

CS39-4B  
CS39-4D  
CS39-4M  
CS39-4N

**SILICON CONTROLLED RECTIFIER  
4 AMP, 200 THRU 800 VOLTS**



**TO-39 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CS39-4B series types are hermetically sealed silicon controlled rectifiers designed for sensing circuit applications and control systems.

**MARKING: FULL PART NUMBER**

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

|                                                     | SYMBOL             | CS39<br>-4B | CS39<br>-4D | CS39<br>-4M | CS39<br>-4N | UNITS                |
|-----------------------------------------------------|--------------------|-------------|-------------|-------------|-------------|----------------------|
| Peak Repetitive Off-State Voltage                   | $V_{DRM}, V_{RRM}$ | 200         | 400         | 600         | 800         | V                    |
| RMS On-State Current ( $T_C=90^\circ\text{C}$ )     | $I_T(\text{RMS})$  |             | 4.0         |             |             | A                    |
| Peak One Cycle Surge Current ( $t=10\text{ms}$ )    | $I_{TSM}$          |             | 35          |             |             | A                    |
| $I^2t$ Value for Fusing ( $t=10\text{ms}$ )         | $I^2t$             |             | 4.5         |             |             | $\text{A}^2\text{s}$ |
| Peak Gate Power Dissipation ( $t_p=10\mu\text{s}$ ) | $P_{GM}$           |             | 3.0         |             |             | W                    |
| Average Gate Power Dissipation                      | $P_{G(AV)}$        |             | 0.2         |             |             | W                    |
| Peak Gate Current ( $t_p=10\mu\text{s}$ )           | $I_{GM}$           |             | 1.2         |             |             | A                    |
| Operating Junction Temperature                      | $T_J$              |             | -40 to +125 |             |             | $^\circ\text{C}$     |
| Storage Temperature                                 | $T_{stg}$          |             | -65 to +150 |             |             | $^\circ\text{C}$     |
| Thermal Resistance                                  | $\Theta_{JA}$      |             | 180         |             |             | $^\circ\text{C/W}$   |
| Thermal Resistance                                  | $\Theta_{JC}$      |             | 10          |             |             | $^\circ\text{C/W}$   |

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

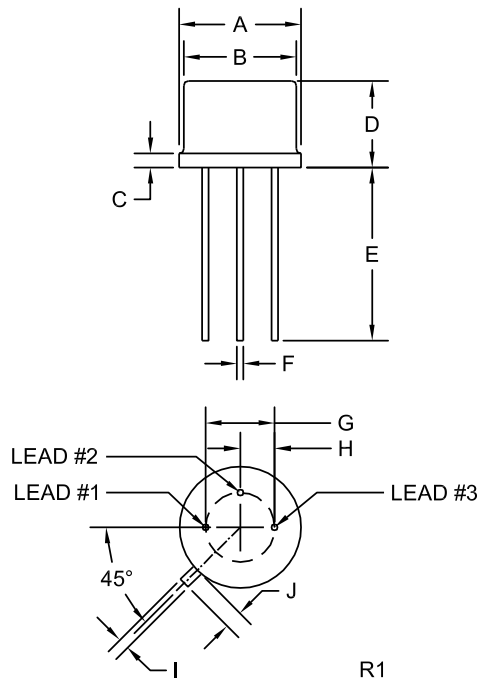
| SYMBOL             | TEST CONDITIONS                                                           | MIN | TYP  | MAX  | UNITS                  |
|--------------------|---------------------------------------------------------------------------|-----|------|------|------------------------|
| $I_{DRM}, I_{RRM}$ | Rated $V_{DRM}, V_{RRM}, R_{GK}=1.0\text{K}\Omega$                        |     |      | 5.0  | $\mu\text{A}$          |
| $I_{DRM}, I_{RRM}$ | Rated $V_{DRM}, V_{RRM}, R_{GK}=1.0\text{K}\Omega, T_C=125^\circ\text{C}$ |     |      | 200  | $\mu\text{A}$          |
| $I_{GT}$           | $V_D=12\text{V}, R_L=10\Omega$                                            |     | 38   | 200  | $\mu\text{A}$          |
| $I_H$              | $I_T=50\text{mA}, R_{GK}=1.0\text{K}\Omega$                               |     | 0.25 | 5.0  | mA                     |
| $V_{GT}$           | $V_D=12\text{V}, R_L=10\Omega$                                            |     | 0.55 | 0.8  | V                      |
| $V_{GD}$           | $V_D=300\text{V}, R_{GK}=1.0\text{K}\Omega, T_C=125^\circ\text{C}$        | 0.2 |      |      | V                      |
| $V_{TM}$           | $I_T=8.0\text{A}, t_p=380\mu\text{s}$                                     |     | 1.6  | 1.95 | V                      |
| $dv/dt$            | $V_D=\frac{2}{3}V_{DRM}, R_{GK}=1.0\text{K}\Omega, T_C=125^\circ\text{C}$ | 10  |      |      | $\text{V}/\mu\text{s}$ |

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#### TO-39 CASE - MECHANICAL OUTLINE



| SYMBOL  | DIMENSIONS |       |             |      |
|---------|------------|-------|-------------|------|
|         | INCHES     |       | MILLIMETERS |      |
|         | MIN        | MAX   | MIN         | MAX  |
| A (DIA) | 0.335      | 0.370 | 8.51        | 9.40 |
| B (DIA) | 0.315      | 0.335 | 8.00        | 8.51 |
| C       | -          | 0.040 | -           | 1.02 |
| D       | 0.240      | 0.260 | 6.10        | 6.60 |
| E       | 0.500      | -     | 12.70       | -    |
| F (DIA) | 0.016      | 0.021 | 0.41        | 0.53 |
| G (DIA) | 0.200      |       | 5.08        |      |
| H       | 0.100      |       | 2.54        |      |
| I       | 0.028      | 0.034 | 0.71        | 0.86 |
| J       | 0.029      | 0.045 | 0.74        | 1.14 |

TO-39 (REV: R1)

#### LEAD CODE:

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

#### MARKING: FULL PART NUMBER

R3 (19-September 2012)

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