

2N3391A  
2N3392  
2N3393

**SILICON  
NPN TRANSISTORS**



**TO-92 CASE**



[www.centralemi.com](http://www.centralemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N3391A series are silicon NPN transistors 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**

$V_{CBO}$  25  
 $V_{CEO}$  25  
 $V_{EBO}$  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 | MAX | UNITS |
|------------|------------------------------------------------------------------------------------------------|-----|-----|-------|
| $I_{CBO}$  | $V_{CB}=18\text{V}$                                                                            |     | 100 | nA    |
| $I_{EBO}$  | $V_{EB}=5.0\text{V}$                                                                           |     | 100 | nA    |
| $BV_{CBO}$ | $I_C=10\mu\text{A}$                                                                            | 25  |     | V     |
| $BV_{CEO}$ | $I_C=10\text{mA}$                                                                              | 25  |     | V     |
| $BV_{EBO}$ | $I_E=10\mu\text{A}$                                                                            | 5.0 |     | V     |
| $C_{ob}$   | $V_{CB}=10\text{V}, f=1.0\text{MHz}$                                                           | 2.0 | 10  | pF    |
| NF         | $V_{CE}=4.5\text{V}, I_C=100\mu\text{A}, R_G=500\Omega,$<br>$BW=15.7\text{kHz}$ (2N3391A only) |     | 5.0 | dB    |

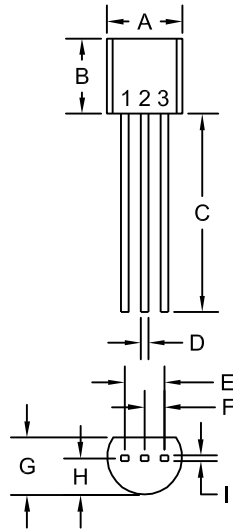
|          |                                                         | <u>2N3391A</u> |     | <u>2N3392</u> |     | <u>2N3393</u> |     |
|----------|---------------------------------------------------------|----------------|-----|---------------|-----|---------------|-----|
|          |                                                         | MIN            | MAX | MIN           | MAX | MIN           | MAX |
| $h_{FE}$ | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}$                  | 250            | 500 | 150           | 300 | 90            | 180 |
| $h_{fe}$ | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}, f=1.0\text{kHz}$ | 250            | 800 | 150           | 500 | 90            | 400 |

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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

R0 (29-January 2014)