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September 2016

# PCFFS15120AF

## Silicon Carbide Schottky Diode

### 1200 V, 15 A



PCFFS15120AF — Silicon Carbide Schottky Diode

### Features

- Max Junction Temperature 175 °C
- Avalanche Rated 145 mJ
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery / No Forward Recovery

### Description

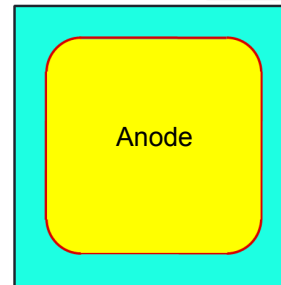
SiC Schottky Diode has no switching loss, provides improved system efficiency against Si diodes by utilizing new semiconductor material - Silicon Carbide, enables higher operating frequency, and helps increasing power density and reduction of system size/cost. Its high reliability ensures robust operation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

### Applications

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

### Die Information

- Wafer Diameter 6 inch
- Die Size 2,730 x 2,730 μm (include S/L)
- Metallization
  - Top Ti / TiN / Al 4μm
  - Back Ti / NiV / Ag
- Die Thickness Typ. 200μm
- Bonding Pad Size
  - Anode 2150 x 2150 μm
  - Anode 15mil x 2



### Electrical Characteristics on Wafer $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	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	$I_F = 15 \text{ A}, T_C = 25^\circ\text{C}$	1.22	-	1.723	V
$I_R$	Reverse Current	$V_R = 1230 \text{ V}, T_C = 25^\circ\text{C}$	-	-	200	$\mu\text{A}$

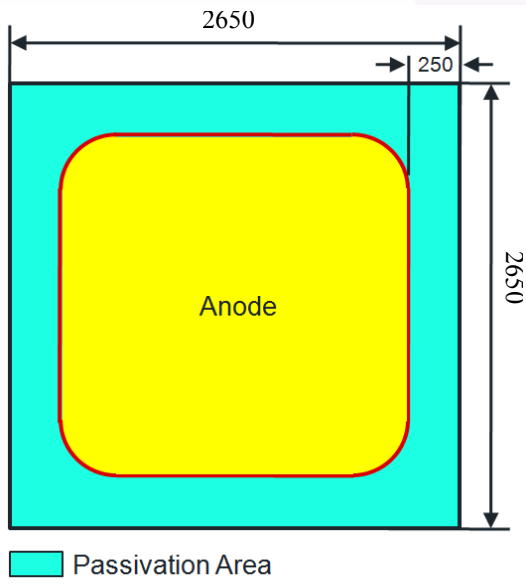
#### Notes:

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 *FFSH30120ADN\_F155* product datasheet

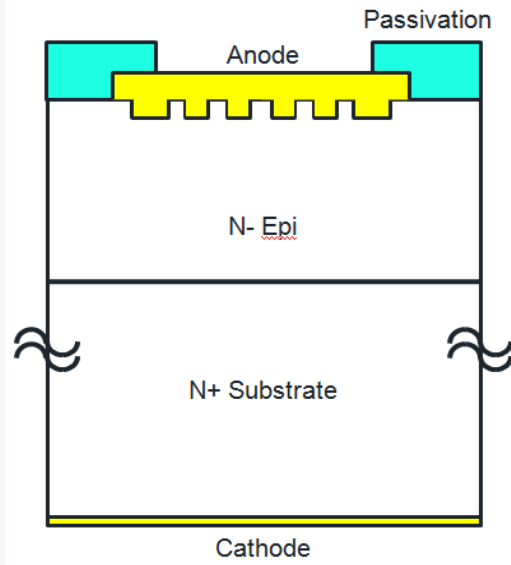
**Die Layout** (Dimension :  $\mu\text{m}$ , except S/L)



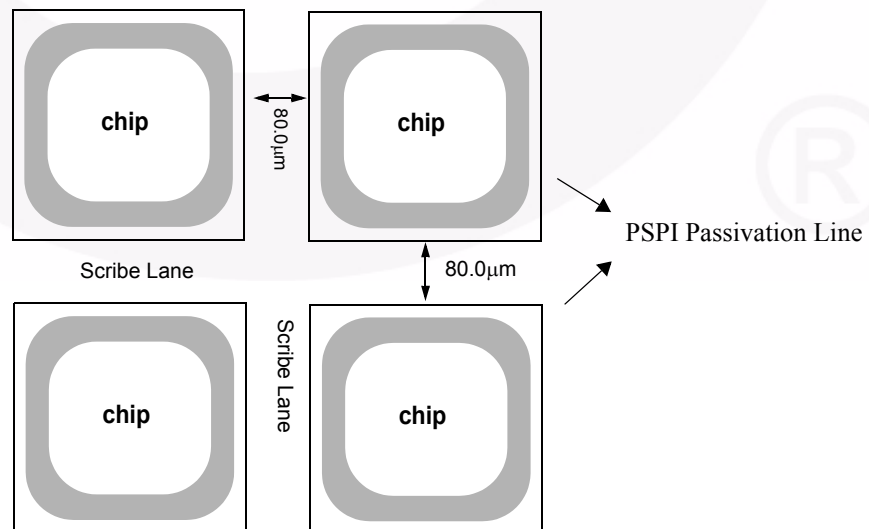
**Passivation Information**

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

**Cross Section**



**The Configuration of chips** (Based on 6 inch wafer)





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