

CSICD10-650

**SURFACE MOUNT  
SILICON CARBIDE  
SCHOTTKY RECTIFIER  
10 AMP, 650 VOLT**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CSICD10-650 is a silicon carbide Schottky rectifier designed for high frequency systems where energy efficiency and thermal performance are critical design elements.

**MARKING: FULL PART NUMBER**



**DPAK CASE**

**FEATURES:**

- Positive temperature coefficient
- High reverse voltage
- High operating temperature (175°C MAX)
- Stable switching over temperature extremes

**APPLICATIONS:**

- Power inverters
- Industrial motor drives
- Switch-mode power supplies
- Power factor correction
- Over-current protection

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

|                                                        | SYMBOL         |             | UNITS              |
|--------------------------------------------------------|----------------|-------------|--------------------|
| Peak Repetitive Reverse Voltage                        | $V_{RRM}$      | 650         | V                  |
| Peak Reverse Surge Voltage                             | $V_{RSM}$      | 650         | V                  |
| DC Blocking Voltage                                    | $V_R$          | 650         | V                  |
| Continuous Forward Current ( $T_C=135^\circ\text{C}$ ) | $I_F$          | 10          | A                  |
| Peak Forward Surge Current, $t_p=8.3\text{ms}$         | $I_{FSM}$      | 60          | A                  |
| Power Dissipation                                      | $P_D$          | 93          | W                  |
| Power Dissipation ( $T_C=135^\circ\text{C}$ )          | $P_D$          | 25          | W                  |
| Operating and Storage Junction Temperature             | $T_J, T_{stg}$ | -55 to +175 | $^\circ\text{C}$   |
| Thermal Resistance                                     | $\theta_{JC}$  | 1.6         | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS                                                  | MIN | TYP | MAX | UNIT          |
|--------|------------------------------------------------------------------|-----|-----|-----|---------------|
| $I_R$  | $V_R=650\text{V}$                                                |     | 70  | 125 | $\mu\text{A}$ |
| $I_R$  | $V_R=650\text{V}, T_J=175^\circ\text{C}$                         |     | 150 | 500 | $\mu\text{A}$ |
| $BV_R$ | $I_R=500\mu\text{A}$                                             | 650 |     |     | V             |
| $V_F$  | $I_F=10\text{A}$                                                 |     | 1.5 | 1.7 | V             |
| $V_F$  | $I_F=10\text{A}, T_J=175^\circ\text{C}$                          |     | 2.1 | 2.5 | V             |
| $Q_C$  | $V_R=400\text{V}, I_F=10\text{A}, di/dt=250\text{A}/\mu\text{s}$ |     | 16  |     | nC            |
| $C_J$  | $V_R=1.0\text{V}, f=1.0\text{MHz}$                               |     | 295 | 325 | pF            |
| $C_J$  | $V_R=300\text{V}, f=1.0\text{MHz}$                               |     | 31  |     | pF            |
| $C_J$  | $V_R=600\text{V}, f=1.0\text{MHz}$                               |     | 28  |     | pF            |

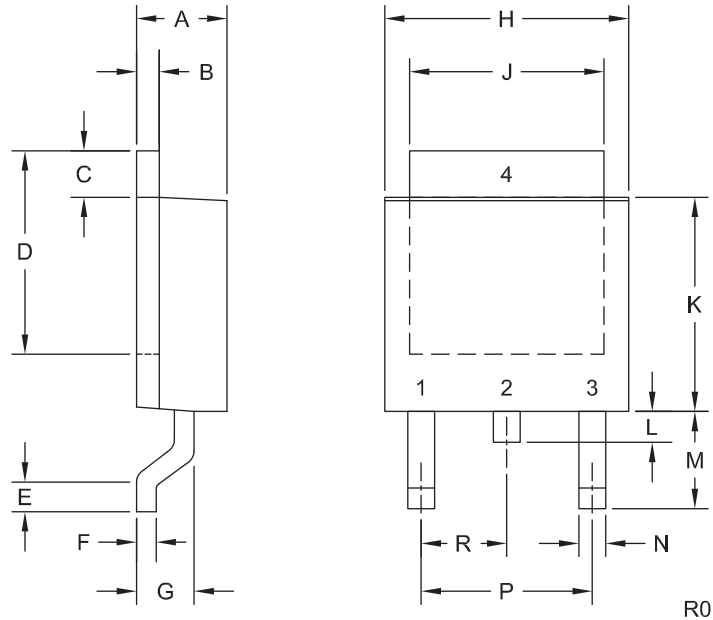
R1 (24-November 2014)

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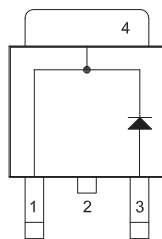
**DPAK CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- 1) Cathode
  - 2) Cathode
  - 3) Anode
  - 4) Cathode
- Pin 2 is common to the tab (4)

**MARKING: FULL PART NUMBER**



| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A          | 0.083  | 0.108 | 2.10        | 2.75 |
| B          | 0.016  | 0.032 | 0.40        | 0.81 |
| C          | 0.035  | 0.063 | 0.89        | 1.60 |
| D          | 0.203  | 0.228 | 5.15        | 5.79 |
| E          | 0.020  | -     | 0.51        | -    |
| F          | 0.018  | 0.024 | 0.45        | 0.60 |
| G          | 0.051  | 0.071 | 1.30        | 1.80 |
| H          | 0.248  | 0.268 | 6.30        | 6.81 |
| J          | 0.197  | 0.217 | 5.00        | 5.50 |
| K          | 0.209  | 0.245 | 5.30        | 6.22 |
| L          | 0.025  | 0.040 | 0.64        | 1.02 |
| M          | 0.090  | 0.115 | 2.30        | 2.91 |
| N          | 0.012  | 0.045 | 0.30        | 1.14 |
| P          | 0.180  |       | 4.60        |      |
| R          | 0.090  |       | 2.30        |      |

DPAK (REV: R0)

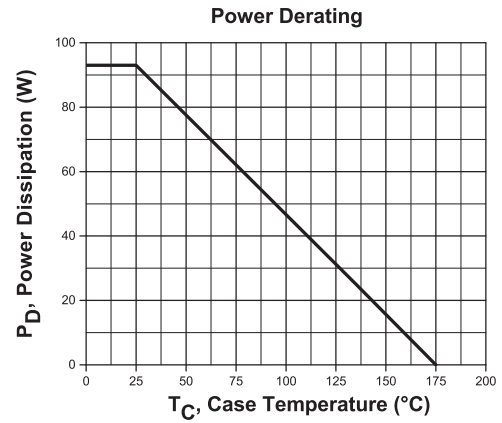
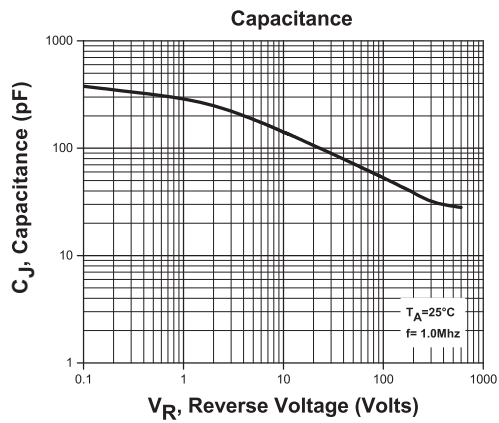
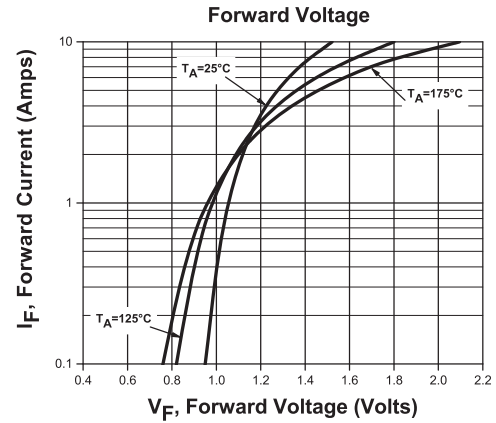
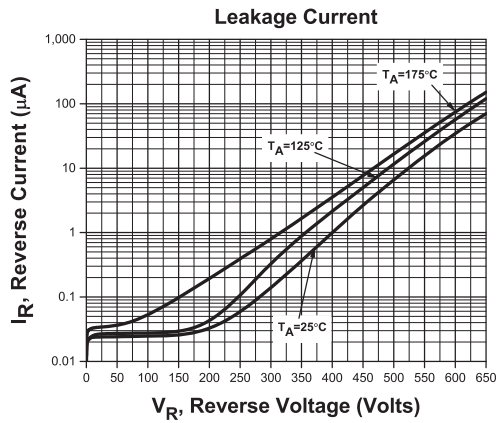
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## TYPICAL ELECTRICAL CHARACTERISTICS



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## 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
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- Custom bar coding for shipments
- Custom product packing

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- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### CONTACT US

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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