RBC100A170L2GWA

1700V - 100A - Fast Recovery Diode

R07DS1531EJ0110
Rev.1.10
Oct.18th.2024

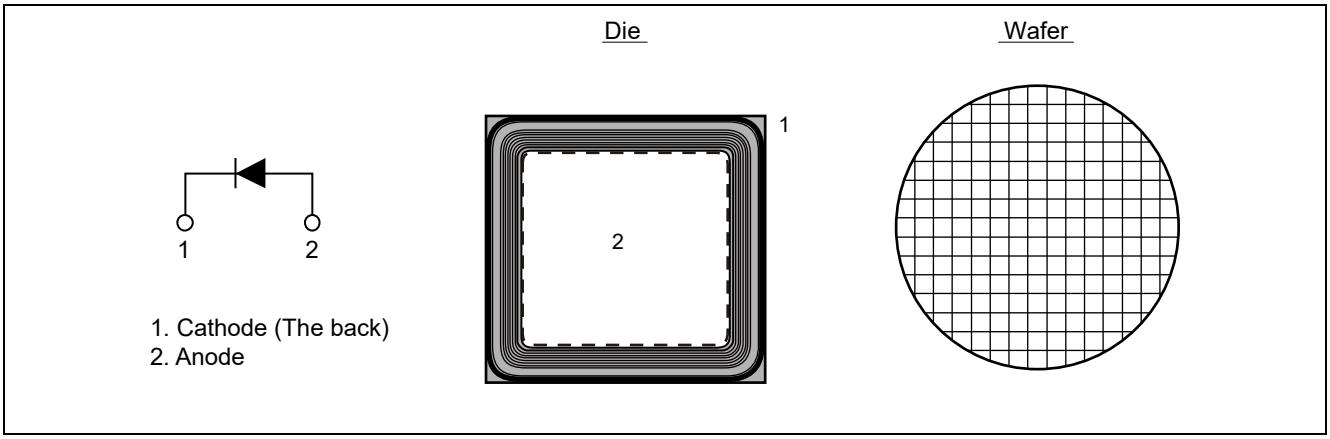
Features

- Low forward voltage
  V_F = 1.75 V typ. (at I_F = 100 A, Tj = 25 °C)
- Fast recovery (soft recovery)
- Applications: Inverter
- Unsawn wafer Wafer size: 200 mm
- Quality grade: Standard

Key performance

Product name	V_R	I_F	Die size	Package
RBC100A170L2GWA	1700 V	100 A	56.518 mm^2 (7.70 mm x 7.34 mm)	Unsawn wafer

Outline



Mechanical Parameters

Die size	7.70 x 7.34	mm
Area total	56.518	mm^2
Thickness	0.195 typ.	mm
Wafer size	193.9	mm
Passivation front side	Polyimide	
Pad metal	AlSi – 5.5 μm	
Backside metal	Ni/Au	

Absolute Maximum Ratings

(Tj = 25 °C unless otherwise noted)

Item	Symbol	Ratings	Unit
Maximum reverse voltage	V_{RM}	1700	V
Forward current	I_F	— Notes1	A
Junction temperature	Tj	175 Notes2	°C

Notes: 1. Depends on thermal properties of assembly. Tj = 175 °C.
2. Please use this device in the thermal conditions which the junction temperature does not exceed 175 °C.
3. Continuous heavy condition (e.g. high temperature/voltage/current or high variation of temperature) may affect a reliability even if it is within the absolute maximum ratings. Please consider derating condition for appropriate reliability in reference Renesas Semiconductor Reliability Handbook (Recommendation for Handling and Usage of Semiconductor Devices) and individual reliability data.

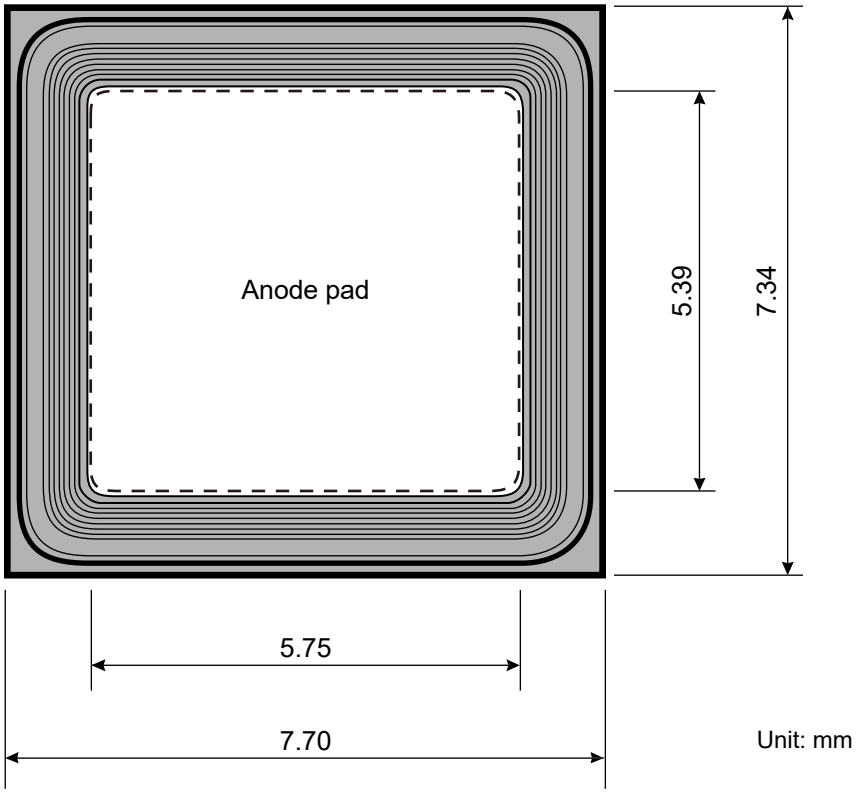
Electrical Characteristics

(Tj = 25 °C unless otherwise noted)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Forward voltage	V_F	—	1.75	2.15	V	I_F = 100 A Notes4, 5, 6
Reverse current	I_R	—	—	10	μA	V_R = 1700 V Notes5
Reverse voltage	V_R	1700	—	—	V	I_R = 100 μA Notes5

Notes: 4. Pulse test
5. Tested on wafer
6. Designed target value on Renesas measurement condition. (Not tested)
7. Characteristic items prescribed in this document will guarantee the electrical characteristics in chip state but not the characteristic fluctuations or characteristic defects that occur in the processes after assembling.
8. Switching characteristics is depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

Die Dimension



Notes 1.

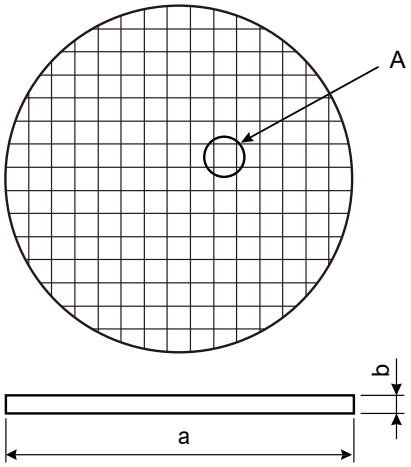
Illustration	Definition
Part of white	Al pattern
Part of dotted line	Bonding area
Part of gray	Final passivation

Notes 2. The back of the chip is processed with Au evaporation.

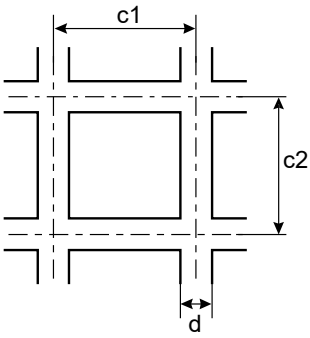
Notes 3. Recognition, target and any other patterns which are not related to FRD operation, may be changed without notice.

Wafer Dimension

Wafer dimension

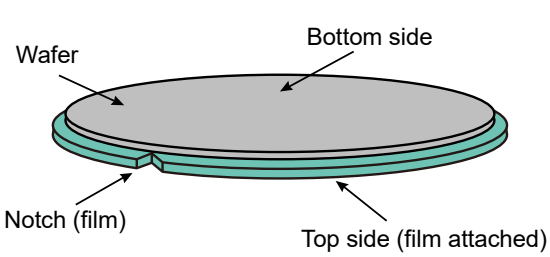


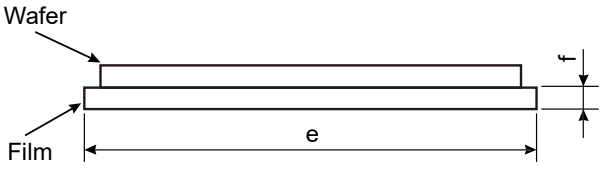
A Enlargement



Item	Symbol	Dimensions (mm)
Wafer diameter	a	193.9
Wafer thickness	b	0.195
Chip pitch	c1	7.70
	c2	7.34
Scribe grid	d	0.076

Outline of film attached Wafer (at delivery)





Film dimension (e) : 200 mm
Film thickness (f) : 0.12 mm to 0.16 mm

Ordering Information

Ordering Part Number	Shipment Form	Ordering Quantity Unit
RBC100A170L2GWA-8F0#FF0	Unsawn wafer	11500 (25 wafers)

Note. The order quantities indicate the maximum quantity of chips for each part number, and the actual quantity of chips shipped will be reduced due to yield. These is also a possibility that the number of wafers may decrease during the manufacturing process. The quantity shipped will be indicated on the label as the number of good chips.

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