

ON Semiconductor

Is Now

The logo for onsemi, featuring the word "onsemi" in a dark teal, lowercase, sans-serif font. The letter "i" is stylized with a white dot and a teal vertical bar. A small orange triangle is positioned above the top right of the "i". A trademark symbol (TM) is located to the right of the logo.

To learn more about onsemi™, please visit our website at
www.onsemi.com

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NGTD8R65F2

Fast Switching Rectifier Die

Fast switching low Vf rectifier die for free-wheeling applications.

Features

- Fast Switching
- Low Vf

Typical Applications

- Industrial Motor Control
- Solar PV Inverters

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Peak Reverse Voltage	V_{RRM}	650	V
Max Forward Conduction Current	I_F	(Note 1)	A
Maximum Junction Temperature	T_J	175	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Depending on thermal properties of assembly.

MECHANICAL DATA

Parameter	Value	Unit
Die Size	2817 x 2817	μm^2
Die Thickness	10	mils
Wafer Size	150	mm
Top Pad Size (Anode)	2376 x 2376	μm^2
Top Metal (Anode)	4 μm AlSi	
Back Metal (Cathode)	2 μm TiNiAg	
Max possible chips per wafer	1623	
Passivation frontside	Oxide-Nitride	
Reject ink dot size	25 mils	
Recommended storage environment: In original container, in dry nitrogen, or temperature of 18–28°C, 30–65%RH	Type: Bare Wafer in Jar Storage time: < 36 months	Type: Die on tape in ring-pack Storage time: < 3 months

ORDERING INFORMATION

Device	Inking?	Shipping
NGTD8R65F2WP	Yes	Bare Wafer in Jar
NGTD8R65F2SWK	Yes	Sawn Wafer on Tape

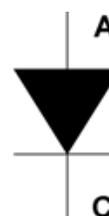


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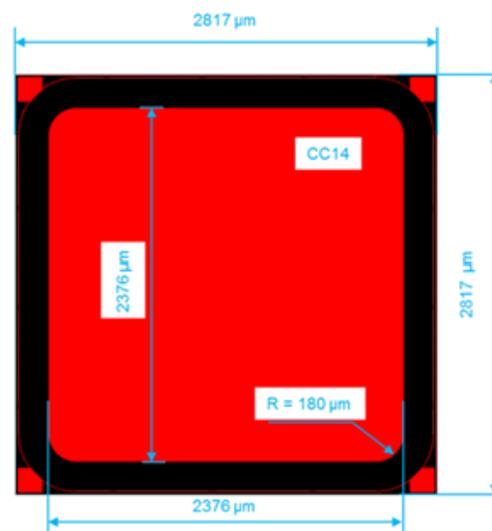
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$V_{RRM} = 650 \text{ V}$
 $I_F = \text{Limited by } T_{J(\text{max})}$

DIODE DIE



DIE OUTLINE



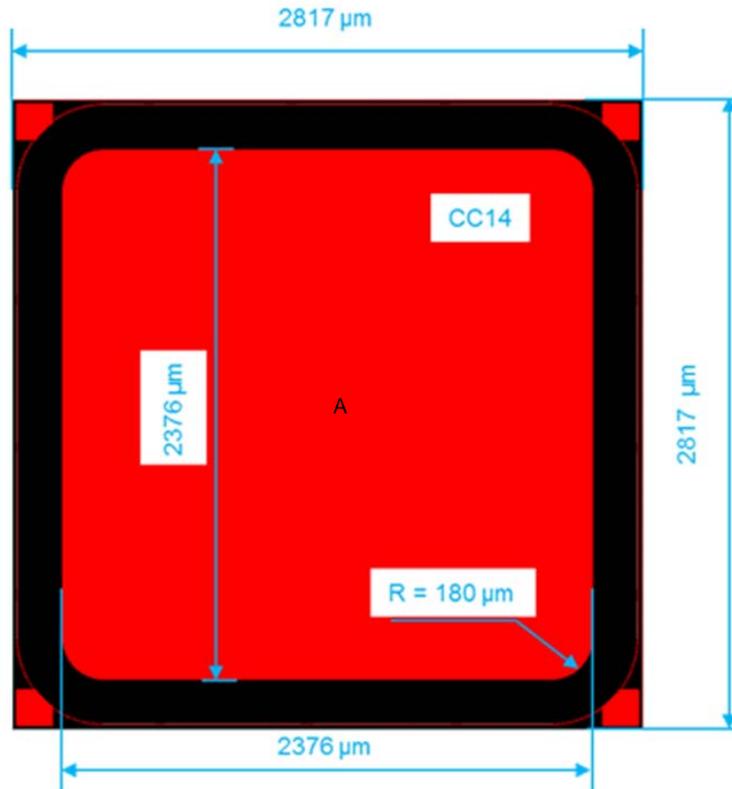
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ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Units
STATIC CHARACTERISTICS						
Forward Voltage	$I_F = 30\text{ A}$, $T_J = 25^\circ\text{C}$	V_F		2.1	2.8	V
Reverse Voltage	$I_R = 320\ \mu\text{A}$, $T_J = 25^\circ\text{C}$	V_R	650			V
Reverse Current	$V_R = 650\text{ V}$, $T_J = 25^\circ\text{C}$	I_R	-1.0		1.0	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.

DIE LAYOUT



A = Anode pad
All dimensions in μm

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Further Electrical Characteristic

Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

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