

2N4424

SILICON  
NPN TRANSISTOR



TO-92 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4424 is a silicon NPN epitaxial planar transistor designed for general purpose amplifier applications.

**MARKING: FULL PART NUMBER**

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

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

**SYMBOL**

$V_{CBO}$  60  
 $V_{CEO}$  40  
 $V_{EBO}$  5.0  
 $I_C$  500  
 $P_D$  625  
 $T_J, T_{stg}$  -65 to +150  
 $\Theta_{JA}$  200

**UNITS**

V  
V  
V  
mA  
mW  
 $^\circ\text{C}$   
 $^\circ\text{C/W}$

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

| SYMBOL        | TEST CONDITIONS                                         | MIN | TYP  | MAX  | UNITS            |
|---------------|---------------------------------------------------------|-----|------|------|------------------|
| $I_{CBO}$     | $V_{CB}=40\text{V}$                                     |     |      | 30   | nA               |
| $I_{CBO}$     | $V_{CB}=40\text{V}, T_A=100^\circ\text{C}$              |     |      | 10   | $\mu\text{A}$    |
| $I_{CES}$     | $V_{CE}=40\text{V}$                                     |     |      | 30   | nA               |
| $I_{EBO}$     | $V_{EB}=5.0\text{V}$                                    |     |      | 100  | nA               |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$                                     | 60  |      |      | V                |
| $BV_{CEO}$    | $I_C=10\text{mA}$                                       | 40  |      |      | V                |
| $BV_{EBO}$    | $I_E=0.1\mu\text{A}$                                    | 5.0 |      |      | V                |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=3.0\text{mA}$                     |     |      | 0.30 | V                |
| $V_{BE(SAT)}$ | $I_C=50\text{mA}, I_B=3.0\text{mA}$                     |     |      | 0.85 | V                |
| $h_{FE}$      | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}$                  | 180 |      | 540  |                  |
| $h_{fe}$      | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}, f=1.0\text{kHz}$ | 180 |      |      |                  |
| $h_{fe}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$  |     | 180  |      |                  |
| $h_{ie}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$  |     | 5100 |      | $\Omega$         |
| $h_{oe}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$  |     | 14   |      | $\mu\text{S}$    |
| $h_{re}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$  |     | 0.27 |      | $\times 10^{-3}$ |

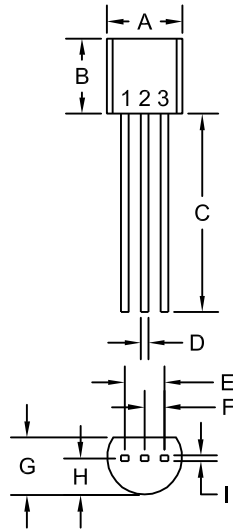
R1 (26-July 2013)

2N4424

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TO-92 CASE - MECHANICAL OUTLINE



R1

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| 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) Collector
- 3) Base

MARKING:

FULL PART NUMBER

R1 (26-July 2013)

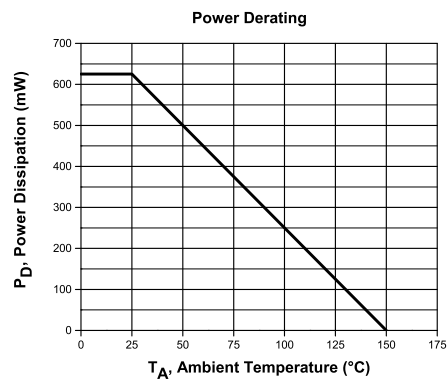
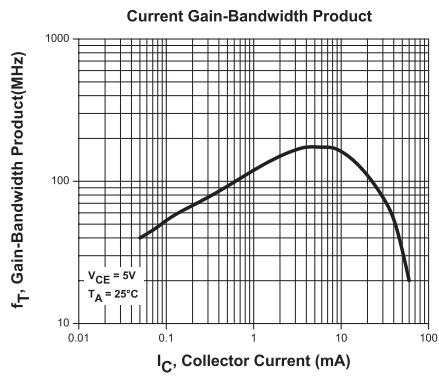
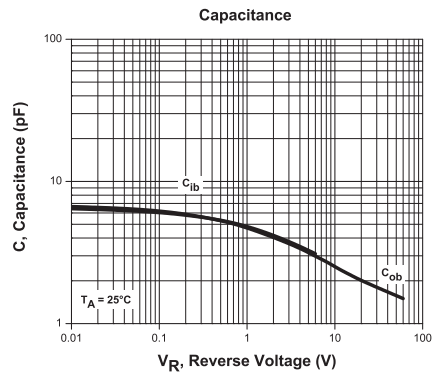
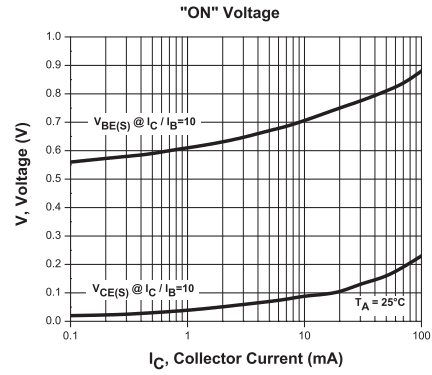
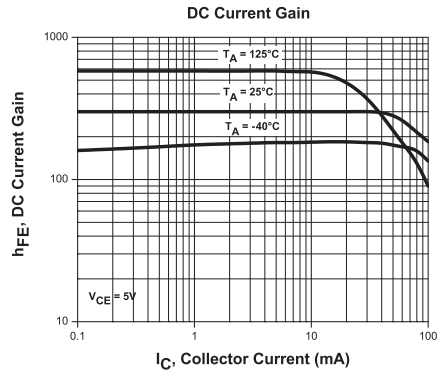
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**TYPICAL ELECTRICAL CHARACTERISTICS**



R1 (26-July 2013)

## 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.

- 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

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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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