**2N5769**
**PN2369A**

**SILICON**
**NPN TRANSISTORS**


**TO-92 CASE**

Central Semiconductor Corp.

www.centralsemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5769 and PN2369A are epitaxial planar NPN Silicon Transistors designed for ultra high speed saturated switching applications.

**MARKING: FULL PART NUMBER**

| **MAXIMUM RATINGS:** ($T_A$=25°C) | **SYMBOL** | | **UNITS** |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 40 | V |
| Collector-Emitter Voltage | $V_{CES}$ | 40 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 15 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 4.5 | V |
| Continuous Collector Current | $I_C$ | 200 | mA |
| Peak Collector Current | $I_{CM}$ | 500 | mA |
| Power Dissipation | $P_D$ | 350 | mW |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | -65 to +150 | °C |

**ELECTRICAL CHARACTERISTICS:** ($T_A$=25°C unless otherwise noted)

| **SYMBOL** | **TEST CONDITIONS** | **MIN** | **MAX** | **UNITS** |
|---|---|---|---|---|
| $I_{CBO}$ | $V_{CB}$=20V | | 400 | nA |
| $I_{CBO}$ | $V_{CB}$=20V, $T_A$=125°C | | 30 | µA |
| $I_{CES}$ | $V_{CE}$=20V (2N5769) | | 400 | nA |
| $I_{EBO}$ | $V_{EB}$=4.5V (2N5769) | | 1.0 | µA |
| $BV_{CBO}$ | $I_C$=10µA | 40 | | V |
| $BV_{CES}$ | $I_C$=10µA | 40 | | V |
| $BV_{CEO}$ | $I_C$=10mA | 15 | | V |
| $BV_{EBO}$ | $I_E$=10µA | 4.5 | | V |
| $V_{CE(SAT)}$ | $I_C$=10mA, $I_B$=1.0mA | | 200 | mV |
| $V_{CE(SAT)}$ | $I_C$=30mA, $I_B$=3.0mA | | 250 | mV |
| $V_{CE(SAT)}$ | $I_C$=100mA, $I_B$=10mA | | 500 | mV |
| $V_{BE(SAT)}$ | $I_C$=10mA, $I_B$=1.0mA | 700 | 850 | mV |
| $V_{BE(SAT)}$ | $I_C$=30mA, $I_B$=3.0mA | | 1.15 | V |
| $V_{BE(SAT)}$ | $I_C$=100mA, $I_B$=10mA | | 1.6 | V |
| $h_{FE}$ | $V_{CE}$=0.35V, $I_C$=10mA (2N5769) | 40 | 120 | |
| $h_{FE}$ | $V_{CE}$=1.0V, $I_C$=10mA (PN2369A) | 40 | 120 | |
| $h_{FE}$ | $V_{CE}$=0.4V, $I_C$=30mA | 30 | | |
| $h_{FE}$ | $V_{CE}$=1.0V, $I_C$=100mA | 20 | | |

R2 (7-November 2019)

**2N5769**
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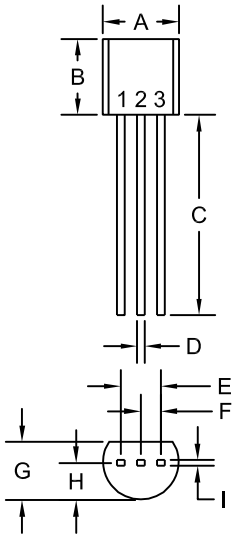
**ELECTRICAL CHARACTERISTICS - Continued:** ($T_A$=25°C unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---|---|---|---|---|
| $f_T$ | $V_{CE}$=10V, $I_C$=10mA, f=100MHz | 500 | | MHz |
| $C_{ob}$ | $V_{CB}$=5.0V, $I_E$=0, f=140kHz | | 4.0 | pF |
| $t_{on}$ | $V_{CC}$=3.0V, $I_C$=10mA, $I_{B1}$=3.0mA, $I_{B2}$=1.5mA | | 12 | ns |
| $t_{off}$ | $V_{CC}$=3.0V, $I_C$=10mA, $I_{B1}$=3.0mA, $I_{B2}$=1.5mA | | 18 | ns |
| $t_s$ | $V_{CC}$=10V, $I_C$=10mA, $I_{B1}$=$I_{B2}$=10mA | | 13 | ns |

## TO-92 CASE - MECHANICAL OUTLINE




R1

| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | 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) Base
3) Collector

**MARKING: FULL PART NUMBER**

## 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.centralsemi.com

**Worldwide Field Representatives:**
www.centralsemi.com/wwreps

**Worldwide Distributors:**
www.centralsemi.com/wwdistributors