

2N2857  
2N3839

**NPN SILICON RF TRANSISTORS**



**TO-72 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N2857 and 2N3839 are silicon NPN RF transistors designed for VHF/UHF amplifier, oscillator and converter applications.

**MARKING: FULL PART NUMBER**

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

|  | SYMBOL         |             | UNITS            |
|--|----------------|-------------|------------------|
| Collector-Base Voltage                       | $V_{CBO}$      | 30          | V                |
| Collector-Emitter Voltage                    | $V_{CEO}$      | 15          | V                |
| Emitter-Base Voltage                         | $V_{EBO}$      | 2.5         | V                |
| Continuous Collector Current                 | $I_C$          | 40          | mA               |
| Power Dissipation                            | $P_D$          | 200         | mW               |
| Power Dissipation ( $T_C=25^\circ\text{C}$ ) | $P_D$          | 300         | mW               |
| Operating and Storage Junction Temperature   | $T_J, T_{stg}$ | -65 to +200 | $^\circ\text{C}$ |

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

| SYMBOL     | TEST CONDITIONS   | 2N2857 |     | 2N3839 |     | UNITS         |
|------------|---|--------|-----|--------|-----|---------------|
|            |   | MIN    | MAX | MIN    | MAX |               |
| $I_{CBO}$  | $V_{CB}=15\text{V}$   | -      | 10  | -      | 10  | nA            |
| $I_{CBO}$  | $V_{CB}=15\text{V}, T_A=150^\circ\text{C}$                            | -      | 1.0 | -      | 1.0 | $\mu\text{A}$ |
| $BV_{CBO}$ | $I_C=1.0\mu\text{A}$  | 30     | -   | 30     | -   | V             |
| $BV_{CEO}$ | $I_C=3.0\text{mA}$  | 15     | -   | 15     | -   | V             |
| $BV_{EBO}$ | $I_E=10\mu\text{A}$   | 2.5    | -   | 2.5    | -   | V             |
| $h_{FE}$   | $V_{CE}=1.0\text{V}, I_C=3.0\text{mA}$                                | 30     | 150 | 30     | 150 |               |
| $f_T$      | $V_{CE}=6.0\text{V}, I_C=5.0\text{mA}, f=100\text{MHz}$               | 1.0    | 1.9 | 1.0    | 2.0 | GHz           |
| $C_{ob}$   | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz to } 1.0\text{MHz}$         | -      | 1.0 | -      | 1.0 | pF            |
| $P_o$      | $V_{CB}=10\text{V}, I_C=12\text{mA}, f=500\text{MHz}$                 | 30     | -   | 30     | -   | mW            |
| $G_{pe}$   | $V_{CE}=6.0\text{V}, I_C=1.5\text{mA}, f=450\text{MHz}, R_S=50\Omega$ | 12.5   | 19  | 12.5   | 19  | dB            |
| NF         | $V_{CE}=6.0\text{V}, I_C=1.5\text{mA}, f=450\text{MHz}, R_S=50\Omega$ | -      | 4.5 | -      | 3.9 | dB            |
| $r_b'C_c$  | $V_{CB}=6.0\text{V}, I_C=2.0\text{mA}, f=31.9\text{MHz}$              | 4.0    | 15  | 1.0    | 15  | ps            |

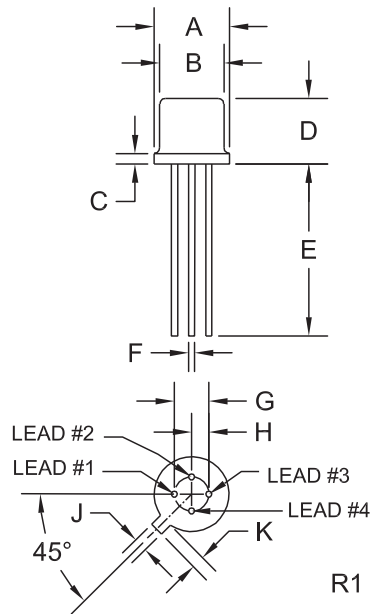
R1 (31-January 2013)

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NPN SILICON RF TRANSISTORS



TO-72 CASE - MECHANICAL OUTLINE



| SYMBOL  | INCHES |       | MILLIMETERS |      |
|---------|--------|-------|-------------|------|
|         | MIN    | MAX   | MIN         | MAX  |
| A (DIA) | 0.209  | 0.230 | 5.31        | 5.84 |
| B (DIA) | 0.175  | 0.195 | 4.45        | 4.95 |
| C       | -      | 0.030 | -           | 0.76 |
| D       | 0.170  | 0.210 | 4.32        | 5.33 |
| E       | 0.500  | -     | 12.70       | -    |
| F (DIA) | 0.016  | 0.019 | 0.41        | 0.48 |
| G (DIA) | 0.100  |       | 2.54        |      |
| H       | 0.050  |       | 1.27        |      |
| J       | 0.036  | 0.046 | 0.91        | 1.17 |
| K       | 0.028  | 0.048 | 0.71        | 1.22 |

TO-72 (REV: R1)

LEAD CODE:

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

MARKING:

FULL PART NUMBER

R1 (31-January 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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