

2N6294 2N6295 NPN
2N6296 2N6297 PNP

**COMPLEMENTARY SILICON
DARLINGTON POWER TRANSISTORS**



TO-66 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N6294, 2N6296 series devices are complementary silicon Darlington power transistors, manufactured by the epitaxial base process, designed for high gain amplifier and medium speed switching applications.

MARKING: FULL PART NUMBER

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

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

| SYMBOL | 2N6294 | 2N6295 | UNITS |
|----------------|-------------|--------|--------------------|
| | 2N6296 | 2N6297 | |
| V_{CBO} | 60 | 80 | V |
| V_{CEO} | 60 | 80 | V |
| V_{EBO} | | 5.0 | V |
| I_C | | 4.0 | A |
| I_{CM} | | 8.0 | A |
| I_B | | 80 | mA |
| P_D | | 50 | W |
| T_J, T_{stg} | -65 to +200 | | $^\circ\text{C}$ |
| θ_{JC} | 3.5 | | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS: ($T_C=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|---|-----|-----|-------|
| I_{CEV} | $V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}$ | | 0.5 | mA |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$ | | 5.0 | mA |
| I_{CEO} | $V_{CE}=\frac{1}{2}\text{Rated } V_{CEO}$ | | 0.5 | mA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | 2.0 | mA |
| BV_{CEO} | $I_C=50\text{mA}, (2\text{N}6294, 2\text{N}6296)$ | 60 | | V |
| BV_{CEO} | $I_C=50\text{mA}, (2\text{N}6295, 2\text{N}6297)$ | 80 | | V |
| $V_{CE(SAT)}$ | $I_C=2.0\text{A}, I_B=8.0\text{mA}$ | | 2.0 | V |
| $V_{CE(SAT)}$ | $I_C=4.0\text{A}, I_B=40\text{mA}$ | | 3.0 | V |
| $V_{BE(SAT)}$ | $I_C=4.0\text{A}, I_B=40\text{mA}$ | | 4.0 | V |
| $V_{BE(ON)}$ | $V_{CE}=3.0\text{V}, I_C=2.0\text{A}$ | | 2.8 | V |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=2.0\text{A}$ | 750 | 18K | |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=4.0\text{A}$ | 100 | | |
| h_{fe} | $V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{kHz}$ | 300 | | |
| f_T | $V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{MHz}$ | 4.0 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (NPN types) | | 120 | pF |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (PNP types) | | 200 | pF |

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TO-66 CASE - MECHANICAL OUTLINE



Seating Plane:
 The seating plane must be
 within 0.001" concave to
 0.004" convex within
 0.600" diameter from the
 center of the device.

MARKING:
 FULL PART NUMBER

| SYMBOL | DIMENSIONS | | MILLIMETERS | |
|---------|------------|-------|-------------|-------|
| | INCHES | | MIN | MAX |
| A (DIA) | 0.470 | 0.500 | 11.94 | 12.70 |
| B | 0.250 | 0.340 | 6.35 | 8.64 |
| C | 0.360 | - | 9.14 | - |
| D | 0.050 | 0.075 | 1.27 | 1.91 |
| E (DIA) | 0.028 | 0.034 | 0.71 | 0.86 |
| F | 0.956 | 0.964 | 24.28 | 24.48 |
| G | 0.570 | 0.590 | 14.48 | 14.99 |
| H | 0.190 | 0.210 | 4.83 | 5.33 |
| I | 0.093 | 0.107 | 2.36 | 2.72 |
| J (DIA) | 0.142 | 0.152 | 3.61 | 3.86 |
| K (RAD) | 0.141 | | 3.58 | |
| L (RAD) | 0.345 | | 8.76 | |

TO-66 (REV:R3)

R2 (2-September 2014)