

2N5629 2N5630 NPN  
2N6029 2N6030 PNP

**COMPLEMENTARY SILICON  
POWER TRANSISTORS**



**TO-3 CASE**



[www.centrasemi.com](http://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                  |
| $V_{CE0}$      | 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 |        | $^\circ\text{C}$   |
| $\theta_{JC}$  | 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    |
| $I_{CEX}$     | $V_{CE}=\text{Rated } V_{CE0}, V_{EB}=1.5\text{V}$                        |     | 1.0 | mA    |
| $I_{CEX}$     | $V_{CE}=\text{Rated } V_{CE0}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$ |     | 5.0 | mA    |
| $I_{CEO}$     | $V_{CE}=\frac{1}{2}\text{Rated } V_{CE0}$                                 |     | 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    |

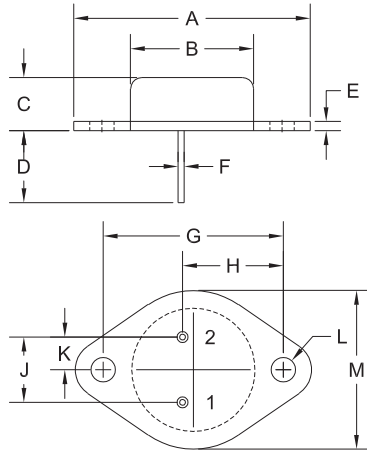
R1 (19-March 2014)

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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



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### CONTACT US

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