

CSICD10-650

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

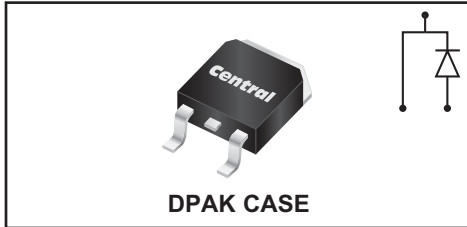


[www.centrasemi.com](http://www.centrasemi.com)

**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

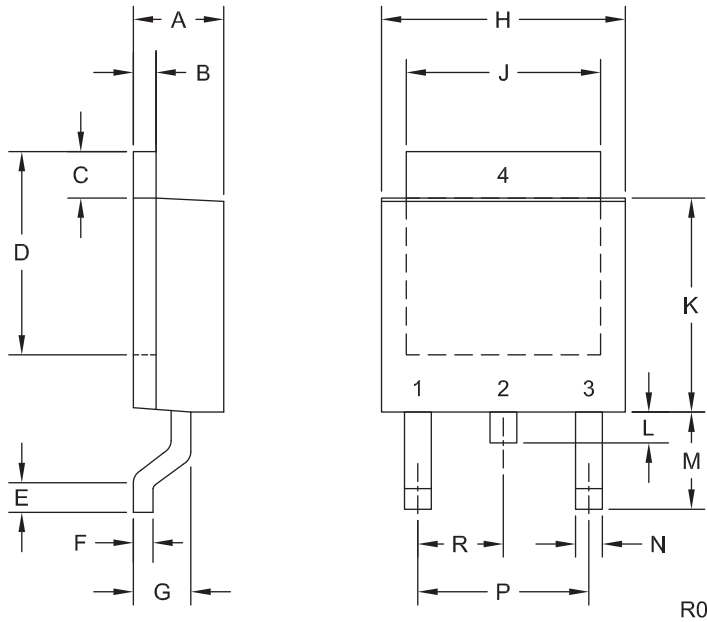
R1 (24-November 2014)

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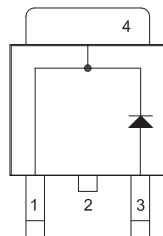
**DPAK CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING: FULL PART NUMBER**



SYMBOL	DIMENSIONS			
	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)

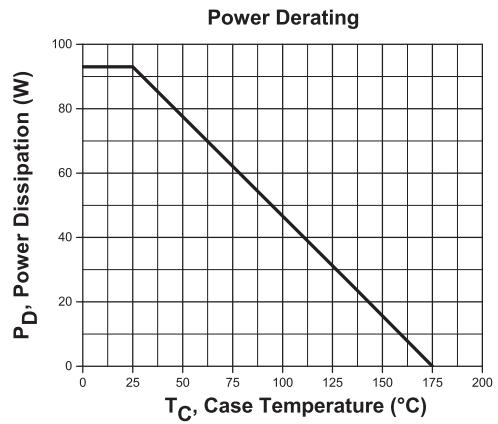
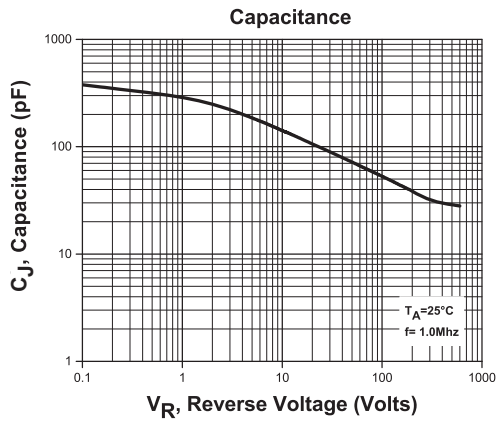
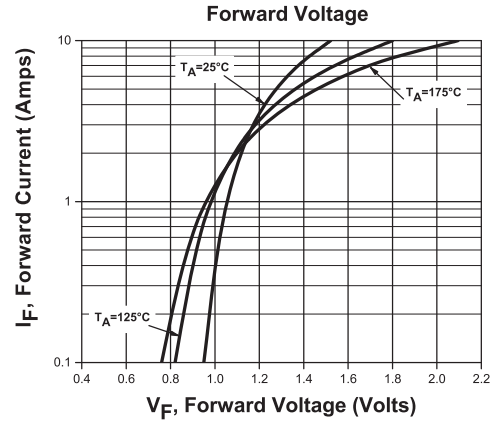
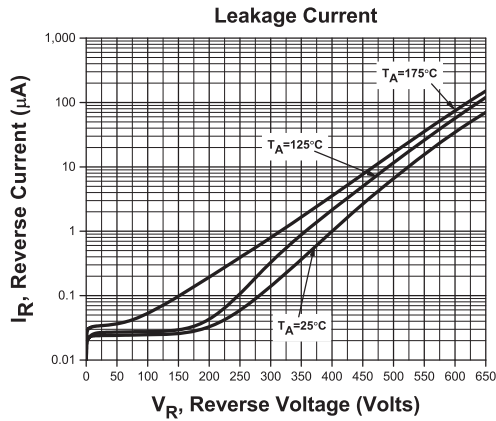
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TYPICAL ELECTRICAL CHARACTERISTICS



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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
- 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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### CONTACT US

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