

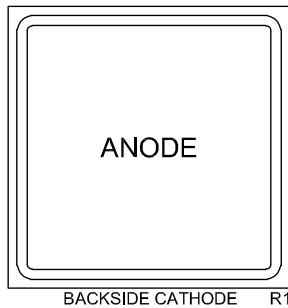
The CPC07-SIC10-650 Silicon Carbide Schottky die is optimized for high temperature applications. Parametrically, the device is energy efficient as a result of low total conduction losses and minimal changes to switching characteristics as a function of temperature.

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	57.5 x 57.5 MILS
Die Thickness	5.9 MILS
Anode Bonding Pad Size	48.8 x 48.8 MILS
Top Side Metalization	Al – 50,000Å
Back Side Metalization	Ti/Ni/Ag – 1,000Å/2,000Å/10,000Å
Scribe Alley Width	3.55 MILS
Wafer Diameter	6 INCHES
Gross Die Per Wafer	6,784

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	10	A
Peak Forward Surge Current, $t_p=10\text{ms}$	I_{FSM}	70	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°C .

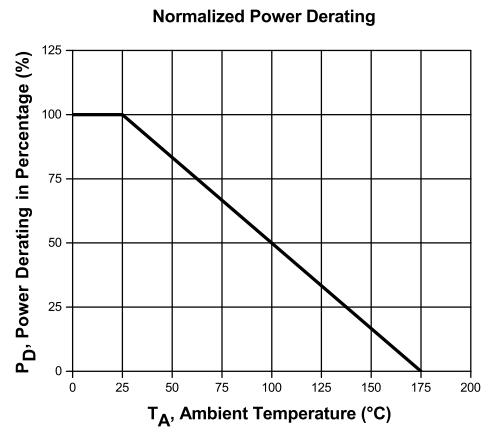
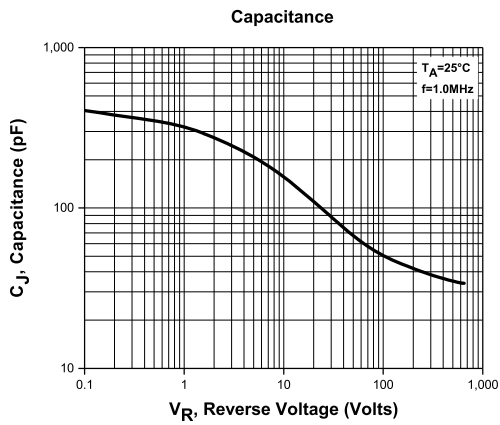
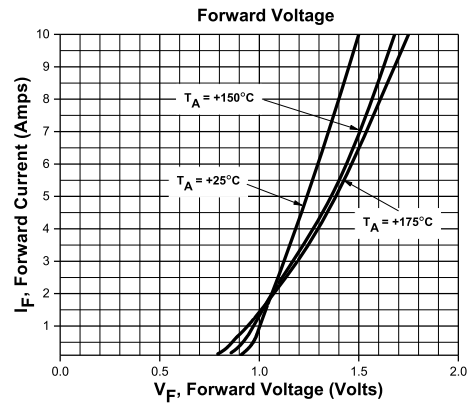
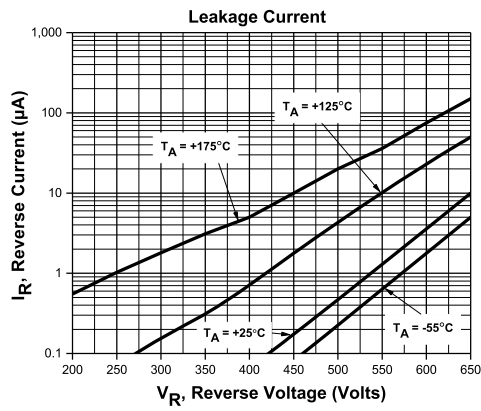
ELECTRICAL CHARACTERISTICS: ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

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

R2 (22-July 2020)

CPC07-SIC10-650

Typical Electrical Characteristics



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BARE DIE PACKING OPTIONS



BARE DIE IN TRAY (WAFFLE) PACK

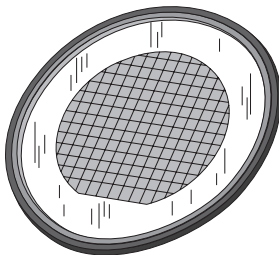
CT: Singulated die in tray (waffle) pack.
(example: CP211-PART NUMBER-CT)

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)



UNSAWN WAFER

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



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

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).

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