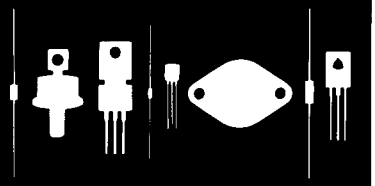
Central
Semiconductor Corp.
145 Adams Avenue
Hauppauge, New York 11788



# 2N5088
# 2N5089

NPN SILICON TRANSISTORS

JEDEC TO-92 CASE (EBC)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5088, 2N5089 series are Molded Epoxy Silicon NPN Signal Transistors designed for low-level, low noise amplifier applications.

## MAXIMUM RATINGS ($T_A$=25°C)

| | SYMBOL | 2N5088 | 2N5089 | UNIT |
|---|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 35 | 30 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 30 | 25 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 4.5 | 4.5 | V |
| Collector Current | $I_C$ | 50 | 50 | mA |
| Power Dissipation | $P_D$ | 625 | 625 | mW |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | -65 TO +150 | | °C |
| Thermal Resistance | $\theta_{JA}$ | 0.2 | 0.2 | °C/mW |

## ELECTRICAL CHARACTERISTICS ($T_A$=25°C)

| | | 2N5088 | | 2N5089 | | |
|---|---|---|---|---|---|---|
| SYMBOL | TEST CONDITIONS | MIN | MAX | MIN | MAX | UNIT |
| $I_{CBO}$ | $V_{CB}$=20V | | 50 | | --- | nA |
| $I_{CBO}$ | $V_{CB}$=15V | | --- | | 50 | nA |
| $I_{EBO}$ | $V_{EB}$=3.0V | | 50 | | 50 | nA |
| $I_{EBO}$ | $V_{EB}$=4.5V | | 100 | | 100 | nA |
| $BV_{CBO}$ | $I_C$=100μA | 35 | | 30 | | V |
| $BV_{CEO}$ | $I_C$=1.0mA | 30 | | 25 | | V |
| $V_{CE(SAT)}$ | $I_C$=10mA, $I_B$=1.0mA | | 0.5 | | 0.5 | V |
| $V_{BE(ON)}$ | $V_{CE}$=5.0V, $I_C$=10mA | | 0.8 | | 0.8 | V |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=100μA | 300 | 900 | 400 | 1200 | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=1.0mA | 350 | | 450 | | |
| $h_{FE}$ | $V_{CE}$=5.0V, $I_C$=10mA | 300 | | 400 | | |
| $h_{fe}$ | $V_{CE}$=5.0V, $I_C$=1.0mA, f=1.0kHz | 350 | 1400 | 450 | 1800 | |
| $f_T$ | $V_{CE}$=5.0V, $I_C$=500μA, f=20MHz | 50 | | 50 | | MHz |
| $C_{cb}$ | $V_{CB}$=5.0V, $I_E$=0, f=100kHz | | 4.0 | | 4.0 | pF |
| $C_{eb}$ | $V_{BE}$=0.5V, $I_C$=0, f=100kHz | | 1.0 | | 1.0 | pF |
| NF | $V_{CE}$=5.0V, $I_C$=100μA, $R_S$=10kΩ f=10Hz TO 15.7kHz | | 3.0 | | 2.0 | dB |

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