

Fast Switching Rectifier Die

NGTD9R120F2

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 | 2900 x 2900 | μm^2 |
| Die Thickness | 10 | mils |
| Wafer Size | 150 | mm |
| Top Pad Size (Anode) | 2263 x 2263 | μm^2 |
| Top Metal (Anode) | 4 μm AlSi | |
| Back Metal (Cathode) | 2 μm TiNiAg | |
| Max Possible Chips per Wafer | 1535 | |
| 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 |
|----------------|---------|--------------------|
| NGTD9R120F2WP | Yes | Bare Wafer in Jar |
| NGTD9R120F2SWK | Yes | Sawn Wafer on Tape |

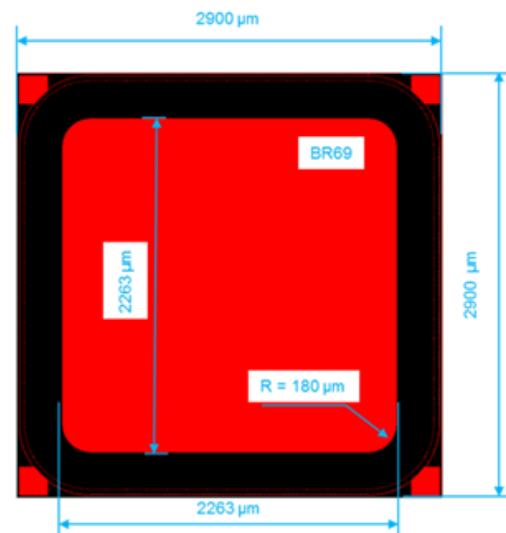
$$V_{RRM} = 1200 \text{ V}$$

$$I_F = \text{Limited by } T_{J(\text{max})}$$

DIOLE DIE



DIE OUTLINE



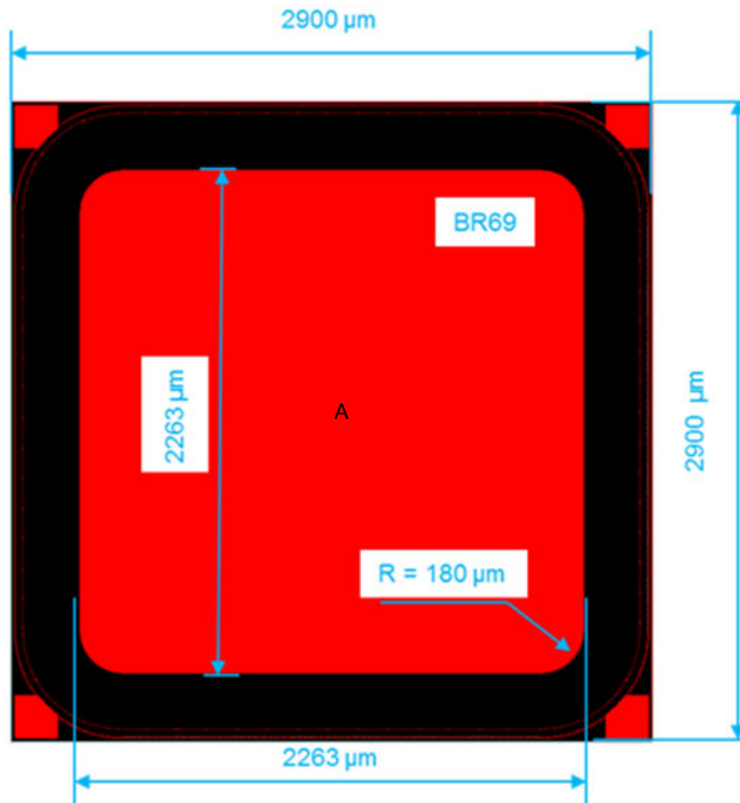
NGTD9R120F2

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

| Parameter | Test Conditions | Symbol | Min | Typ | Max | Units |
|-------------------------------|---|--------|------|-----|-----|---------------|
| STATIC CHARACTERISTICS | | | | | | |
| Forward Voltage | $I_F = 15\text{ A}$, $T_J = 25^\circ\text{C}$ | V_F | | 2.0 | 2.6 | V |
| Reverse Voltage | $I_R = 250\ \mu\text{A}$, $T_J = 25^\circ\text{C}$ | V_R | 1200 | | | V |
| Reverse Current | $V_R = 1200\text{ V}$, $T_J = 25^\circ\text{C}$ | I_R | -1.0 | | 1.0 | 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

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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