

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors
www.centrasemi.com

2N5209
2N5210

NPN SILICON TRANSISTOR

TO-92 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5209 and 2N5210 are silicon NPN Transistors, manufactured by the epitaxial planar process, designed for applications requiring high gain and low noise.

MAXIMUM RATINGS (T_A=25°C)

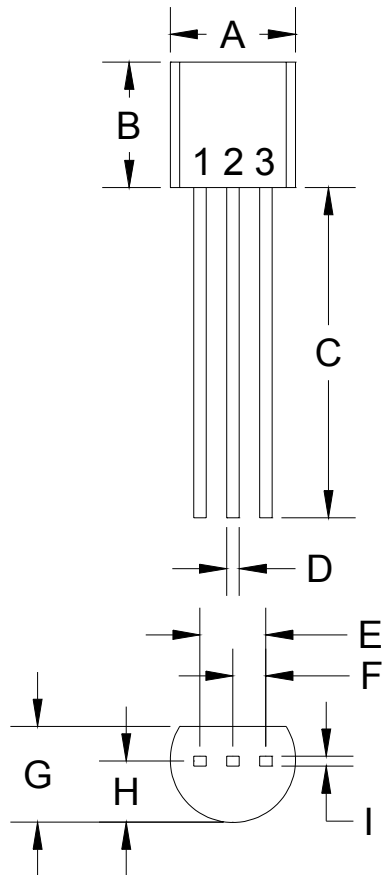
| | SYMBOL | | UNITS |
|---|-----------------------------------|-------------|-------|
| Collector-Emitter Voltage | V _{CEO} | 50 | V |
| Collector-Base Voltage | V _{CBO} | 50 | V |
| Emitter-Base Voltage | V _{EBO} | 4.5 | V |
| Collector Current | I _C | 50 | mA |
| Power Dissipation | P _D | 350 | mW |
| Power Dissipation (T _C =25°C) | P _D | 1.0 | W |
| Operating and Storage Junction Temperature | T _J , T _{stg} | -65 to +150 | °C |
| Thermal Resistance | θ _{JA} | 357 | °C/W |
| Thermal Resistance | θ _{JC} | 125 | °C/W |

ELECTRICAL CHARACTERISTICS (T_A=25°C)

| SYMBOL | TEST CONDITIONS | 2N5209 | | 2N5210 | | UNITS |
|----------------------|---|--------|------|--------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| I _{CBO} | V _{CB} =35V | | 50 | | 50 | nA |
| I _{EBO} | V _{EB} =3.0V | | 50 | | 50 | nA |
| BV _{CBO} | I _C =100μA | 50 | | 50 | | V |
| BV _{CEO} | I _C =1.0mA | 50 | | 50 | | V |
| V _{CE(SAT)} | I _C =10mA, I _B =1.0mA | | 0.70 | | 0.70 | V |
| V _{BE(ON)} | V _{CE} =5.0V, I _C =1.0mA | | 0.85 | | 0.85 | V |
| h _{FE} | V _{CE} =5.0V, I _C =100μA | 100 | 300 | 200 | 600 | |
| h _{FE} | V _{CE} =5.0V, I _C =1.0mA | 150 | | 250 | | |
| h _{FE} | V _{CE} =5.0V, I _C =10mA | 150 | | 250 | | |
| f _T | V _{CE} =5.0V, I _C =500μA, f=20MHz | 30 | | 30 | | MHz |
| C _{cb} | V _{CB} =5.0V, I _E =0, f=100kHz | | 4.0 | | 4.0 | pF |
| h _{fe} | V _{CE} =5.0V, I _C =1.0mA, f=1.0kHz | 150 | 600 | 250 | 900 | |
| NF | V _{CE} =5.0V, I _C =20μA, R _S =22kΩ, f=10Hz to 15.7kHz | | 3.0 | | 2.0 | dB |
| NF | V _{CE} =5.0V, I _C =20μA, R _S =10kΩ, f=1.0kHz | | 4.0 | | 3.0 | dB |

(SEE REVERSE SIDE)

TO-92 PACKAGE - MECHANICAL OUTLINE



| 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) Base
3) Collector

R1

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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

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