

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5086  
2N5087

PNP SILICON TRANSISTORS

JEDEC TO-92 CASE (EBC)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5086, 2N5087 series are molded epoxy silicon PNP signal transistors designed for low level, low noise amplifier applications.

## MAXIMUM RATINGS (T<sub>A</sub>=25°C)

|                                            | SYMBOL                            |             | UNIT  |
|--------------------------------------------|-----------------------------------|-------------|-------|
| Collector-Base Voltage                     | V <sub>CB0</sub>                  | 50          | V     |
| Collector-Emitter Voltage                  | V <sub>CE0</sub>                  | 50          | V     |
| Emitter-Base Voltage                       | V <sub>EB0</sub>                  | 3.0         | V     |
| Collector Current                          | I <sub>C</sub>                    | 50          | mA    |
| Power Dissipation                          | P <sub>D</sub>                    | 625         | mW    |
| Power Dissipation                          | P <sub>D</sub>                    | 1.5         | W     |
| Operating and Storage Junction Temperature | T <sub>J</sub> , T <sub>stg</sub> | -65 TO +150 | °C    |
| Thermal Resistance                         | θ <sub>JA</sub>                   | 0.2         | °C/mW |
| Thermal Resistance                         | θ <sub>JC</sub>                   | 83.3        | °C/W  |

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

| SYMBOL               | TEST CONDITIONS                                                                         | 2N5086 |      | 2N5087 |      | UNIT |
|----------------------|-----------------------------------------------------------------------------------------|--------|------|--------|------|------|
|                      |                                                                                         | MIN    | MAX  | MIN    | MAX  |      |
| I <sub>CBO</sub>     | V <sub>CB</sub> =10V                                                                    |        | 10   |        | 10   | nA   |
| I <sub>CBO</sub>     | V <sub>CB</sub> =35V                                                                    |        | 50   |        | 50   | nA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =3.0V                                                                   |        | 50   |        | 50   | nA   |
| BV <sub>CB0</sub>    | I <sub>C</sub> =100μA                                                                   | 50     |      | 50     |      | V    |
| BV <sub>CE0</sub>    | I <sub>C</sub> =1.0mA                                                                   | 50     |      | 50     |      | V    |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA                                             |        | 0.3  |        | 0.3  | V    |
| V <sub>BE(ON)</sub>  | V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA                                            |        | 0.85 |        | 0.85 | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =5.0V, I <sub>C</sub> =100μA                                            | 150    | 500  | 250    | 800  |      |
| h <sub>FE</sub>      | V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA                                            | 150    |      | 250    |      |      |
| h <sub>FE</sub>      | V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA                                             | 150    |      | 250    |      |      |
| h <sub>fe</sub>      | V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA, f=1.0kHz                                  | 150    | 600  | 250    | 900  |      |
| f <sub>T</sub>       | V <sub>CE</sub> =5.0V, I <sub>C</sub> =500μA, f=20MHz                                   | 40     |      | 40     |      | MHz  |
| C <sub>ob</sub>      | V <sub>CB</sub> =5.0V, I <sub>E</sub> =0, f=100kHz                                      |        | 4.0  |        | 4.0  | pF   |
| NF                   | V <sub>CE</sub> =5.0V, I <sub>C</sub> =20μA, R <sub>S</sub> =10kΩ,<br>f=10Hz TO 15.7kHz |        | 3.0  |        | 2.0  | dB   |
| NF                   | V <sub>CE</sub> =5.0V, I <sub>C</sub> =100μA, R <sub>S</sub> =3.0kΩ,<br>f=1.0kHz        |        | 3.0  |        | 2.0  | dB   |

## 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

#### Corporate Headquarters & Customer Support Team

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