

# NGTD13R120F2

## 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	$V_{RRM}$	1200	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	4009 x 3009	$\mu\text{m}^2$
Die Thickness	5.5	mils
Wafer Size	150	mm
Top Pad Size (Anode)	3316 x 2321	$\mu\text{m}^2$
Top Metal (Anode)	4 $\mu\text{m}$ AlSi	
Back Metal (Cathode)	2 $\mu\text{m}$ TiNiAg	
Max possible chips per wafer	1000	
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
NGTD13R120F2WP	Yes	Bare Wafer in Jar
NGTD13R120F2SWK	Yes	Sawn Wafer on Tape

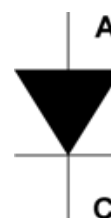


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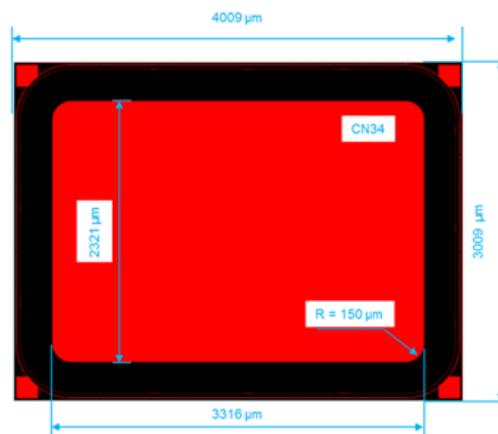
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$V_{RRM} = 1200 \text{ V}$   
 $I_F = \text{Limited by } T_{J(\text{max})}$

DIODE DIE



DIE OUTLINE



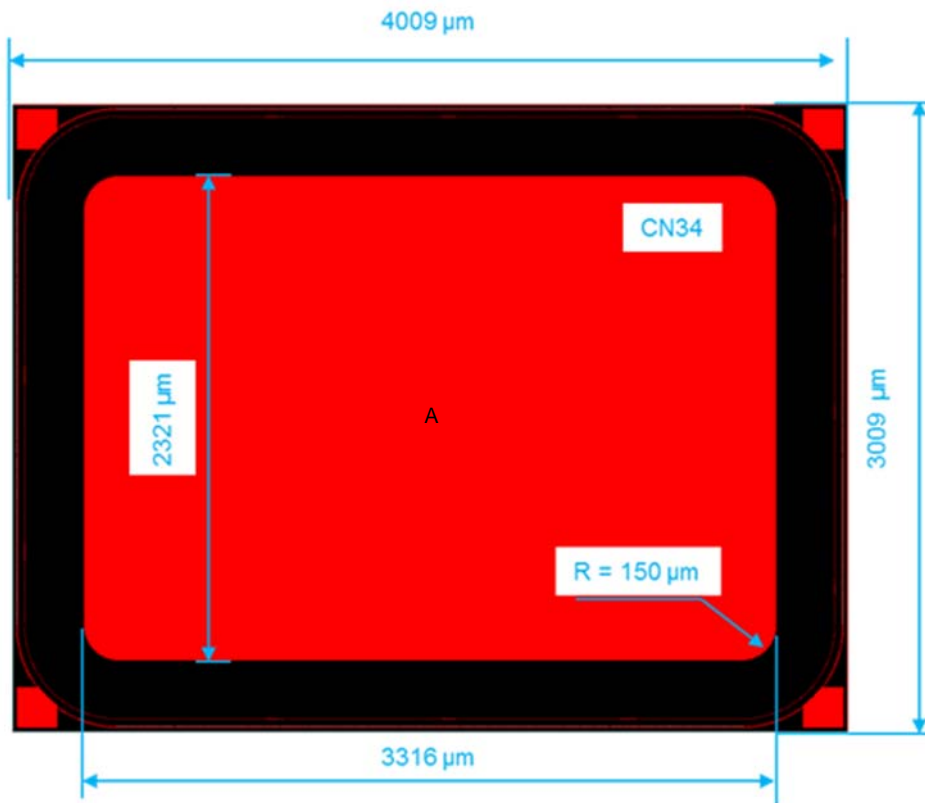
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## ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Units
<b>STATIC CHARACTERISTICS</b>						
Forward Voltage	$I_F = 25\text{ A}$ , $T_J = 25^\circ\text{C}$	$V_F$		2.1	2.6	V
Reverse Voltage	$I_R = 300\ \mu\text{A}$ , $T_J = 25^\circ\text{C}$	$V_R$	1200			V
Reverse Current	$V_R = 1200\text{ V}$ , $T_J = 25^\circ\text{C}$	$I_R$	-1.0		1.0	$\mu\text{A}$

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  $\mu\text{m}$

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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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