

CSICD10-650

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

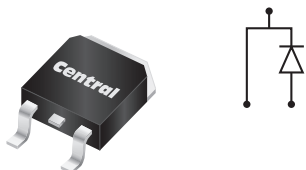


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DESCRIPTION:

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 ($T_C=152^\circ\text{C}$)	I_F	10	A
Peak Forward Surge Current, $t_p=10\text{ms}$	I_{FSM}	70	A
Single Pulse Avalanche Energy (Note 1)	E_{AS}	84	mJ
Power Dissipation	P_D	93	W
Power Dissipation ($T_C=152^\circ\text{C}$)	P_D	25	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +175	$^\circ\text{C}$
Thermal Resistance	θ_{JC}	1.6	$^\circ\text{C/W}$

Note 1: $L=5.0\text{mH}$, $I_{PK}=5.5\text{A}$, $V_{DD}=100\text{V}$, Initial $T_J=25^\circ\text{C}$

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

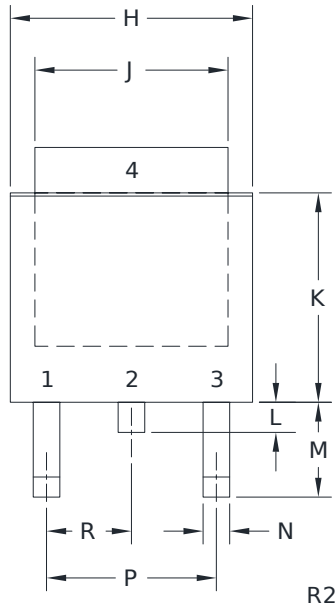
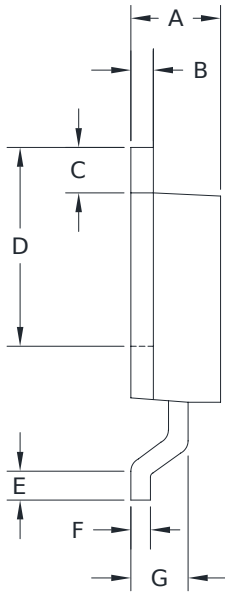
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
I_R	$V_R=650\text{V}$		10	60	μA
I_R	$V_R=650\text{V}$, $T_J=175^\circ\text{C}$		150		μA
BV_R	$I_R=60\mu\text{A}$	650			V
V_F	$I_F=10\text{A}$		1.5	1.7	V
V_F	$I_F=10\text{A}$, $T_J=150^\circ\text{C}$		1.68	2.0	V
V_F	$I_F=10\text{A}$, $T_J=175^\circ\text{C}$		1.75	2.1	V
Q_C	$V_R=400\text{V}$		23		nC
C_J	$V_R=1.0\text{V}$, $f=1.0\text{MHz}$		327		pF
C_J	$V_R=300\text{V}$, $f=1.0\text{MHz}$		38		pF
C_J	$V_R=600\text{V}$, $f=1.0\text{MHz}$		34		pF

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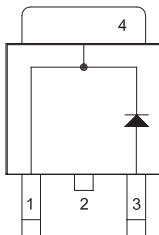
DPAK CASE - MECHANICAL OUTLINE



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	0.035	0.40	0.89
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.016	0.024	0.40	0.60
G	0.061		1.55	
H	0.248	0.268	6.30	6.81
J	0.195	0.217	4.95	5.50
K	0.209	0.245	5.30	6.22
L	0.033		0.83	
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:R2)

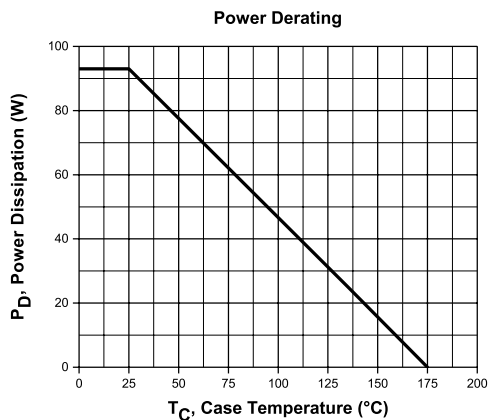
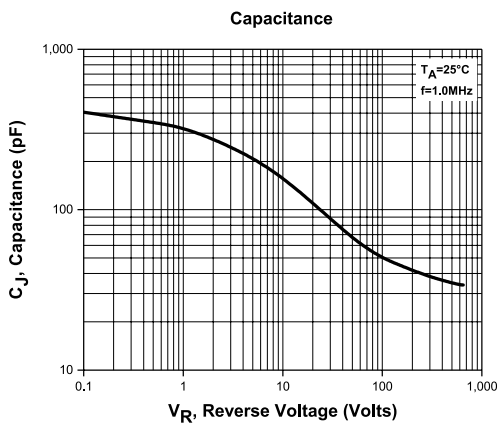
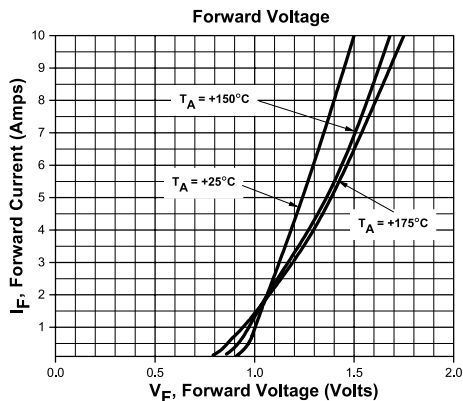
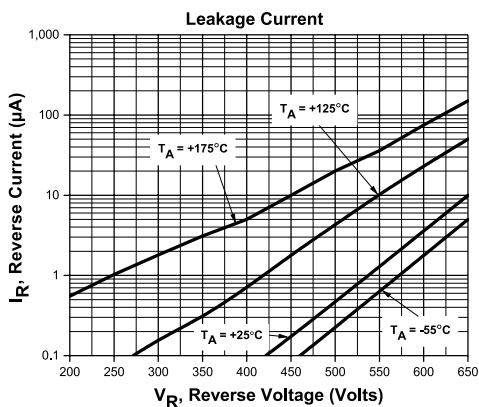
R3 (24-August 2023)

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TYPICAL ELECTRICAL CHARACTERISTICS



R3 (24-August 2023)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd 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

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).

CONTACT US

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Worldwide Distributors:
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For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms



<http://www.centrasemi.com>

Product End of Life Notification

PDN ID:	PDN01142
Notification Date:	2/04/20
Last Buy Date:	8/04/20
Last Shipment Date	2/04/21

Summary: All silicon carbide Schottky rectifiers in the DPAK-2L and TO-220-2 packages are discontinued and now classified as End of Life (EOL). However, Central will continue to support these products in bare die form.

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

Central Part Number	Replacement
CSICD05-1200 BK	N/A, Stock Only
CSICD05-1200 TR13	N/A, Stock Only
CSICD10-1200 BK	N/A, Stock Only
CSICD10-1200 TR13	N/A, Stock Only
CSICD10-650 BK	N/A, Stock Only
CSICD10-650 TR13	N/A, Stock Only
CSIC10-1200	N/A, Stock Only
CSIC10-1200 SL	N/A, Stock Only
CSIC10-650 SL	N/A, Stock Only

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centrasemi.com.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.