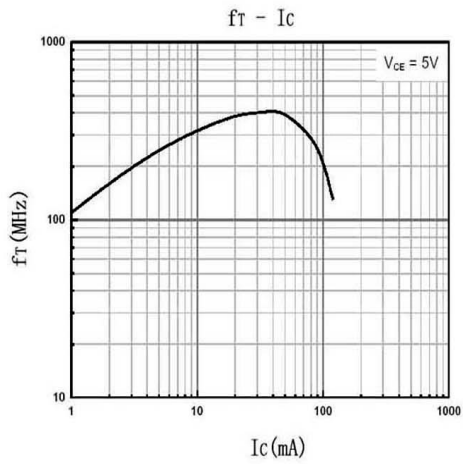
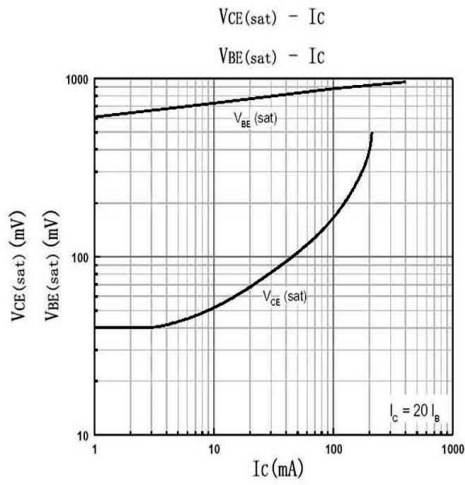
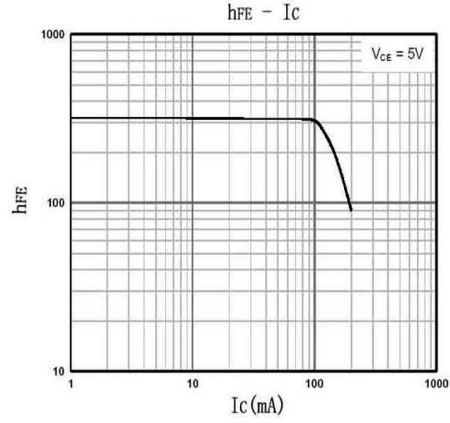
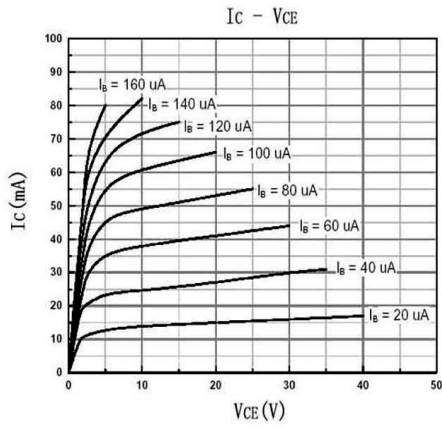
Absolute Maximum Ratings(Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|-----------|------|
| Collector to Base Voltage | V_{CBO} | 50 | V |
| Collector to Emitter Voltage | V_{CEO} | 45 | V |
| Emitter to Base Voltage | V_{EBO} | 5.0 | V |
| Collector Current - Continuous | I_C | 100 | mA |
| Collector Power Dissipation | P_C | 450 | mW |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature Range | T_{stg} | -55 ~ 150 | °C |

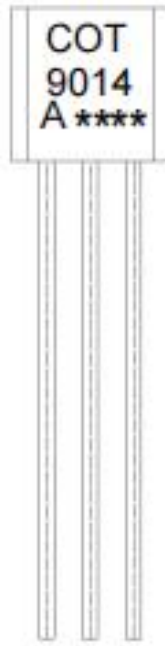
Electrical Characteristics(Ta=25°C)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|------|------|---------|
| Collector to Base Breakdown Voltage | V_{CBO} | $I_C=0.1mA$ $I_E=0$ | 50 | | | V |
| Collector to Emitter Breakdown Voltage | V_{CEO} | $I_C=1.0mA$ $I_B=0$ | 45 | | | V |
| Emitter to Base Breakdown Voltage | V_{EBO} | $I_E=0.1mA$ $I_C=0$ | 5.0 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=50V$ $I_E=0$ | | | 0.05 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=5.0V$ $I_C=0$ | | | 0.05 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=5.0V$ $I_C=1.0mA$ | 60 | | 1000 | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=100mA$ $I_B=5.0mA$ | | 0.14 | 0.3 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=100mA$ $I_B=5.0mA$ | | 0.84 | 1.0 | V |
| Base to Emitter Voltage | V_{BE} | $V_{CE}=5.0V$ $I_C=2.0mA$ | | 0.63 | 0.7 | V |
| Transition Frequency | f_T | $V_{CE}=5.0V$ $I_C=10mA$ | 150 | 270 | | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=10V$ $f=1.0MHz$ | | 2.2 | 3.5 | pF |
| Noise Figure | NF | $V_{CE}=5.0V$ $R_g=2.0K\Omega$ $\Delta f=200Hz$ | | 0.9 | 10 | dB |

Electrical Characteristic Curve



Marking Instructions



Note:

- COT: Company Code.
- 9014: Product Type.
- A: h_{FE} Classifications Symbol.
- ****: Lot No. Code, code change with Lot No.

| h_{FE} Classifications Symbol | A | B | C | D |
|---------------------------------|--------|---------|---------|----------|
| h_{FE} Range | 60~150 | 100~300 | 200~600 | 400~1000 |

Packaging SPEC

BULK

| Package Type | Units | | | | | Dimension (unit: mm3) | | |
|--------------|-----------|----------------|-----------------|-----------------------|-----------------|-----------------------|-------------|-------------|
| | Units/Bag | Bags/Inner Box | Units/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Bag | Inner Box | Outer Box |
| TO-92 | 1,000 | 10 | 10,000 | 5 | 50,000 | 135×190 | 237×172×102 | 560×245×195 |
| | 1,000 | 10 | 10,000 | 10 | 100,000 | 135×190 | 237×172×102 | 560×245×375 |

AMMO

| Package Type | Units | | | | | Dimension (unit: mm3) | |
|--------------|------------|----------------|----------------|-----------------------|-----------------|-----------------------|-----------------------------|
| | Units/tape | Tape/Inner Box | Rows/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Inner Box | Outer Box |
| TO-92 | 3,000 | 1 | 120 | 10 | 30,000 | 328×230×42 | 480×346×235, 547×407×268 |

Package Outline Dimensions

TO-92

Unit: mm

