

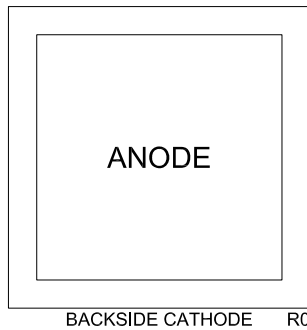
The CPC09-SIC06-650 Silicon Carbide Schottky die is optimized for high temperature applications. Parametrically, the device is energy efficient as a result of low total conduction losses and minimal changes to switching characteristics as a function of temperature.

**FEATURES:**

- Positive temperature coefficient
- Low reverse leakage current
- Temperature independent switching characteristics
- High operating junction temperature
- Metalization suitable for standard die attach technologies
- Top metalization optimized for wire bonding

**APPLICATIONS:**

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



**MECHANICAL SPECIFICATIONS:**

Die Size	46.5 x 46.5 MILS
Die Thickness	5.9 MILS
Anode Bonding Pad Size	37.8 x 37.8 MILS
Top Side Metalization	Al – 50,000Å
Back Side Metalization	Ti/Ni/Ag – 1,000Å/2,000Å/10,000Å
Scribe Alley Width	3.15 MILS
Wafer Diameter	6 INCHES
Gross Die Per Wafer	10,417

**MAXIMUM RATINGS:** ( $T_A=25^{\circ}\text{C}$  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	$I_F$	6.0	A
Peak Forward Surge Current, $t_p=10\text{ms}$	$I_{FSM}$	45	A
Operating and Storage Junction Temperature*	$T_J, T_{stg}$	-55 to +175	$^{\circ}\text{C}$

\*Maximum junction temperature was determined via a TO-247 package type.  
Theoretically, SiC die can operate at junction temperatures greater than  $600^{\circ}\text{C}$ .

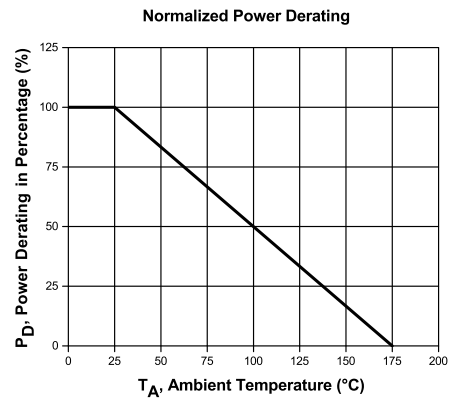
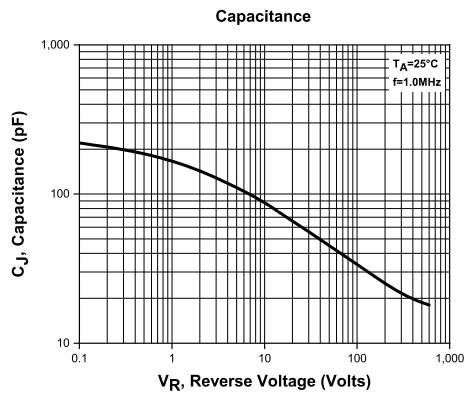
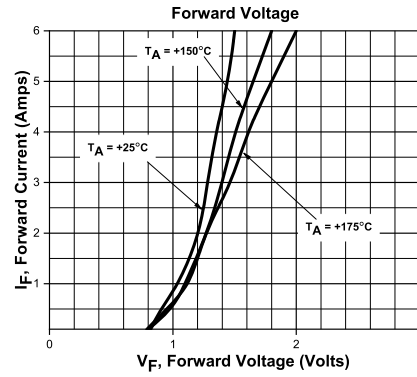
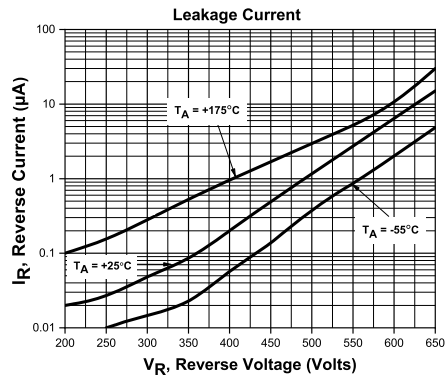
**ELECTRICAL CHARACTERISTICS:** ( $T_J=25^{\circ}\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$I_R$	$V_R=650\text{V}$		15	200	$\mu\text{A}$
$BV_R$	$I_R=200\mu\text{A}$	650			V
$V_F$	$I_F=6.0\text{A}$		1.5	1.7	V
$V_F$	$I_F=6.0\text{A}, T_J=150^{\circ}\text{C}$		1.8	2.1	V
$V_F$	$I_F=6.0\text{A}, T_J=175^{\circ}\text{C}$		2.0	2.25	V
$Q_C$	$V_R=400\text{V}$		12.7		nC
$C_J$	$V_R=1.0\text{V}, f=1.0\text{MHz}$		179		pF
$C_J$	$V_R=300\text{V}, f=1.0\text{MHz}$		21		pF
$C_J$	$V_R=600\text{V}, f=1.0\text{MHz}$		18		pF

R2 (22-July 2020)

# CPC09-SIC06-650

## Typical Electrical Characteristics



## BARE DIE PACKING OPTIONS

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### BARE DIE IN TRAY (WAFFLE) PACK

**CT:** Singulated die in tray (waffle) pack.  
(example: CP211-PART NUMBER-CT)

**CM:** Singulated die in tray (waffle) pack 100% visually inspected as per MIL-STD-750, (method 2072 transistors, method 2073 diodes).  
(example: CP211-PART NUMBER-CM)

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### UNSAWN WAFER

**WN:** Full wafer, unsawn, 100% tested with reject die inked.  
(example: CP211-PART NUMBER-WN)

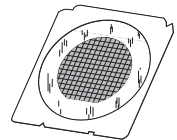
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### SAWN WAFER ON PLASTIC RING

**WR:** Full wafer, sawn and mounted on plastic ring,  
100% tested with reject die inked.  
(example: CP211-PART NUMBER-WR)

Please note: Sawn Wafer on Metal Frame (WS) is possible as a special order. Please contact your Central Sales Representative at 631-435-1110.



Visit the Central website for a complete listing of specifications:  
[www.centrasemi.com/bdspecs](http://www.centrasemi.com/bdspecs)

## 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

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