

|                               |        |
|-------------------------------|--------|
| $V_{RM}$                      | 650V   |
| $I_F$ (Nominal)               | 150A   |
| $V_F$ (Typ.)                  | 1.45V  |
| Max. Possible Chips per Wafer | 755pcs |

### ●Features

- 1) Light Punch Through Type
- 2) Low Forward Voltage
- 3) Very Fast & Soft Recovery
- 4) Low Recovery Loss

### ●Application

Free Wheeling

### ●Absolute Maximum Ratings

| Parameter                                                 | Symbol        | Value       | Unit             |
|-----------------------------------------------------------|---------------|-------------|------------------|
| Repetitive Peak Reverse Voltage, $T_j = 25^\circ\text{C}$ | $V_{RM}$      | 650         | V                |
| Forward Current                                           | $I_F^{*1}$    | $^{*1)}$    | A                |
| Pulsed Forward Current                                    | $I_{FP}^{*2}$ | 600         | A                |
| Operating Junction Temperature                            | $T_j$         | -40 to +175 | $^\circ\text{C}$ |

\*1 Depending on thermal properties of assembly

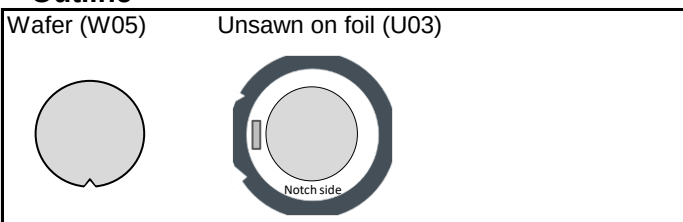
\*2 Pulse width limited by  $T_{jmax}$ .

### ●Electrical Characteristics (at $T_j = 25^\circ\text{C}$ unless otherwise specified)

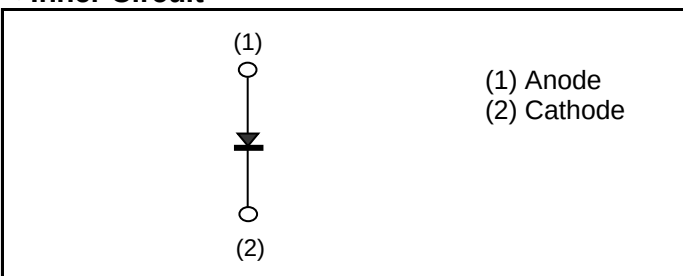
| Parameter         | Symbol     | Conditions                                        | Values |      |      | Unit          |
|-------------------|------------|---------------------------------------------------|--------|------|------|---------------|
|                   |            |                                                   | Min.   | Typ. | Max. |               |
| Breakdown Voltage | BV         | $I_R = 10\mu\text{A}$                             | 650    | -    | -    | V             |
| Reverse Current   | $I_R$      | $V_R = 650\text{V}$                               | -      | -    | 10   | $\mu\text{A}$ |
| Forward Voltage   | $V_F^{*3}$ | $I_F = 150\text{A}$ ,<br>$T_j = 25^\circ\text{C}$ | -      | 1.45 | 1.9  | V             |
|                   |            | $T_j = 175^\circ\text{C}$                         | -      | 1.55 | -    |               |

\*3 Design assurance without measurement

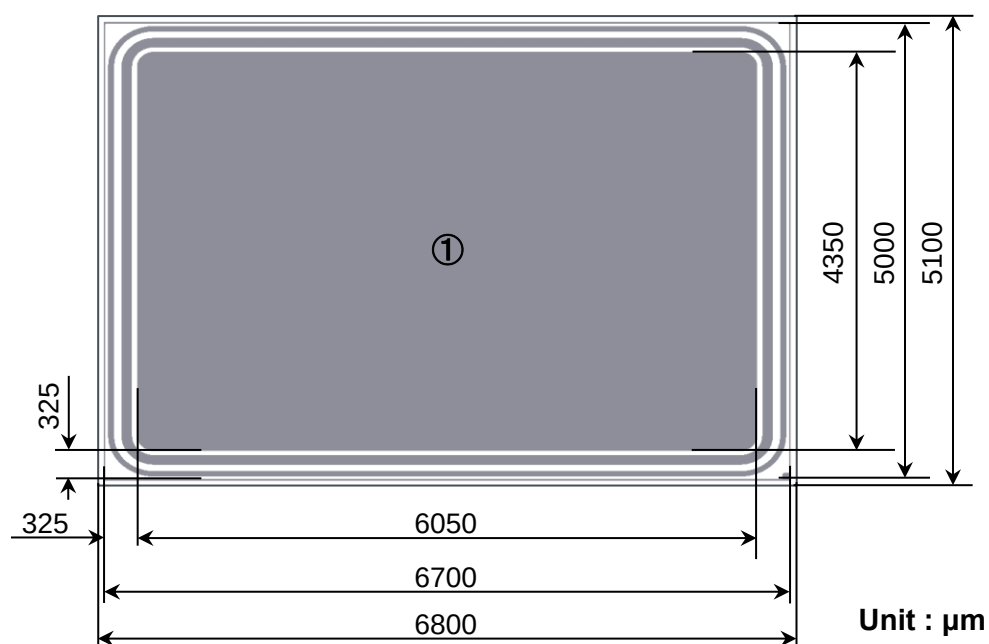
### ●Outline



### ●Inner Circuit



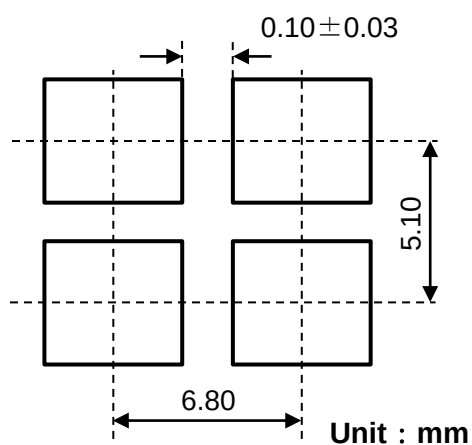
### ●Chip Information



■ : Pad Area

① : Anode Bonding Pad

Backside : Cathode



|                         |                       |
|-------------------------|-----------------------|
| Wafer Size              | 200mm                 |
| Wafer Thickness         | 0.07±0.01mm           |
| Chip Size               | 6.80mm×5.10mm         |
| Cut Line Width          | 0.10±0.03mm           |
| Top Side Metallization  | AlSiCu:5.0μm          |
| Back Side Metallization | Ti/Ni:0.4μm/Au:0.05μm |
| Passivation             | Polyimide             |

### ●Further Electrical Characteristics

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

This chip data sheet refers to the device data sheet

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Technology qualified in TO-247N package.

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