

2N2857
2N3839

NPN SILICON RF TRANSISTORS



TO-72 CASE



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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)

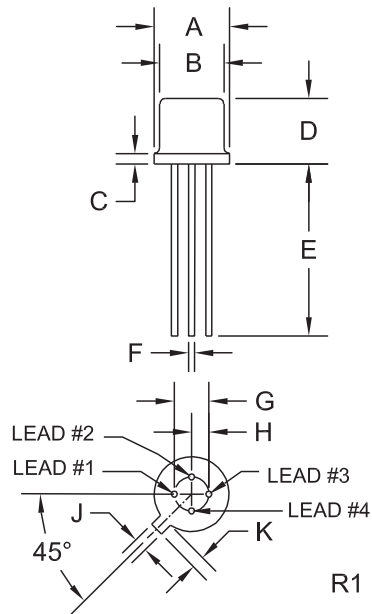
| SYMBOL | TEST CONDITIONS | 2N2857 | | 2N3839 | | UNITS |
|------------|---|--------|-----|--------|-----|---------------|
| | | MIN | MAX | MIN | MAX | |
| I_{CBO} | $V_{CB}=15\text{V}$ | - | 10 | - | 10 | nA |
| I_{CBO} | $V_{CB}=15\text{V}, T_A=150^\circ\text{C}$ | - | 1.0 | - | 1.0 | μA |
| BV_{CBO} | $I_C=1.0\mu\text{A}$ | 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 |

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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



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 (2nd 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

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

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