

2N5400  
2N5401

SILICON  
PNP TRANSISTORS



TO-92 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5400 and 2N5401 are silicon PNP transistors designed for high voltage amplifier applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

|                                                | SYMBOL         | 2N5400      | 2N5401 | UNITS                |
|------------------------------------------------|----------------|-------------|--------|----------------------|
| Collector-Base Voltage                         | $V_{CBO}$      | 130         | 160    | V                    |
| Collector-Emitter Voltage                      | $V_{CEO}$      | 120         | 150    | V                    |
| Emitter-Base Voltage                           | $V_{EBO}$      | 5.0         |        | V                    |
| Continuous Collector Current                   | $I_C$          | 600         |        | mA                   |
| Power Dissipation                              | $P_D$          | 625         |        | mW                   |
| Power Dissipation ( $T_C=25^{\circ}\text{C}$ ) | $P_D$          | 1.5         |        | W                    |
| Operating and Storage Junction Temperature     | $T_J, T_{stg}$ | -65 to +150 |        | $^{\circ}\text{C}$   |
| Thermal Resistance                             | $\Theta_{JA}$  | 200         |        | $^{\circ}\text{C/W}$ |
| Thermal Resistance                             | $\Theta_{JC}$  | 83.3        |        | $^{\circ}\text{C/W}$ |

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

| SYMBOL        | TEST CONDITIONS                                                                                   | 2N5400 |     | 2N5401 |     | UNITS         |
|---------------|---------------------------------------------------------------------------------------------------|--------|-----|--------|-----|---------------|
|               |                                                                                                   | MIN    | MAX | MIN    | MAX |               |
| $I_{CBO}$     | $V_{CB}=100\text{V}$                                                                              | -      | 100 | -      | -   | nA            |
| $I_{CBO}$     | $V_{CB}=100\text{V}, T_A=100^{\circ}\text{C}$                                                     | -      | 100 | -      | -   | $\mu\text{A}$ |
| $I_{CBO}$     | $V_{CB}=120\text{V}$                                                                              | -      | -   | -      | 50  | nA            |
| $I_{CBO}$     | $V_{CB}=120\text{V}, T_A=100^{\circ}\text{C}$                                                     | -      | -   | -      | 50  | $\mu\text{A}$ |
| $I_{EBO}$     | $V_{EB}=3.0\text{V}$                                                                              | -      | 50  | -      | 50  | nA            |
| $BV_{CBO}$    | $I_C=100\mu\text{A}$                                                                              | 130    | -   | 160    | -   | V             |
| $BV_{CEO}$    | $I_C=1.0\text{mA}$                                                                                | 120    | -   | 150    | -   | V             |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$                                                                               | 5.0    | -   | 5.0    | -   | V             |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$                                                               | -      | 0.2 | -      | 0.2 | V             |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$                                                               | -      | 0.5 | -      | 0.5 | V             |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$                                                               | -      | 1.0 | -      | 1.0 | V             |
| $V_{BE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$                                                               | -      | 1.0 | -      | 1.0 | V             |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$                                                            | 30     | -   | 50     | -   |               |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$                                                             | 40     | 240 | 60     | 240 |               |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=50\text{mA}$                                                             | 40     | -   | 50     | -   |               |
| $f_T$         | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$                                             | 100    | 400 | 100    | 300 | MHz           |
| $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$                                                       | -      | 6.0 | -      | 6.0 | pF            |
| $h_{fe}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$                                            | 30     | 200 | 40     | 200 |               |
| NF            | $V_{CE}=5.0\text{V}, I_C=250\mu\text{A}, R_S=1.0\text{k}\Omega, f=10\text{Hz to } 15.7\text{kHz}$ | -      | 8.0 | -      | 8.0 | dB            |

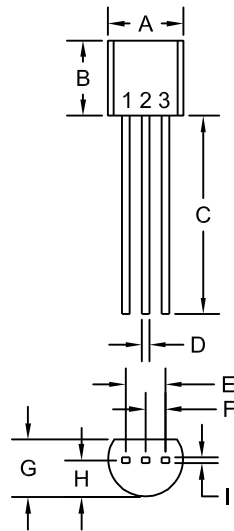
R1 (5-December 2014)

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# TO-92 CASE - MECHANICAL OUTLINE



R1

| SYMBOL  | INCHES |       | MILLIMETERS |      |
|---------|--------|-------|-------------|------|
|         | MIN    | MAX   | MIN         | MAX  |
| A (DIA) | 0.175  | 0.205 | 4.45        | 5.21 |
| B       | 0.170  | 0.210 | 4.32        | 5.33 |
| C       | 0.500  | -     | 12.70       | -    |
| D       | 0.016  | 0.022 | 0.41        | 0.56 |
| E       | 0.100  |       | 2.54        |      |
| F       | 0.050  |       | 1.27        |      |
| G       | 0.125  | 0.165 | 3.18        | 4.19 |
| H       | 0.080  | 0.105 | 2.03        | 2.67 |
| I       | 0.015  |       | 0.38        |      |

TO-92 (REV: R1)

## LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING:  
FULL PART NUMBER

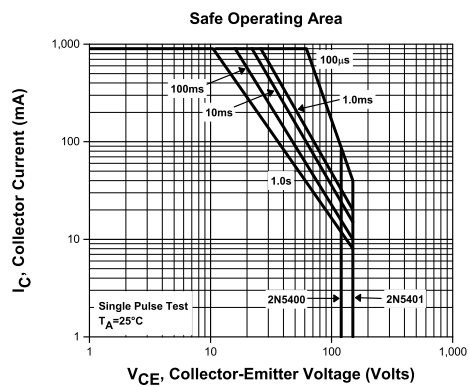
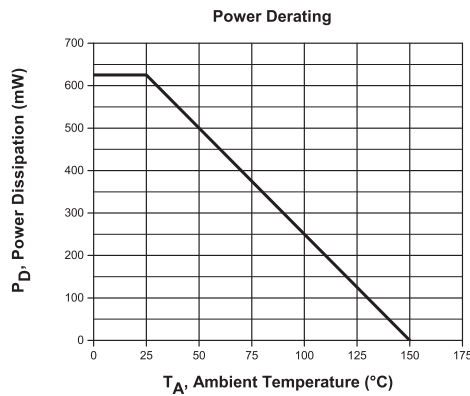
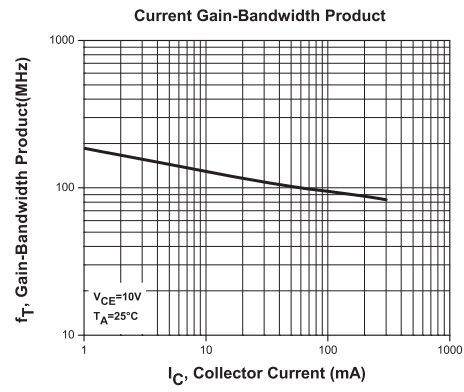
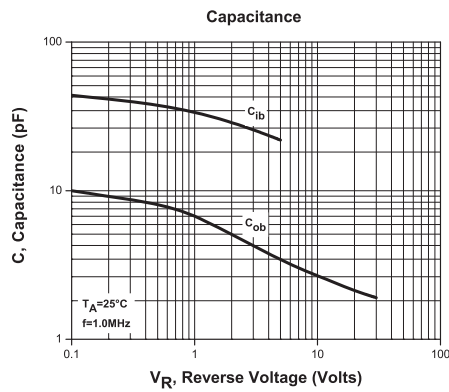
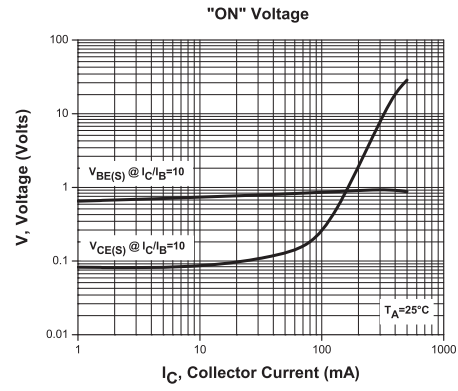
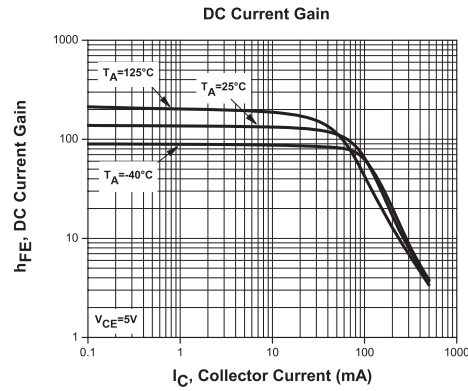
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### TYPICAL ELECTRICAL CHARACTERISTICS



R1 (5-December 2014)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

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- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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