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September 2016

PCFFS10120AF

Silicon Carbide Schottky Diode

1200 V, 10 A

Features

- Max Junction Temperature 175 ^{o}C
- Avalanche Rated 105 mJ
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery / No Forward Recovery

Applications

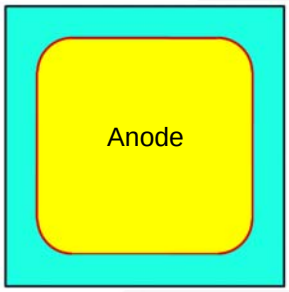
- General Purpose
- SMPS, Solar Inverter, UPS
- Power Switching Circuits

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

Die Information

- Wafer Diameter: 6 inch
- Die Size: 2,280 x 2,280 μm (include S/L)
- Metallization
  - · Top: Ti / TiN / Al 4μm
  - · Back: Ti / NiV / Ag
- Die Thickness: Typ. 200μm
- Bonding Pad Size
  - · Anode: 1700 × 1700 μm
- Recommended Wire Bond (Note 1)
  - · Anode: 15mil × 2



Electrical Characteristics on Wafer T_C = 25^{o}C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_R	Reverse Blocking Voltage	I_R = 200 μA, T_C = 25 ^{o}C	1230	-	-	V
V_F	Forward Voltage	I_F = 10 A, T_C = 25 ^{o}C	1.22	-	1.723	V
I_R	Reverse Current	V_R = 1230 V, T_C = 25 ^{o}C	-	-	200	μA

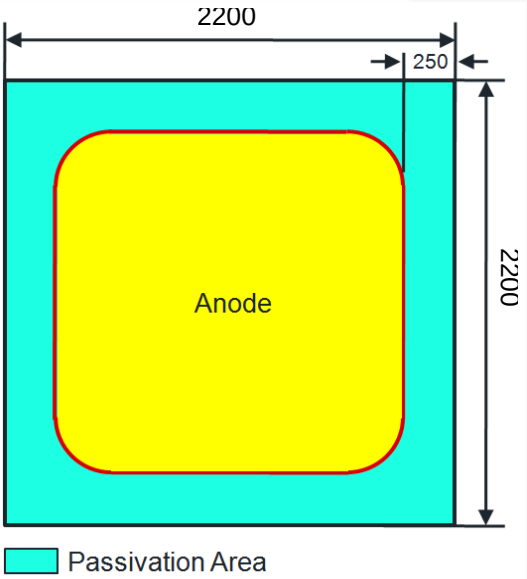
Notes:

1. Based on TO-247 package of Fairchild
2. Tested 100% on wafer
3. -F: sawn-on-film frame packing based on wafer tested

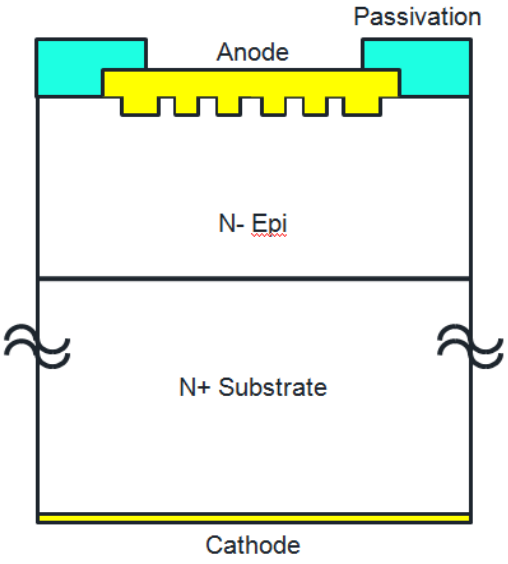
For Additional Product Information and Electrical Characteristics on Package

Refer to the *FFSH20120ADN_F155* product datasheet

Die Layout (Dimension : μm, except S/L)



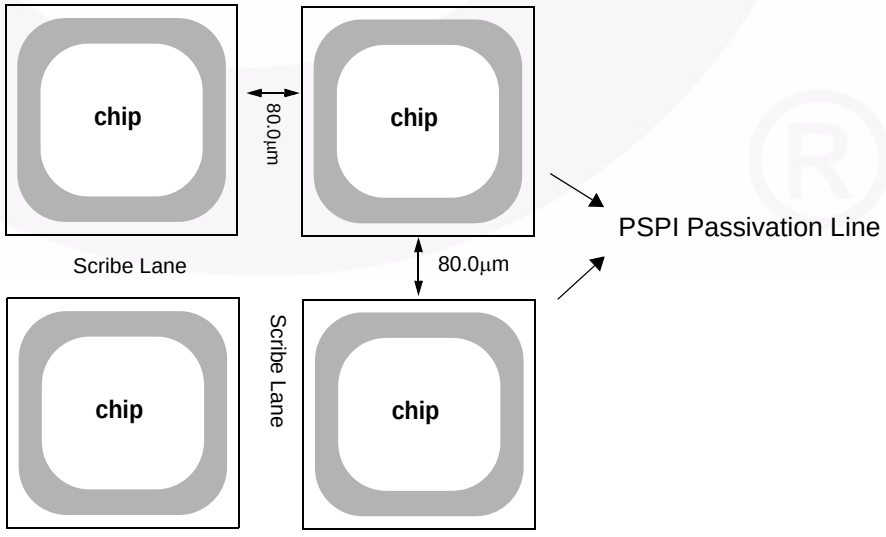
Cross Section



Passivation Information

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

The Configuration of chips (Based on 6 inch wafer)



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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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