

2N4402  
2N4403

SILICON  
PNP TRANSISTORS



TO-92 CASE

**Central**  
Semiconductor Corp.

www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4402 and 2N4403 are PNP silicon transistors designed for general purpose amplifier and switching applications. NPN complementary types are 2N4400 and 2N4401.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** (T<sub>A</sub>=25°C)

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Power Dissipation  
Operating and Storage Junction Temperature

| SYMBOL                            |             | UNITS |
|-----------------------------------|-------------|-------|
| V <sub>CBO</sub>                  | 40          | V     |
| V <sub>CEO</sub>                  | 40          | V     |
| V <sub>EBO</sub>                  | 5.0         | V     |
| I <sub>C</sub>                    | 600         | mA    |
| P <sub>D</sub>                    | 625         | mW    |
| T <sub>J</sub> , T <sub>stg</sub> | -65 to +150 | °C    |

**ELECTRICAL CHARACTERISTICS:** (T<sub>A</sub>=25°C)

| SYMBOL               | TEST CONDITIONS  | 2N4402 |      | 2N4403 |      | UNITS |
|----------------------|--|--------|------|--------|------|-------|
|                      |  | MIN    | MAX  | MIN    | MAX  |       |
| I <sub>CEV</sub>     | V <sub>CE</sub> =35V, V <sub>EB</sub> =0.4V  | -      | 0.1  | -      | 0.1  | μA    |
| BV <sub>CBO</sub>    | I <sub>C</sub> =0.1mA  | 40     | -    | 40     | -    | V     |
| BV <sub>CEO</sub>    | I <sub>C</sub> =1.0mA  | 40     | -    | 40     | -    | V     |
| BV <sub>EBO</sub>    | I <sub>E</sub> =0.1mA  | 5.0    | -    | 5.0    | -    | V     |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =150mA, I <sub>B</sub> =15mA  | -      | 0.4  | -      | 0.4  | V     |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA  | -      | 0.75 | -      | 0.75 | V     |
| V <sub>BE(SAT)</sub> | I <sub>C</sub> =150mA, I <sub>B</sub> =15mA  | 0.75   | 0.95 | 0.75   | 0.95 | V     |
| V <sub>BE(SAT)</sub> | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA  | -      | 1.3  | -      | 1.3  | V     |
| h <sub>FE</sub>      | V <sub>CE</sub> =1.0V, I <sub>C</sub> =0.1mA   | -      | -    | 30     | -    |       |
| h <sub>FE</sub>      | V <sub>CE</sub> =1.0V, I <sub>C</sub> =1.0mA   | 30     | -    | 60     | -    |       |
| h <sub>FE</sub>      | V <sub>CE</sub> =1.0V, I <sub>C</sub> =10mA  | 50     | -    | 100    | -    |       |
| h <sub>FE</sub>      | V <sub>CE</sub> =2.0V, I <sub>C</sub> =150mA   | 50     | 150  | 100    | 300  |       |
| h <sub>FE</sub>      | V <sub>CE</sub> =2.0V, I <sub>C</sub> =500mA   | 20     | -    | 20     | -    |       |
| h <sub>fe</sub>      | V <sub>CE</sub> =10V, I <sub>C</sub> =1.0mA, f=1.0kHz  | 30     | 250  | 60     | 500  |       |
| f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =20mA, f=100MHz   | 150    | -    | 200    | -    | MHz   |
| C <sub>ob</sub>      | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=140kHz  | -      | 8.5  | -      | 8.5  | pF    |
| C <sub>ib</sub>      | V <sub>BE</sub> =0.5V, I <sub>C</sub> =0, f=140kHz   | -      | 30   | -      | 30   | pF    |
| t <sub>on</sub>      | V <sub>CC</sub> =30V, V <sub>EB(OFF)</sub> =2.0V, I <sub>C</sub> =150mA, I <sub>B1</sub> =15mA | -      | 35   | -      | 35   | ns    |
| t <sub>off</sub>     | V <sub>CC</sub> =30V, I <sub>C</sub> =150mA, I <sub>B1</sub> =I <sub>B2</sub> =15mA            | -      | 255  | -      | 255  | ns    |

R2 (2-December 2014)

2N4402  
2N4403  
  
SILICON  
PNP TRANSISTORS



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

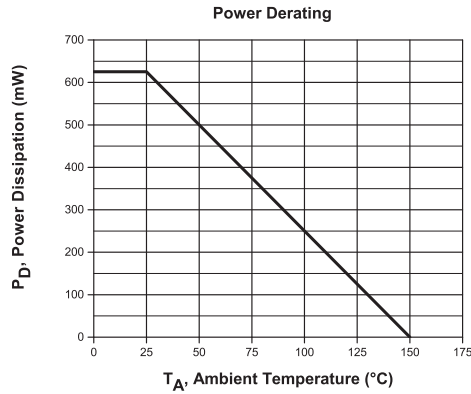
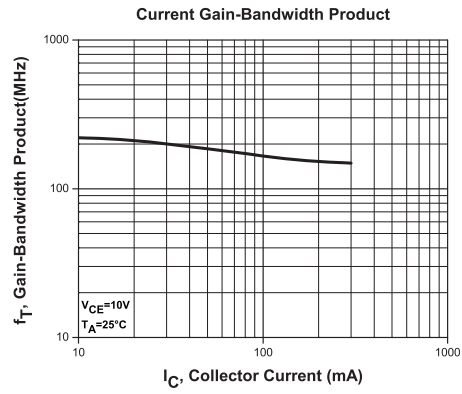
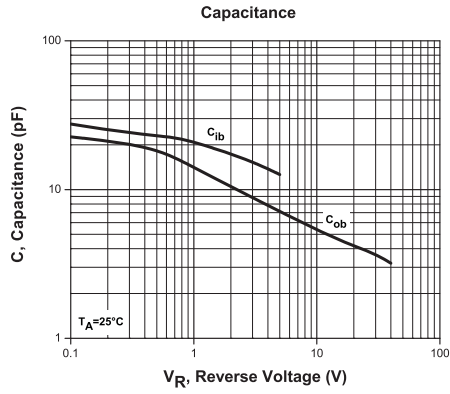
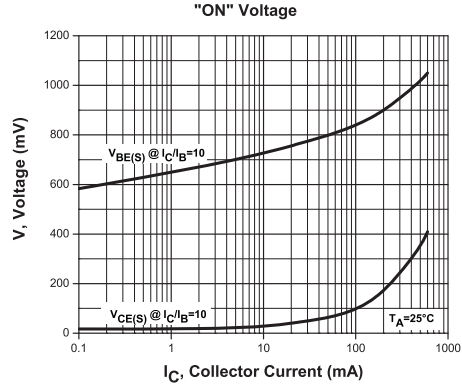
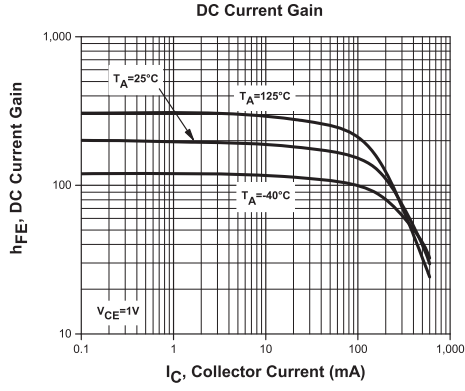
MARKING:  
FULL PART NUMBER

R2 (2-December 2014)

2N4402  
2N4403  
  
SILICON  
PNP TRANSISTORS



TYPICAL ELECTRICAL CHARACTERISTICS



R2 (2-December 2014)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



---

### 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

---

### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- 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

---

### 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).

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)