

Silicon Carbide (SiC) Schottky Diode – EliteSiC, 8 A, 1200 V, D1, Die

PCFFS08120AF

Description

SiC Schottky Diode has no switching loss, provides improved system efficiency against Si diodes by utilizing new semiconductor material – Silicon Carbide, enables higher operating frequency, and helps increasing power density and reduction of system size/cost. Its high reliability ensures robust operation during surge or over-voltage conditions.

Features

- Max Junction Temperature 175°C
- Avalanche Rated 80 mJ
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery / No Forward Recovery

Applications

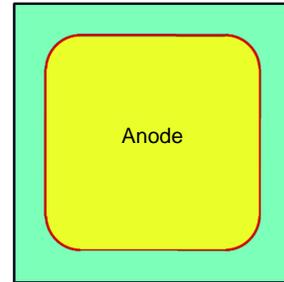
- General Purpose
- SMPS, Solar Inverter, UPS
- Power Switching Circuits

Die Information

- Wafer Diameter: 6 inch
- Die Size: 2,120 x 2,120 μm (Include S/L)
- Metallization
 - ◆ Top: Ti / TiN / Al 4 μm
 - ◆ Back: Ti/ NiV / Ag
- Die Thickness: Typ. 200 μm
- Bonding Pad Size
 - ◆ Anode: 1,540 x 1,540 μm
- Recommended Wire Bond (Note 1)
 - ◆ Anode: 15 mil x 1

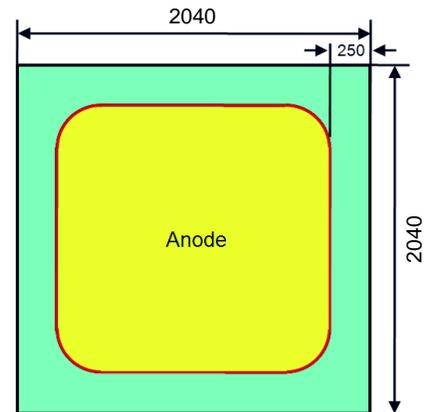
NOTE:

1. Based on TO–247 package of onsemi



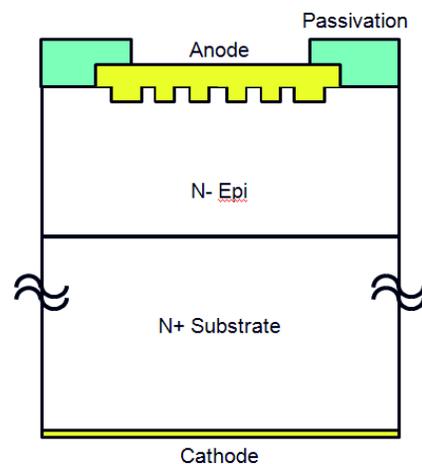
DIE LAYOUT

(Dimension: μm, Except S/L)



- Passivation Area
- Passivation Information
 - Passivation Material: Polyimide (PSPI)
 - Passivation Type: Local Passivation
 - Passivation Thickness: 90KA

CROSS SECTION



ORDERING INFORMATION

| Part Number | Package | Die Size |
|--------------|---------|-----------------------------------|
| PCFFS08120AF | N/A | 2,120 x 2,120 μm (Include S/L) |

PCFFS08120AF

ELECTRICAL CHARACTERISTICS ON WAFER ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Test Condition | Min | Typ | Max | Unit |
|--------|--------------------------|--|------|-----|-------|---------------|
| V_R | Reverse Blocking Voltage | $I_R = 200 \mu\text{A}$, $T_C = 25^\circ\text{C}$ | 1230 | - | - | V |
| V_F | Forward Voltage | $I_F = 20 \text{ A}$, $T_C = 25^\circ\text{C}$ | 1.22 | - | 1.723 | V |
| I_R | Reverse Current | $V_R = 1230 \text{ V}$, $T_C = 25^\circ\text{C}$ | - | - | 200 | μA |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

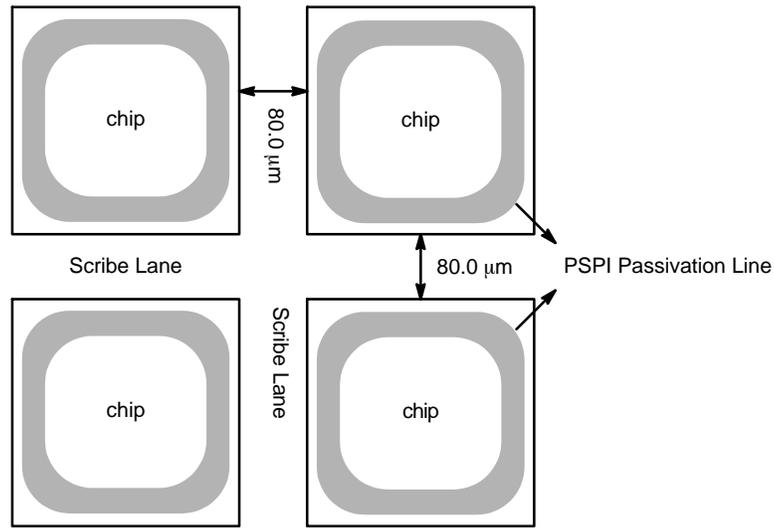
2. Tested 100% on wafer

3. F: sawn-on-film frame packing based on wafer tested

For Additional Product Information and Electrical Characteristics on Package

Refer to the [FFSH15120ADN-F155](#) product datasheet.

The Configuration of Chips (Based on 6 Inch Wafer)



Sawn-on-film frame packing based on tested wafer

Figure 1. The Configuration of Chips (Based on 6 Inch Wafer)

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