



**THE DATASHEET OF  
CMR5H-06 TR13 PBFREE**



CMR5H-06

**SURFACE MOUNT SILICON  
HYPERFAST  
RECOVERY RECTIFIER  
5.0 AMP, 600 VOLT**

**HYPER  
FAST**



**SMC CASE**

**Central**  
Semiconductor Corp.

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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMR5H-06 is a HyperFast power rectifier manufactured in the epoxy molded SMC case. The extremely fast reverse recovery characteristics make this device an ideal choice for PFC and other fast switching applications.

**MARKING CODE: C5H06**

**APPLICATIONS:**

- Power factor correction
- Motor control
- DC-DC output rectification
- Freewheeling diode

**FEATURES:**

- HyperFast recovery time (20ns TYP)
- High surge capability
- Low leakage current

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

|  | <b>SYMBOL</b>  |             | <b>UNITS</b>         |
|--|----------------|-------------|----------------------|
| Peak Repetitive Reverse Voltage                      | $V_{RRM}$      | 600         | V                    |
| DC Blocking Voltage                                  | $V_R$          | 600         | V                    |
| RMS Reverse Voltage                                  | $V_{R(RMS)}$   | 420         | V                    |
| Average Forward Current ( $T_L=75^{\circ}\text{C}$ ) | $I_O$          | 5.0         | A                    |
| Peak Forward Surge Current, $t_p=8.3\text{ms}$       | $I_{FSM}$      | 100         | A                    |
| Operating and Storage Junction Temperature           | $T_J, T_{stg}$ | -65 to +175 | $^{\circ}\text{C}$   |
| Thermal Resistance                                   | $\theta_{JL}$  | 10          | $^{\circ}\text{C/W}$ |

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

| <b>SYMBOL</b> | <b>TEST CONDITIONS</b>  | <b>MIN</b> | <b>TYP</b> | <b>MAX</b> | <b>UNITS</b>  |
|---------------|---|------------|------------|------------|---------------|
| $I_R$         | $V_R=600\text{V}$   |            | 0.2        | 1.0        | $\mu\text{A}$ |
| $I_R$         | $V_R=600\text{V}, T_A=150^{\circ}\text{C}$                        |            |            | 500        | $\mu\text{A}$ |
| $BV_R$        | $I_R=100\mu\text{A}$  | 600        |            |            | V             |
| $V_F$         | $I_F=5.0\text{A}$   |            | 1.55       | 2.0        | V             |
| $C_J$         | $V_R=4.0\text{V}, f=1.0\text{MHz}$                                |            | 17         |            | pF            |
| $t_{rr}$      | $I_F=5.0\text{A}, V_R=400\text{V}, di/dt=200\text{A}/\mu\text{s}$ |            | 20         | 22         | ns            |

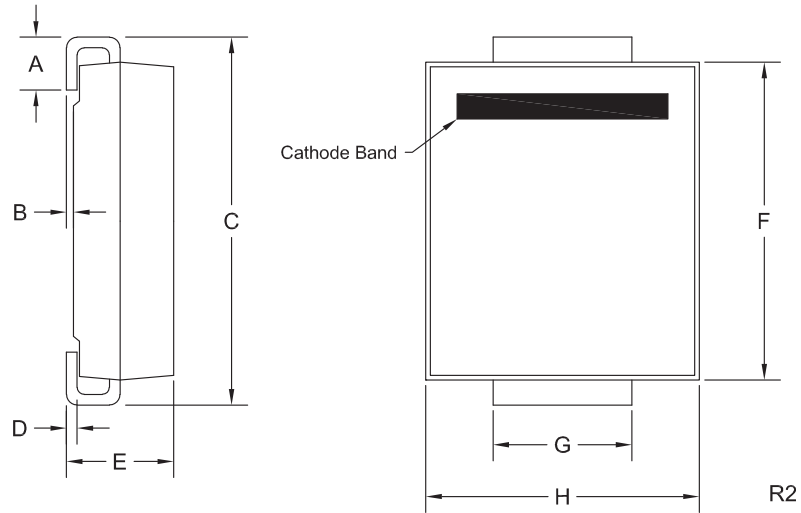
R1 (27-July 2018)

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SMC CASE - MECHANICAL OUTLINE



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| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.030  | 0.060 | 0.76        | 1.52 |
| B      | 0.002  | 0.008 | 0.05        | 0.20 |
| C      | 0.305  | 0.320 | 7.75        | 8.13 |
| D      | 0.006  | 0.012 | 0.15        | 0.31 |
| E      | 0.079  | 0.103 | 2.00        | 2.62 |
| F      | 0.260  | 0.280 | 6.60        | 7.11 |
| G      | 0.108  | 0.128 | 2.75        | 3.25 |
| H      | 0.220  | 0.245 | 5.59        | 6.22 |

SMC (REV: R2)

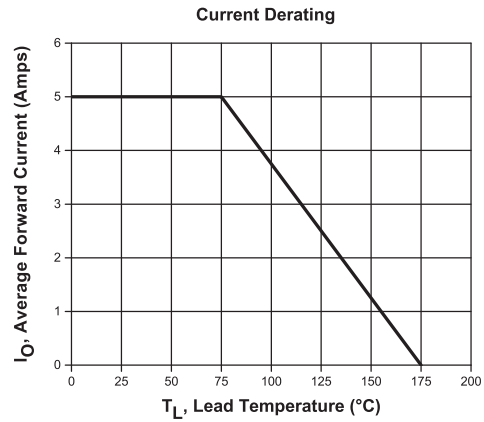
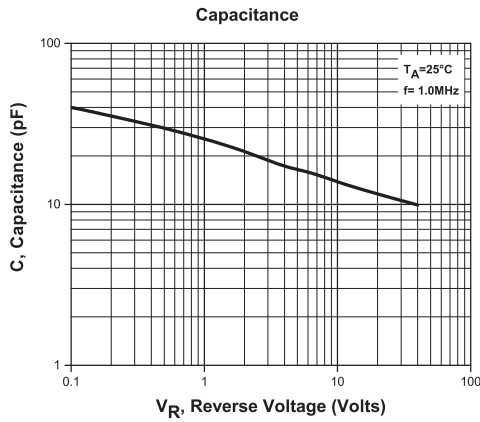
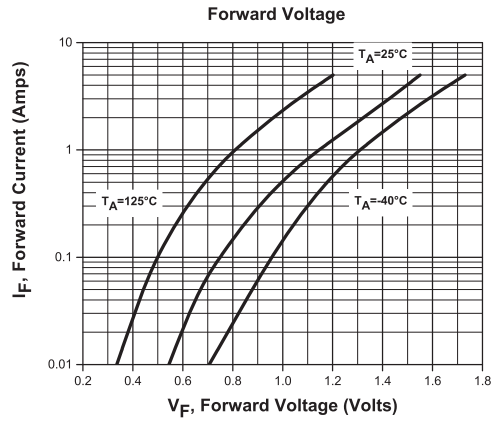
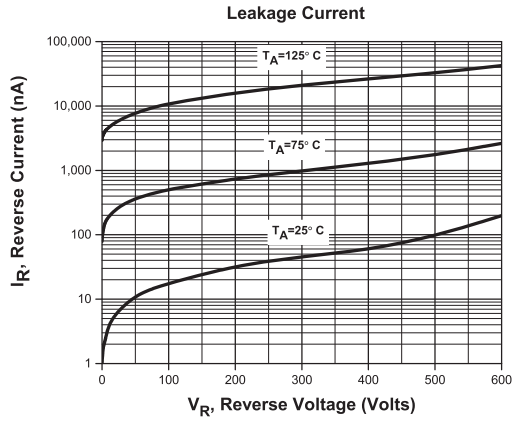
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TYPICAL ELECTRICAL CHARACTERISTICS



R1 (27-July 2018)

## 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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### 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).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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-  [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