

2N5629 2N5630 NPN
2N6029 2N6030 PNP

**COMPLEMENTARY SILICON
POWER TRANSISTORS**



TO-3 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5629, 2N6029 series devices are complementary silicon power transistors, manufactured by the epitaxial base process, designed for high voltage and high power amplifier 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 | 2N5629 | 2N5630 | UNITS |
|----------------|--------|-------------|--------------------|
| | 2N6029 | 2N6030 | |
| V_{CB0} | 100 | 120 | V |
| V_{CEO} | 100 | 120 | V |
| V_{EBO} | | 7.0 | V |
| I_C | | 16 | A |
| I_{CM} | | 20 | A |
| I_B | | 5.0 | A |
| P_D | | 200 | W |
| T_J, T_{stg} | | -65 to +200 | $^\circ\text{C}$ |
| θ_{JC} | | 0.875 | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|---|-----|-----|-------|
| I_{CBO} | $V_{CB}=\text{Rated } V_{CB0}$ | | 1.0 | mA |
| I_{CEX} | $V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}$ | | 1.0 | mA |
| I_{CEX} | $V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$ | | 5.0 | mA |
| I_{CEO} | $V_{CE}=\frac{1}{2}\text{Rated } V_{CEO}$ | | 1.0 | mA |
| I_{EBO} | $V_{EB}=7.0\text{V}$ | | 1.0 | mA |
| BV_{CEO} | $I_C=200\text{mA}$ (2N5629, 2N6029) | 100 | | V |
| BV_{CEO} | $I_C=200\text{mA}$ (2N5630, 2N6030) | 120 | | V |
| $V_{CE(SAT)}$ | $I_C=10\text{A}, I_B=1.0\text{A}$ | | 1.0 | V |
| $V_{CE(SAT)}$ | $I_C=16\text{A}, I_B=4.0\text{A}$ | | 2.0 | V |
| $V_{BE(SAT)}$ | $I_C=10\text{A}, I_B=1.0\text{A}$ | | 1.8 | V |
| $V_{BE(ON)}$ | $V_{CE}=2.0\text{V}, I_C=8.0\text{A}$ | | 1.5 | V |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=8.0\text{A}$ (2N5629, 2N6029) | 25 | 100 | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=8.0\text{A}$ (2N5630, 2N6030) | 20 | 80 | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=16\text{A}$ | 4.0 | | |
| h_{fe} | $V_{CE}=10\text{V}, I_C=4.0\text{A}, f=1.0\text{kHz}$ | 15 | | |
| f_T | $V_{CE}=20\text{V}, I_C=1.0\text{A}, f=500\text{kHz}$ | 1.0 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (NPN) | | 500 | pF |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (PNP) | | 1.0 | nF |

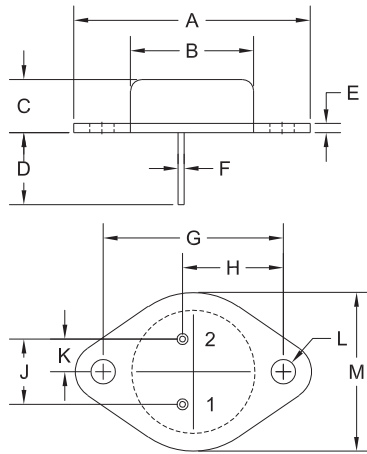
R1 (19-March 2014)

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TO-3 CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES | | MILLIMETERS | |
|---------|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.516 | 1.573 | 38.50 | 39.96 |
| B (DIA) | 0.748 | 0.875 | 19.00 | 22.23 |
| C | 0.250 | 0.450 | 6.35 | 11.43 |
| D | 0.433 | 0.516 | 11.00 | 13.10 |
| E | 0.054 | 0.065 | 1.38 | 1.65 |
| F | 0.035 | 0.045 | 0.90 | 1.15 |
| G | 1.177 | 1.197 | 29.90 | 30.40 |
| H | 0.650 | 0.681 | 16.50 | 17.30 |
| J | 0.420 | 0.440 | 10.67 | 11.18 |
| K | 0.205 | 0.225 | 5.21 | 5.72 |
| L (DIA) | 0.151 | 0.172 | 3.84 | 4.36 |
| M | 0.984 | 1.050 | 25.00 | 26.67 |

TO-3 (REV: R2)

R2

LEAD CODE:

- 1) Base
- 2) Emitter
- Case) Collector

MARKING:

FULL PART NUMBER

R1 (19-March 2014)

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)
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- 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

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