

2N2270

NPN SILICON TRANSISTOR



TO-39 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N2270 is a NPN silicon transistor, mounted in a hermetically sealed package, designed for general purpose amplifier applications.

**MARKING: FULL PART NUMBER**

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

|                                                | SYMBOL         |             | UNITS                |
|------------------------------------------------|----------------|-------------|----------------------|
| Collector-Base Voltage                         | $V_{CBO}$      | 60          | V                    |
| Collector-Emitter Voltage                      | $V_{CER}$      | 60          | V                    |
| Collector-Emitter Voltage                      | $V_{CEO}$      | 45          | V                    |
| Emitter-Base Voltage                           | $V_{EBO}$      | 7.0         | V                    |
| Continuous Collector Current                   | $I_C$          | 1.0         | A                    |
| Power Dissipation                              | $P_D$          | 1.0         | W                    |
| Power Dissipation ( $T_C=25^{\circ}\text{C}$ ) | $P_D$          | 5.0         | W                    |
| Operating and Storage Junction Temperature     | $T_J, T_{stg}$ | -65 to +200 | $^{\circ}\text{C}$   |
| Thermal Resistance                             | $\Theta_{JA}$  | 175         | $^{\circ}\text{C/W}$ |
| Thermal Resistance                             | $\Theta_{JC}$  | 35          | $^{\circ}\text{C/W}$ |

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

| SYMBOL        | TEST CONDITIONS                                                                                     | MIN | MAX | UNITS         |
|---------------|-----------------------------------------------------------------------------------------------------|-----|-----|---------------|
| $I_{CBO}$     | $V_{CB}=60\text{V}$                                                                                 |     | 50  | nA            |
| $I_{CBO}$     | $V_{CB}=60\text{V}, (T_C=150^{\circ}\text{C})$                                                      |     | 50  | $\mu\text{A}$ |
| $I_{EBO}$     | $V_{EB}=5.0\text{V}$                                                                                |     | 100 | nA            |
| $BV_{CBO}$    | $I_C=100\mu\text{A}$                                                                                | 60  |     | V             |
| $BV_{CER}$    | $I_C=100\text{mA}, R_{BE}=10\Omega$                                                                 | 60  |     | V             |
| $BV_{CEO}$    | $I_C=100\text{mA}$                                                                                  | 45  |     | V             |
| $BV_{EBO}$    | $I_E=100\mu\text{A}$                                                                                | 7.0 |     | V             |
| $V_{CE(SAT)}$ | $I_C=150\text{mA}, I_B=15\text{mA}$                                                                 |     | 0.9 | V             |
| $V_{BE(SAT)}$ | $I_C=150\text{mA}, I_B=15\text{mA}$                                                                 |     | 1.2 | V             |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}$                                                               | 30  |     |               |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=150\text{mA}$                                                               | 50  | 200 |               |
| $h_{fe}$      | $V_{CE}=10\text{V}, I_C=5.0\text{mA}, f=1.0\text{kHz}$                                              | 50  | 275 |               |
| $f_T$         | $V_{CE}=10\text{V}, I_C=50\text{mA}$                                                                | 100 |     | MHz           |
| $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0$                                                                          |     | 15  | pF            |
| $C_{ib}$      | $V_{BE}=0.5\text{V}, I_C=0$                                                                         |     | 80  | pF            |
| NF            | $V_{CE}=10\text{V}, I_C=0.3\text{mA}, f=1.0\text{kHz},$<br>$R_G=1.0\text{k}\Omega, BW=1.0\text{Hz}$ |     | 10  | dB            |

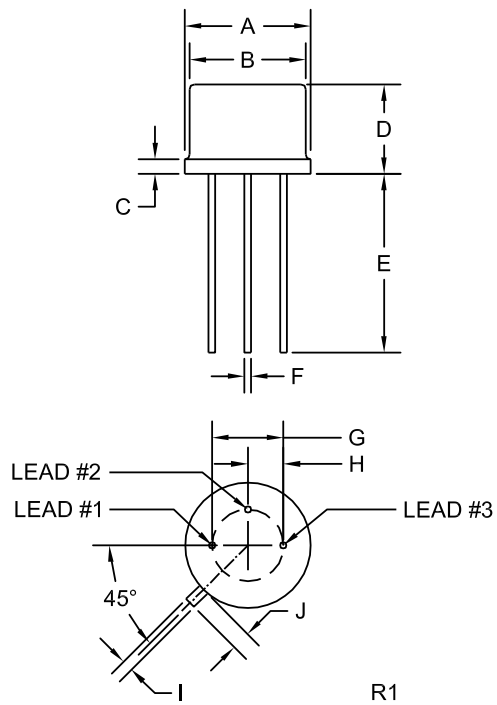
R0 (17-August 2012)

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TO-39 CASE - MECHANICAL OUTLINE



| SYMBOL  | DIMENSIONS |       |             |      |
|---------|------------|-------|-------------|------|
|         | INCHES     |       | MILLIMETERS |      |
|         | MIN        | MAX   | MIN         | MAX  |
| A (DIA) | 0.335      | 0.370 | 8.51        | 9.40 |
| B (DIA) | 0.315      | 0.335 | 8.00        | 8.51 |
| C       | -          | 0.040 | -           | 1.02 |
| D       | 0.240      | 0.260 | 6.10        | 6.60 |
| E       | 0.500      | -     | 12.70       | -    |
| F (DIA) | 0.016      | 0.021 | 0.41        | 0.53 |
| G (DIA) | 0.200      |       | 5.08        |      |
| H       | 0.100      |       | 2.54        |      |
| I       | 0.028      | 0.034 | 0.71        | 0.86 |
| J       | 0.029      | 0.045 | 0.74        | 1.14 |

TO-39 (REV: R1)

LEAD CODE:

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

MARKING: FULL PART NUMBER

R0 (17-August 2012)

## 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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