

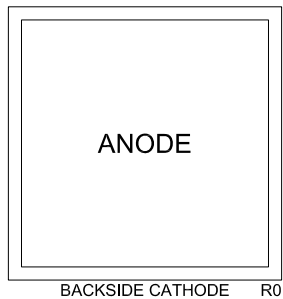
The CPC11-SIC30-650 Silicon Carbide Schottky die is optimized for high temperature applications. Parametrically, the device is energy efficient as a result of low total conduction losses and minimal changes to switching characteristics as a function of temperature.

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 | 94.5 x 94.5 MILS |
| Die Thickness | 5.9 MILS |
| Anode Bonding Pad Size | 85.4 x 85.4 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 | 2,459 |

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 | 30 | A |
| Peak Forward Surge Current, $t_p=10\text{ms}$ | I_{FSM} | 165 | 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 .

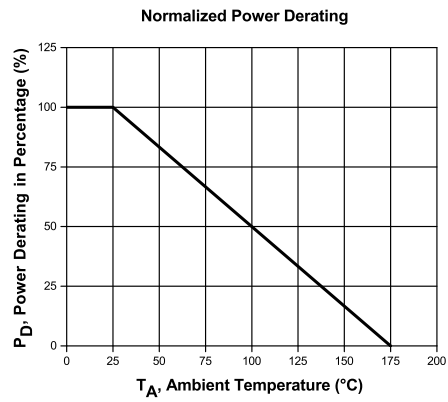
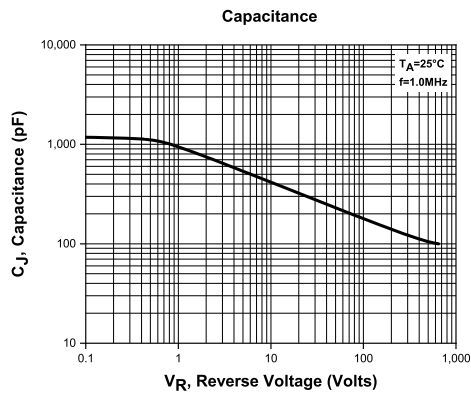
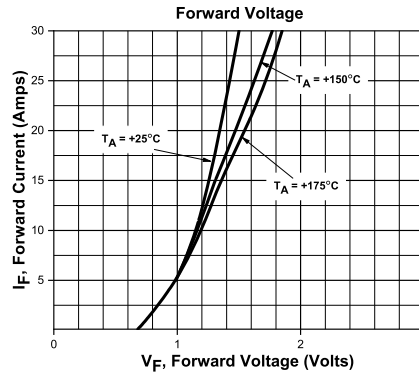
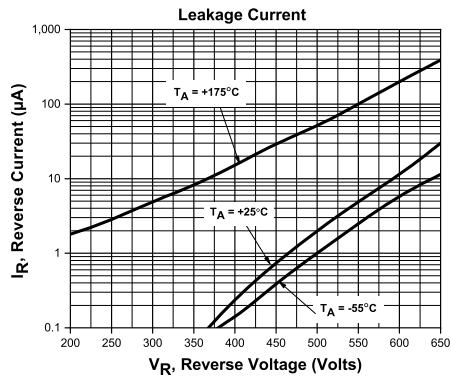
ELECTRICAL CHARACTERISTICS: ($T_J=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------|--|-----|------|------|---------------|
| I_R | $V_R=650\text{V}$ | | 30 | 370 | μA |
| I_R | $V_R=650\text{V}, T_J=175^\circ\text{C}$ | | 390 | | μA |
| BV_R | $I_R=370\mu\text{A}$ | 650 | | | V |
| V_F | $I_F=30\text{A}$ | | 1.5 | 1.7 | V |
| V_F | $I_F=30\text{A}, T_J=150^\circ\text{C}$ | | 1.77 | 2.1 | V |
| V_F | $I_F=30\text{A}, T_J=175^\circ\text{C}$ | | 1.85 | 2.25 | V |
| Q_C | $V_R=400\text{V}$ | | 72 | | nC |
| C_J | $V_R=1.0\text{V}, f=1.0\text{MHz}$ | | 990 | | pF |
| C_J | $V_R=300\text{V}, f=1.0\text{MHz}$ | | 117 | | pF |
| C_J | $V_R=600\text{V}, f=1.0\text{MHz}$ | | 101 | | pF |

R2 (22-July 2020)

CPC11-SIC30-650

Typical Electrical Characteristics



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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