

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com

CS65-70B  
CS65-70D  
CS65-70M  
CS65-70N  
CS65-70P  
CS65-70PB

SILICON CONTROLLED RECTIFIER  
70 AMPS RMS, 200 THRU 1200 VOLTS

TO-65 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CS65-70B series types are High Power Silicon Controlled Rectifiers designed for phase control applications.

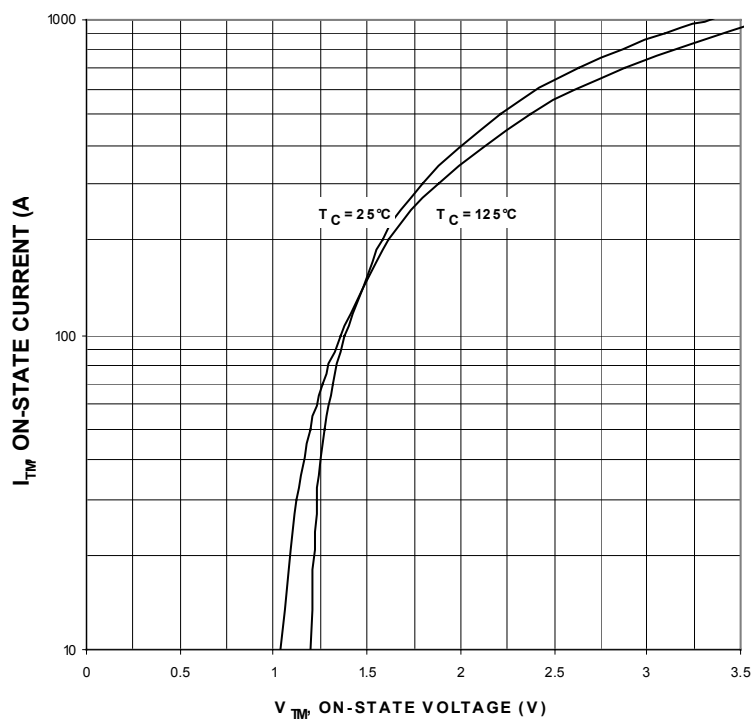
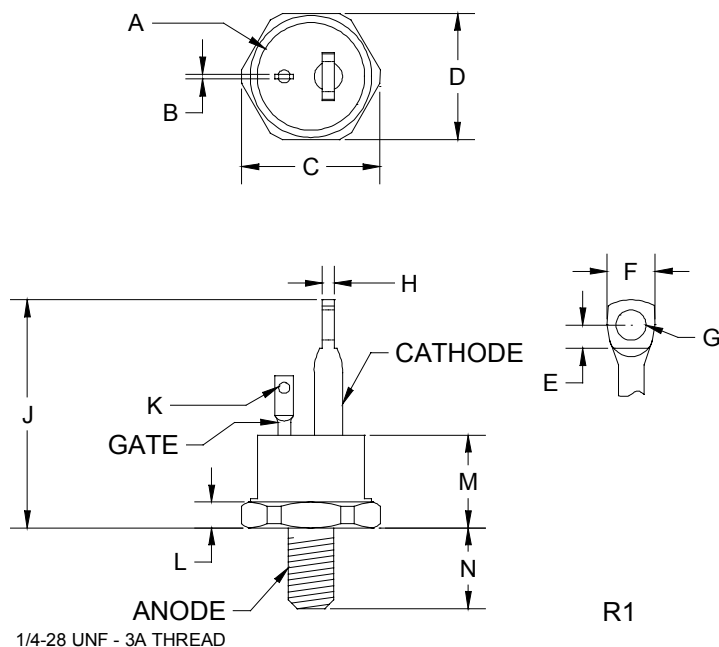
## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

|                                                  | SYMBOL                              | CS65<br>-70B | CS65<br>-70D | CS65<br>-70M | CS65<br>-70N | CS65<br>-70P | CS65<br>-70PB | UNITS            |
|--------------------------------------------------|-------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|------------------|
| Peak Repetitive Off-State Voltage                | V <sub>DRM</sub> , V <sub>RRM</sub> | 200          | 400          | 600          | 800          | 1000         | 1200          | V                |
| Peak Non-Repetitive Reverse Voltage              | V <sub>RSM</sub>                    | 300          | 500          | 700          | 900          | 1100         | 1300          | V                |
| RMS On-State Current (T <sub>C</sub> =102°C)     | I <sub>T(RMS)</sub>                 |              |              |              | 63           |              |               | A                |
| Average On-State Current (T <sub>C</sub> =102°C) | I <sub>T(AV)</sub>                  |              |              |              | 40           |              |               | A                |
| Peak One Cycle Surge (60Hz)                      | I <sub>TSM</sub>                    |              |              |              | 1000         |              |               | A                |
| I <sup>2</sup> t Value for Fusing (t=8.3ms)      | I <sup>2</sup> t                    |              |              |              | 4100         |              |               | A <sup>2</sup> s |
| Peak Forward Gate Voltage                        | V <sub>FGM</sub>                    |              |              |              | 20           |              |               | V                |
| Peak Reverse Gate Voltage                        | V <sub>RGM</sub>                    |              |              |              | 10           |              |               | V                |
| Peak Gate Power                                  | P <sub>GM</sub>                     |              |              |              | 10           |              |               | W                |
| Average Gate Power (tp=10μs)                     | P <sub>G(AV)</sub>                  |              |              |              | 1.0          |              |               | W                |
| Peak Gate Current                                | I <sub>GM</sub>                     |              |              |              | 3.0          |              |               | A                |
| Critical Rate of Rise of On-State Current        | di/dt                               |              |              |              | 200          |              |               | A/μs             |
| Storage Temperature                              | T <sub>stg</sub>                    |              |              |              | -65 to +150  |              |               | °C               |
| Junction Temperature                             | T <sub>J</sub>                      |              |              |              | -65 to +125  |              |               | °C               |
| Thermal Resistance                               | Θ <sub>J-C</sub>                    |              |              |              | 0.35         |              |               | °C/W             |

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| SYMBOL                              | TEST CONDITIONS                                                   | MIN | TYP | MAX | UNITS |
|-------------------------------------|-------------------------------------------------------------------|-----|-----|-----|-------|
| I <sub>DRM</sub> , I <sub>RRM</sub> | Rated V <sub>DRM</sub> , V <sub>RRM</sub> , T <sub>C</sub> =125°C |     |     | 6.0 | mA    |
| I <sub>GT</sub>                     | V <sub>D</sub> =12V, R <sub>L</sub> =33Ω                          |     |     | 100 | mA    |
| I <sub>H</sub>                      | I <sub>T</sub> =500mA                                             |     |     | 200 | mA    |
| V <sub>GT</sub>                     | V <sub>D</sub> =12V, R <sub>L</sub> =33Ω                          |     |     | 3.0 | V     |
| V <sub>TM</sub>                     | I <sub>TM</sub> =500A                                             |     |     | 3.0 | V     |
| dv/dt                               | V <sub>D</sub> =.67 x V <sub>DRM</sub> , T <sub>C</sub> =125°C    | 200 |     |     | V/μs  |

(SEE REVERSE SIDE)

MAXIMUM ON-STATE CHARACTERISTICSTO-65 PACKAGE - MECHANICAL OUTLINE

| SYMBOL          | INCHES |       | MILLIMETERS |       |
|-----------------|--------|-------|-------------|-------|
|                 | MIN    | MAX   | MIN         | MAX   |
| A (DIA)         | -      | 0.667 | -           | 16.94 |
| B               | 0.025  | 0.030 | 0.64        | 0.76  |
| C               | -      | 0.770 | -           | 19.56 |
| D               | 0.677  | 0.685 | 17.20       | 17.40 |
| E               | 0.120  | -     | 3.05        | -     |
| F               | 0.200  | 0.300 | 5.08        | 7.62  |
| G (DIA)         | 0.145  | 0.155 | 3.68        | 3.93  |
| H               | 0.065  | 0.085 | 1.65        | 2.15  |
| J               | 1.200  | 1.250 | 30.48       | 31.75 |
| K (DIA)         | 0.055  | 0.065 | 1.40        | 1.65  |
| L               | 0.115  | 0.155 | 2.92        | 3.94  |
| M               | -      | 0.515 | -           | 13.08 |
| N               | 0.427  | 0.447 | 10.84       | 11.35 |
| TO-65 (REV: R1) |        |       |             |       |

R1

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