

# 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 ( $T_A=25^{\circ}\text{C}$ )

|                                            | SYMBOL         |             | UNIT                         |
|--------------------------------------------|----------------|-------------|------------------------------|
| Collector-Base Voltage                     | $V_{CB0}$      | 50          | V                            |
| Collector-Emitter Voltage                  | $V_{CE0}$      | 50          | V                            |
| Emitter-Base Voltage                       | $V_{EB0}$      | 3.0         | V                            |
| Collector Current                          | $I_C$          | 50          | mA                           |
| Power Dissipation                          | $P_D$          | 625         | mW                           |
| Power Dissipation                          | $P_D$          | 1.5         | W                            |
| Operating and Storage Junction Temperature | $T_J, T_{stg}$ | -65 TO +150 | $^{\circ}\text{C}$           |
| Thermal Resistance                         | $\theta_{JA}$  | 0.2         | $^{\circ}\text{C}/\text{mW}$ |
| Thermal Resistance                         | $\theta_{JC}$  | 83.3        | $^{\circ}\text{C}/\text{W}$  |

## ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

| SYMBOL               | TEST CONDITIONS                                                                                 | 2N5086 |      | 2N5087 |      | UNIT |
|----------------------|-------------------------------------------------------------------------------------------------|--------|------|--------|------|------|
|                      |                                                                                                 | MIN    | MAX  | MIN    | MAX  |      |
| $I_{CB0}$            | $V_{CB}=10\text{V}$                                                                             |        | 10   |        | 10   | nA   |
| $I_{CB0}$            | $V_{CB}=35\text{V}$                                                                             |        | 50   |        | 50   | nA   |
| $I_{EB0}$            | $V_{EB}=3.0\text{V}$                                                                            |        | 50   |        | 50   | nA   |
| $BV_{CB0}$           | $I_C=100\mu\text{A}$                                                                            | 50     |      | 50     |      | V    |
| $BV_{CE0}$           | $I_C=1.0\text{mA}$                                                                              | 50     |      | 50     |      | V    |
| $V_{CE}(\text{SAT})$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$                                                             |        | 0.3  |        | 0.3  | V    |
| $V_{BE}(\text{ON})$  | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$                                                          |        | 0.85 |        | 0.85 | V    |
| $h_{FE}$             | $V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$                                                        | 150    | 500  | 250    | 800  |      |
| $h_{FE}$             | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$                                                          | 150    |      | 250    |      |      |
| $h_{FE}$             | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$                                                           | 150    |      | 250    |      |      |
| $h_{fe}$             | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$                                         | 150    | 600  | 250    | 900  |      |
| $f_T$                | $V_{CE}=5.0\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$                                        | 40     |      | 40     |      | MHz  |
| $C_{ob}$             | $V_{CB}=5.0\text{V}, I_E=0, f=100\text{kHz}$                                                    |        | 4.0  |        | 4.0  | pF   |
| NF                   | $V_{CE}=5.0\text{V}, I_C=20\mu\text{A}, R_S=10\text{k}\Omega, f=10\text{Hz TO } 15.7\text{kHz}$ |        | 3.0  |        | 2.0  | dB   |
| NF                   | $V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, R_S=3.0\text{k}\Omega, f=1.0\text{kHz}$                |        | 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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