



# THE DATASHEET OF 2N6027

2N6027  
2N6028

**SILICON  
PROGRAMMABLE  
UNIJUNCTION TRANSISTORS**



**TO-92 CASE**



[www.centralemi.com](http://www.centralemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N6027 and 2N6028 devices are silicon programmable unijunction transistors, manufactured in an epoxy molded package, designed for adjustable (programmable) characteristics such as Valley Current ( $I_V$ ), Peak Current ( $I_P$ ), and Intrinsic Standoff Ratio ( $\eta$ ).

**MARKING: FULL PART NUMBER**

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

Gate-Cathode Forward Voltage

Gate-Cathode Reverse Voltage

Gate-Anode Reverse Voltage

Anode-Cathode Voltage

Peak Non-Repetitive Forward Current ( $t=10\mu\text{s}$ )

Peak Repetitive Forward Current ( $t=20\mu\text{s}$ , D.C.=1.0%)

Peak Repetitive Forward Current ( $t=100\mu\text{s}$ , D.C.=1.0%)

DC Forward Anode Current

DC Gate Current

Power Dissipation

Operating Junction Temperature

Storage Temperature

**SYMBOL**

$V_{GKF}$  40

$V_{GKR}$  5.0

$V_{GAR}$  40

$V_{AK}$  40

$I_{TSM}$  5.0

$I_{TRM}$  2.0

$I_{TRM}$  1.0

$I_T$  150

$I_G$  50

$P_D$  300

$T_J$  -50 to +100

$T_{stg}$  -55 to +150

**UNITS**

V

V

V

V

A

A

A

mA

mA

mW

$^\circ\text{C}$

$^\circ\text{C}$

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

| SYMBOL    | TEST CONDITIONS                            | 2N6027 |     | 2N6028 |      | UNITS         |
|-----------|--------------------------------------------|--------|-----|--------|------|---------------|
|           |                                            | MIN    | MAX | MIN    | MAX  |               |
| $I_{GAO}$ | $V_S=40\text{V}$                           | -      | 10  | -      | 10   | nA            |
| $I_{GKS}$ | $V_S=40\text{V}$                           | -      | 50  | -      | 50   | nA            |
| $I_P$     | $V_S=10\text{V}$ , $R_G=1.0\text{M}\Omega$ | -      | 2.0 | -      | 0.15 | $\mu\text{A}$ |
| $I_P$     | $V_S=10\text{V}$ , $R_G=10\text{k}\Omega$  | -      | 5.0 | -      | 1.0  | $\mu\text{A}$ |
| $I_V$     | $V_S=10\text{V}$ , $R_G=1.0\text{M}\Omega$ | -      | 50  | -      | 25   | $\mu\text{A}$ |
| $I_V$     | $V_S=10\text{V}$ , $R_G=10\text{k}\Omega$  | 70     | -   | 25     | -    | $\mu\text{A}$ |
| $I_V$     | $V_S=10\text{V}$ , $R_G=200\Omega$         | 1.5    | -   | 1.0    | -    | mA            |
| $V_T$     | $V_S=10\text{V}$ , $R_G=1.0\text{M}\Omega$ | 0.2    | 1.6 | 0.2    | 0.6  | V             |
| $V_T$     | $V_S=10\text{V}$ , $R_G=10\text{k}\Omega$  | 0.2    | 0.6 | 0.2    | 0.6  | V             |
| $V_F$     | $I_F=50\text{mA}$                          | -      | 1.5 | -      | 1.5  | V             |
| $V_O$     | $V_B=20\text{V}$ , $C_C=0.2\mu\text{F}$    | 6.0    | -   | 6.0    | -    | V             |
| $t_r$     | $V_B=20\text{V}$ , $C_C=0.2\mu\text{F}$    | -      | 80  | -      | 80   | ns            |

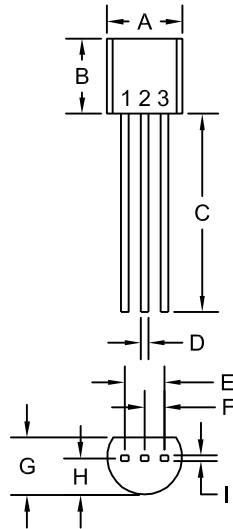
R2 (4-February 2014)

2N6027  
2N6028

SILICON  
PROGRAMMABLE  
UNIJUNCTION TRANSISTORS



#### TO-92 CASE - MECHANICAL OUTLINE



| SYMBOL  | INCHES |       | MILLIMETERS |      |
|---------|--------|-------|-------------|------|
|         | MIN    | MAX   | MIN         | MAX  |
| A (DIA) | 0.175  | 0.205 | 4.45        | 5.21 |
| B       | 0.170  | 0.210 | 4.32        | 5.33 |
| C       | 0.500  | -     | 12.70       | -    |
| D       | 0.016  | 0.022 | 0.41        | 0.56 |
| E       | 0.100  |       | 2.54        |      |
| F       | 0.050  |       | 1.27        |      |
| G       | 0.125  | 0.165 | 3.18        | 4.19 |
| H       | 0.080  | 0.105 | 2.03        | 2.67 |
| I       | 0.015  |       | 0.38        |      |

TO-92 (REV: R1)

#### LEAD CODE:

- 1) Anode
- 2) Gate
- 3) Cathode

**MARKING:**  
FULL PART NUMBER

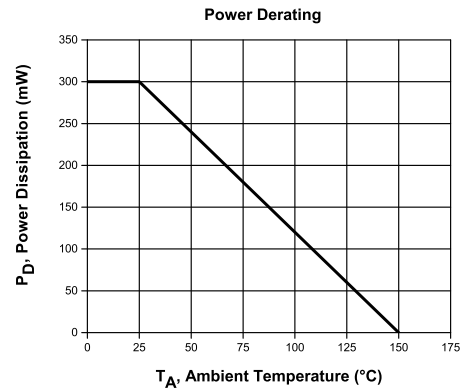
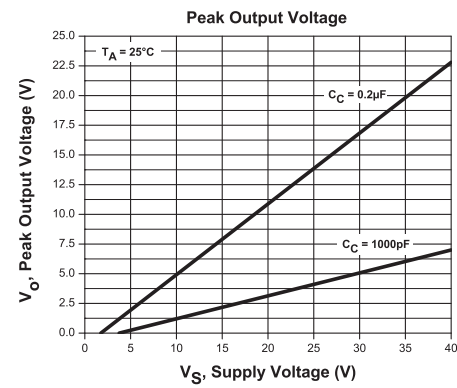
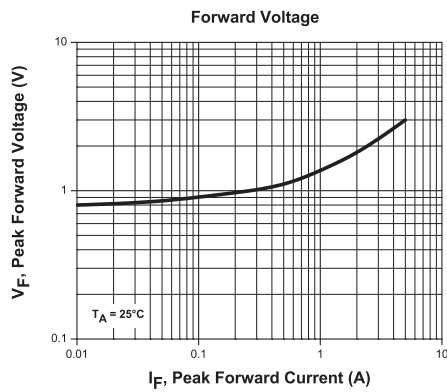
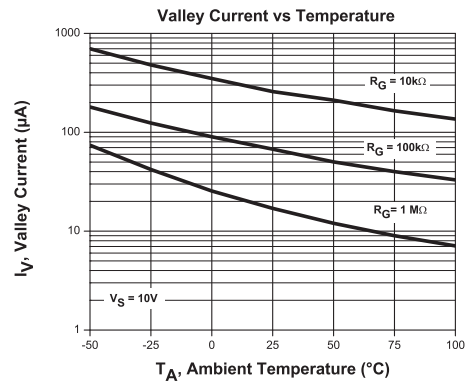
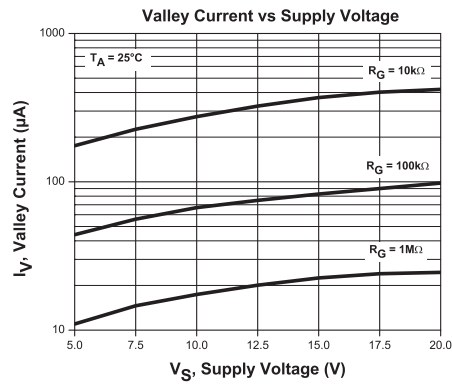
R2 (4-February 2014)

2N6027  
2N6028

SILICON  
PROGRAMMABLE  
UNIJUNCTION TRANSISTORS



TYPICAL ELECTRICAL CHARACTERISTICS



R2 (4-February 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 (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

---

### 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).

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  View [2N6027](#) on WIN SOURCE
-  [Central Semiconductor Corp](#) Information

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management