

2N5088
2N5089

SILICON
NPN TRANSISTORS



TO-92 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5088 and 2N5089 are silicon NPN transistors designed for low level, low noise amplifier applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_A=25^{\circ}\text{C}$)

| |
|--|
| Collector-Base Voltage |
| Collector-Emitter Voltage |
| Emitter-Base Voltage |
| Continuous Collector Current |
| Power Dissipation |
| Operating and Storage Junction Temperature |
| Thermal Resistance |
| Thermal Resistance |

| SYMBOL | 2N5088 | 2N5089 | UNITS |
|----------------|-------------|--------|-----------------------------|
| V_{CB0} | 35 | 30 | V |
| V_{CE0} | 30 | 25 | V |
| V_{EBO} | 4.5 | | V |
| I_C | 50 | | mA |
| P_D | 625 | | mW |
| T_J, T_{stg} | -65 to +150 | | $^{\circ}\text{C}$ |
| Θ_{JA} | 200 | | $^{\circ}\text{C}/\text{W}$ |
| Θ_{JC} | 83.3 | | $^{\circ}\text{C}/\text{W}$ |

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

| SYMBOL | TEST CONDITIONS | 2N5088 | | 2N5089 | | UNITS |
|---------------|--|--------|------|--------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| I_{CBO} | $V_{CB}=20\text{V}$ | - | 50 | - | - | nA |
| I_{CBO} | $V_{CB}=15\text{V}$ | - | - | - | 50 | nA |
| I_{EBO} | $V_{EB}=3.0\text{V}$ | - | 50 | - | 50 | nA |
| I_{EBO} | $V_{EB}=4.5\text{V}$ | - | 100 | - | 100 | nA |
| BV_{CB0} | $I_C=100\mu\text{A}$ | 35 | - | 30 | - | V |
| BV_{CE0} | $I_C=1.0\text{mA}$ | 30 | - | 25 | - | V |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$ | - | 0.5 | - | 0.5 | V |
| $V_{BE(ON)}$ | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | - | 0.8 | - | 0.8 | V |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$ | 300 | 900 | 400 | 1.2K | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ | 350 | - | 450 | - | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | 300 | - | 400 | - | |
| h_{fe} | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$ | 350 | 1.4K | 450 | 1.8K | |
| f_T | $V_{CE}=5.0\text{V}, I_C=0.5\text{mA}, f=20\text{MHz}$ | 50 | - | 50 | - | MHz |
| C_{ob} | $V_{CB}=5.0\text{V}, I_E=0, f=100\text{kHz}$ | - | 4.0 | - | 4.0 | pF |
| C_{ib} | $V_{EB}=0.5\text{V}, I_C=0, f=100\text{kHz}$ | - | 15 | - | 15 | pF |
| NF | $V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, R_S=10\text{k}\Omega, f=10\text{Hz to } 15.7\text{kHz}$ | - | 3.0 | - | 2.0 | dB |

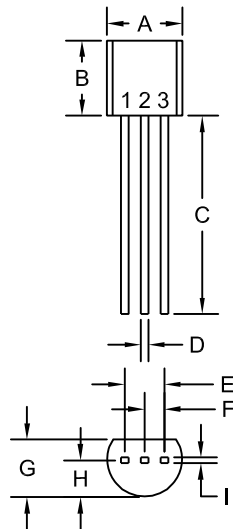
R1 (20-June 2016)

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TO-92 CASE - MECHANICAL OUTLINE



R1

| SYMBOL | DIMENSIONS | | | |
|---------|------------|-------|-------------|------|
| | 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

MARKING:

FULL PART NUMBER

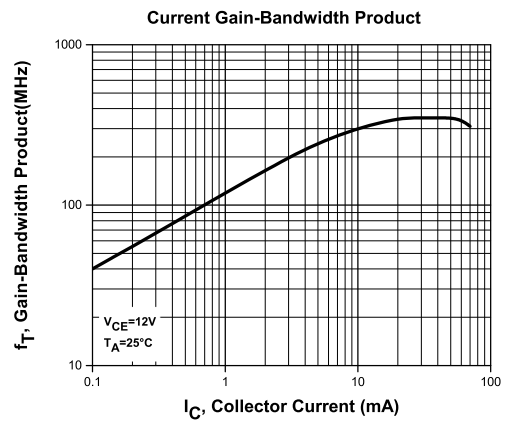
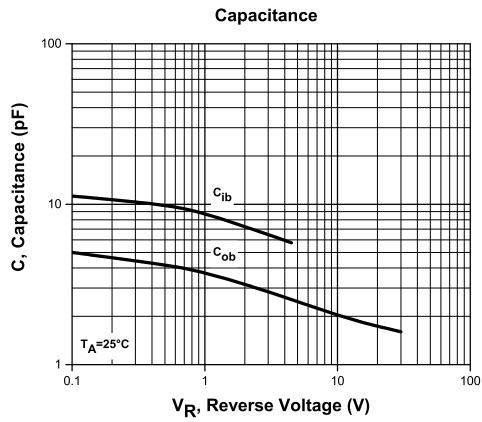
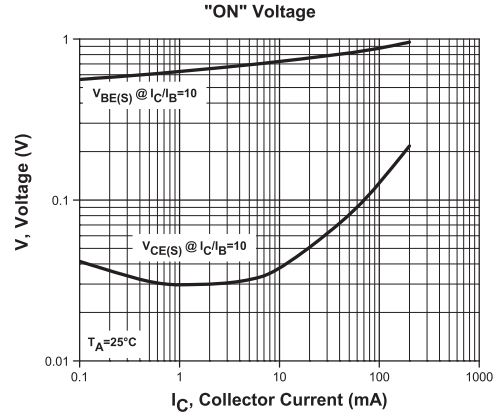
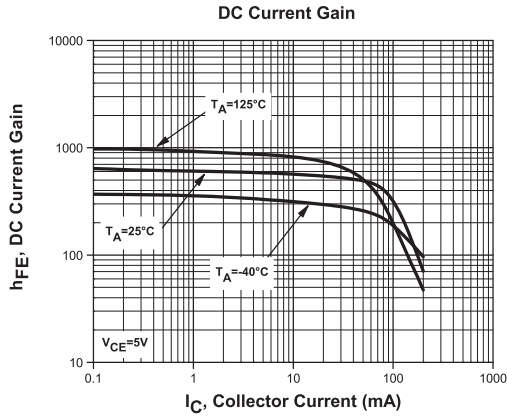
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TYPICAL ELECTRICAL CHARACTERISTICS



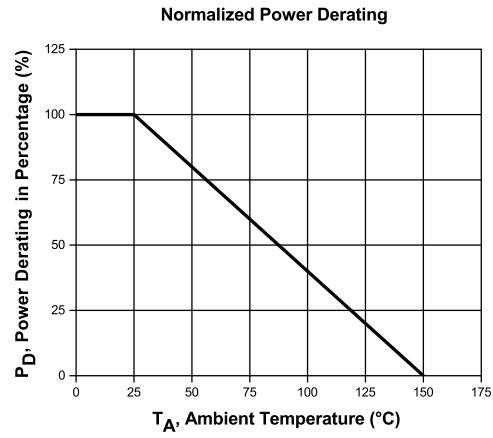
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TYPICAL ELECTRICAL CHARACTERISTICS



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