

BRX44    BRX47  
 BRX45    BRX48  
 BRX46    BRX49

**SILICON CONTROLLED RECTIFIER  
 0.8 AMP, 30 THRU 400 VOLTS**



**TO-92 CASE**

# Central™

**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BRX44 series types are PNP Silicon Controlled Rectifiers manufactured in a TO-92 case, designed for control systems and sensing circuit applications.

**MARKING CODE: FULL PART NUMBER**

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

|  | SYMBOL             | BRX44 | BRX45 | BRX46 | BRX47       | BRX48 | BRX49 | UNITS              |
|--|--------------------|-------|-------|-------|-------------|-------|-------|--------------------|
| Peak Repetitive Off-State Voltage                    | $V_{DRM}, V_{RRM}$ | 30    | 60    | 100   | 200         | 300   | 400   | V                  |
| RMS On-State Current ( $T_C=40^\circ\text{C}$ )      | $I_T(\text{RMS})$  |       |       |       | 0.8         |       |       | A                  |
| Average On-State Current ( $T_C=40^\circ\text{C}$ )  | $I_T(\text{AV})$   |       |       |       | 0.5         |       |       | A                  |
| Nonrept. On-State Current ( $T_C=60^\circ\text{C}$ ) | $I_{TSM}$          |       |       |       | 10          |       |       | A                  |
| Fusing Current ( $t=10\text{ms}$ )                   | $I^2t$             |       |       |       | 0.24        |       |       | A <sup>2</sup> s   |
| Peak Reverse Gate Voltage ( $I_{GR}=10\mu\text{A}$ ) | $V_{GRM}$          |       |       |       | 8.0         |       |       | V                  |
| Peak Gate Current ( $t=10\mu\text{s}$ )              | $I_{GM}$           |       |       |       | 1.0         |       |       | A                  |
| Peak Gate Dissipation ( $t=10\mu\text{s}$ )          | $P_{GM}$           |       |       |       | 2.0         |       |       | W                  |
| Gate Dissipation ( $t=20\text{ms}$ )                 | $P_G(\text{AV})$   |       |       |       | 0.1         |       |       | W                  |
| Operating and Storage                                |                    |       |       |       |             |       |       |                    |
| Junction Temperature                                 | $T_J, T_{stg}$     |       |       |       | -40 to +125 |       |       | $^\circ\text{C}$   |
| Thermal Resistance                                   | $\theta_{JC}$      |       |       |       | 100         |       |       | $^\circ\text{C/W}$ |
| Thermal Resistance                                   | $\theta_{JA}$      |       |       |       | 200         |       |       | $^\circ\text{C/W}$ |

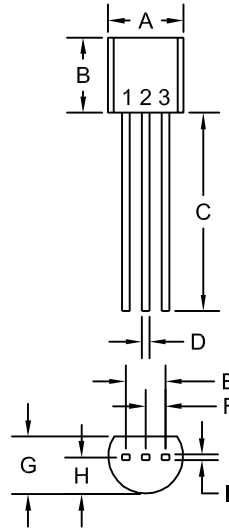
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| SYMBOL             | TEST CONDITIONS  | MIN | MAX | UNITS            |
|--------------------|--|-----|-----|------------------|
| $I_{DRM}, I_{RRM}$ | Rated $V_{DRM}, V_{RRM}, R_{GK}=1.0\text{K}\Omega, T_C=25^\circ\text{C}$           |     | 1.0 | $\mu\text{A}$    |
| $I_{DRM}, I_{RRM}$ | Rated $V_{DRM}, V_{RRM}, R_{GK}=1.0\text{K}\Omega, T_C=125^\circ\text{C}$          |     | 0.1 | mA               |
| $V_{TM}$           | $I_T=1.0\text{A}$  |     | 1.7 | V                |
| $I_{GT}$           | $V_D=6.0\text{V}, R_L=10\Omega$  |     | 200 | $\mu\text{A}$    |
| $V_{GT}$           | $V_D=6.0\text{V}, R_L=10\Omega$  |     | 0.8 | V                |
| $I_H$              | $R_{GK}=1.0\text{K}\Omega$   |     | 5.0 | mA               |
| $I_L$              | $R_{GK}=1.0\text{K}\Omega$   |     | 6.0 | mA               |
| dv/dt              | $V_D=0.67\text{V} \times V_{DRM}, R_{GK}=1.0\text{K}\Omega, T_C=125^\circ\text{C}$ | 100 |     | V/ $\mu\text{s}$ |
| di/dt              | $I_G=10\text{mA}, di_G/dt=0.1\text{A}/\mu\text{s}, T_C=125^\circ\text{C}$          | 30  |     | A/ $\mu\text{s}$ |

R0 (27-April 2004)

**SILICON CONTROLLED RECTIFIER**  
**0.8 AMP, 30 THRU 400 VOLTS**

**TO-92 CASE - MECHANICAL OUTLINE**



R1

**LEAD CODE:**

- 1) ANODE
- 2) GATE
- 3) CATHODE

**MARKING CODE:**

**FULL PART NUMBER**

| 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)

## 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)