

2N6298 2N6299 PNP
2N6300 2N6301 NPN

**COMPLEMENTARY SILICON
DARLINGTON POWER TRANSISTORS**



TO-66 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N6298 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 | 2N6298 | 2N6299 | UNITS |
|----------------|--------|-------------|--------------------|
| | 2N6300 | 2N6301 | |
| V_{CBO} | 60 | 80 | V |
| V_{CEO} | 60 | 80 | V |
| V_{EBO} | | 5.0 | V |
| I_C | | 8.0 | A |
| I_{CM} | | 16 | A |
| I_B | | 120 | mA |
| P_D | | 75 | W |
| T_J, T_{stg} | | -65 to +200 | $^\circ\text{C}$ |
| θ_{JC} | | 2.33 | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|---|-----|-----|-------|
| I_{CEV} | $V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}$ | | 0.5 | mA |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}, T_C=150^\circ\text{C}$ | | 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} | $I_C=100\text{mA}$ (2N6298, 2N6300) | 60 | | V |
| BV_{CEO} | $I_C=100\text{mA}$ (2N6299, 2N6301) | 80 | | V |
| $V_{CE(SAT)}$ | $I_C=4.0\text{A}, I_B=16\text{mA}$ | | 2.0 | V |
| $V_{CE(SAT)}$ | $I_C=8.0\text{A}, I_B=80\text{mA}$ | | 3.0 | V |
| $V_{BE(SAT)}$ | $I_C=8.0\text{A}, I_B=80\text{mA}$ | | 4.0 | V |
| $V_{BE(ON)}$ | $V_{CE}=3.0\text{V}, I_C=4.0\text{A}$ | | 2.8 | V |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=4.0\text{A}$ | 750 | 18K | |
| h_{FE} | $V_{CE}=3.0\text{V}, I_C=8.0\text{A}$ | 100 | | |
| h_{fe} | $V_{CE}=3.0\text{V}, I_C=3.0\text{A}, f=1.0\text{kHz}$ | 300 | | |
| f_T | $V_{CE}=3.0\text{V}, I_C=3.0\text{A}, f=1.0\text{MHz}$ | 4.0 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (NPN types) | | 200 | pF |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (PNP types) | | 300 | pF |

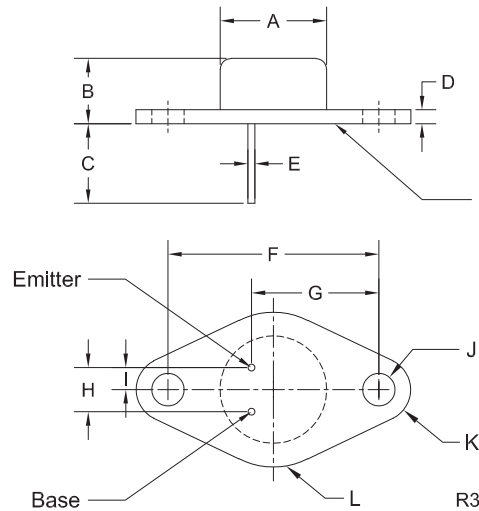
R3 (2-September 2014)

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TO-66 CASE - MECHANICAL OUTLINE



MARKING:
 FULL PART NUMBER

| SYMBOL | DIMENSIONS | | | |
|---------|------------|-------|-------------|-------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | 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)

R3 (2-September 2014)

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OUTSTANDING SUPPORT AND SUPERIOR SERVICES

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

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd 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

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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