**2N2895**
**2N2896**
**2N2897**

**SILICON**
**NPN TRANSISTORS**



**TO-18 CASE**

Central Semiconductor Corp.

www.centralsemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N2895, 2N2896, and 2N2897 are silicon NPN epitaxial planar transistors designed for small signal, general purpose applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ($T_A$=25°C unless otherwise noted)

| | SYMBOL | 2N2895 | 2N2896 | 2N2897 | UNITS |
|---|---|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 120 | 140 | 60 | V |
| Collector-Emitter Voltage | $V_{CER}$ | 80 | 140 | 60 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 65 | 90 | 45 | V |
| Emitter-Base Voltage | $V_{EBO}$ | | 7.0 | | V |
| Continuous Collector Current | $I_C$ | | 1.0 | | A |
| Power Dissipation | $P_D$ | | 500 | | mW |
| Power Dissipation ($T_C$=25°C) | $P_D$ | | 1.8 | | W |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | | -65 to +200 | | °C |

**ELECTRICAL CHARACTERISTICS:** ($T_A$=25°C unless otherwise noted)

| | | 2N2895 | | 2N2896 | | 2N2897 | | |
|---|---|---|---|---|---|---|---|---|
| SYMBOL | TEST CONDITIONS | MIN | MAX | MIN | MAX | MIN | MAX | UNITS |
| $I_{CBO}$ | $V_{CB}$=60V | - | 2.0 | - | 10 | - | 50 | nA |
| $I_{CBO}$ | $V_{CB}$=60V, $T_A$=150°C | - | 2.0 | - | - | - | 50 | µA |
| $I_{CBO}$ | $V_{CB}$=90V | - | - | - | 10 | - | - | nA |
| $I_{CBO}$ | $V_{CB}$=90V, $T_A$=150°C | - | - | - | 10 | - | - | µA |
| $I_{EBO}$ | $V_{EB}$=5.0V | - | 5.0 | - | 10 | - | 50 | nA |
| $BV_{CBO}$ | $I_C$=100µA | 120 | - | 140 | - | 60 | - | V |
| $BV_{CER}$ | $I_C$=100mA, $R_{BE}$=10Ω | 80 | - | 140 | - | 60 | - | V |
| $BV_{CEO}$ | $I_C$=100mA | 65 | - | 90 | - | 45 | - | V |
| $BV_{EBO}$ | $I_E$=100µA | 7.0 | - | 7.0 | - | 7.0 | - | V |
| $V_{CE(SAT)}$ | $I_C$=150mA, $I_B$=15mA | - | 0.6 | - | 0.6 | - | 1.0 | V |
| $V_{BE(SAT)}$ | $I_C$=150mA, $I_B$=15mA | - | 1.2 | - | 1.2 | - | 1.3 | V |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=10µA | 10 | - | - | - | - | - | |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=100µA | 20 | - | - | - | - | - | |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=1.0mA | - | - | 35 | - | 35 | - | |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=10mA | 35 | - | - | - | - | - | |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=10mA, $T_A$=-55°C | 20 | - | 20 | - | - | - | |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=150mA | 40 | 120 | 60 | 200 | 50 | 200 | |
| $h_{FE}$ | $V_{CE}$=10V, $I_C$=500mA | 25 | - | - | - | - | - | |

R0 (6-August 2013)

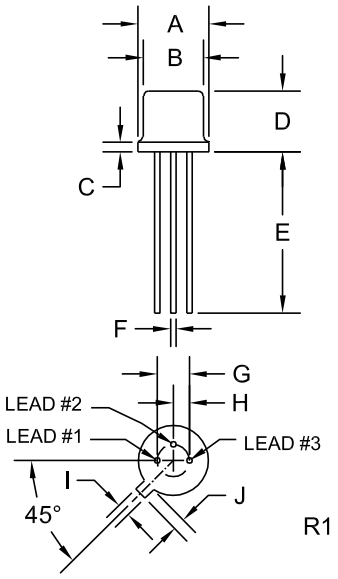
**2N2895**
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**ELECTRICAL CHARACTERISTICS - Continued:** ($T_A$=25°C unless otherwise noted)

| | | 2N2895 | | 2N2896 | | 2N2897 | | |
|---|---|---|---|---|---|---|---|---|
| **SYMBOL** | **TEST CONDITIONS** | **MIN** | **MAX** | **MIN** | **MAX** | **MIN** | **MAX** | **UNITS** |
| $f_T$ | $V_{CE}$=10V, $I_C$=50mA, f=20MHz | 120 | - | 120 | - | 100 | - | MHz |
| $C_{ob}$ | $V_{CB}$=10V, $I_E$=0, f=100kHz | - | 15 | - | 15 | - | 15 | pF |
| $C_{ib}$ | $V_{BE}$=0.5V, $I_C$=0, f=100kHz | - | 80 | - | 80 | - | 80 | pF |
| $h_{fe}$ | $V_{CE}$=5.0V, $I_C$=5.0mA, f=1.0kHz | 50 | 200 | 50 | 275 | 50 | 275 | |
| NF | $V_{CE}$=10V, $I_C$=0.3mA, $R_S$=500Ω, f=1.0kHz, BW=15kHz | - | 8.0 | - | - | - | - | dB |

## TO-18 CASE - MECHANICAL OUTLINE




| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | MIN | MAX | MIN | MAX |
| A (DIA) | 0.209 | 0.230 | 5.31 | 5.84 |
| B (DIA) | 0.178 | 0.195 | 4.52 | 4.95 |
| C | - | 0.030 | - | 0.76 |
| D | 0.170 | 0.210 | 4.32 | 5.33 |
| E | 0.500 | - | 12.70 | - |
| F (DIA) | 0.016 | 0.019 | 0.41 | 0.48 |
| G (DIA) | 0.100 | | 2.54 | |
| H | 0.050 | | 1.27 | |
| I | 0.036 | 0.046 | 0.91 | 1.17 |
| J | 0.028 | 0.048 | 0.71 | 1.22 |

TO-18 (REV: R1)

**LEAD CODE:**
1) Emitter
2) Base
3) Collector

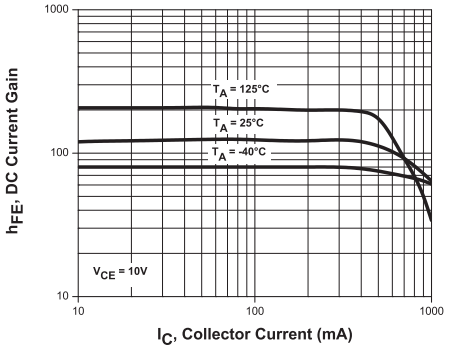
**MARKING: FULL PART NUMBER**

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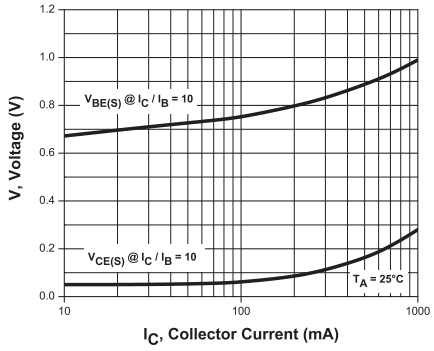
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## TYPICAL ELECTRICAL CHARACTERISTICS

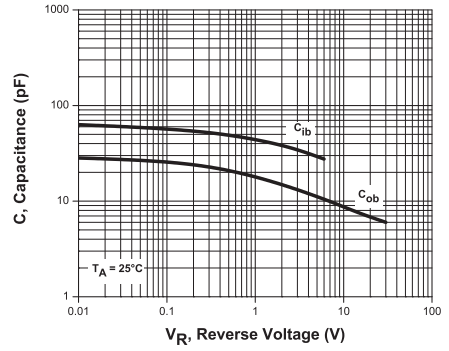
DC Current Gain



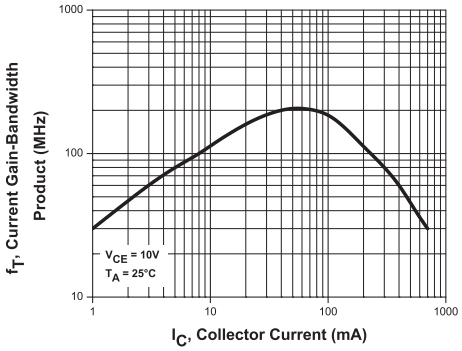

"ON" Voltage



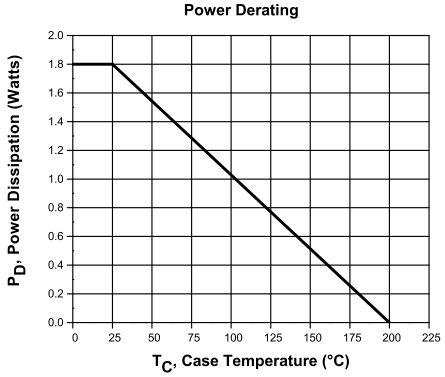

Capacitance




Current Gain-Bandwidth Product




Power Derating




R0 (6-August 2013)