

# SIDC05D65C8

## Fast switching diode chip in EMCON 3 -Technology

### Features:

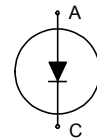
- 650V EMCON 3 technology 65 µm chip
- Soft, fast switching
- Low reverse recovery charge
- Small temperature coefficient
- Qualified according to JEDEC for target applications

### Recommended for:

- Power module
- Discrete components

### Applications:

- Drives
- White goods
- Resonant applications



| Chip Type   | $V_R$ | $I_{Fn}^{1)}$ | Die Size                   | Package      |
|-------------|-------|---------------|----------------------------|--------------|
| SIDC05D65C8 | 650V  | 15A           | 1.9 x 2.37 mm <sup>2</sup> | sawn on foil |

<sup>1)</sup> nominal forward current at  $T_c = 100^\circ\text{C}$ , not subject to production test - verified by design/characterisation

### Mechanical Parameters

| Mechanical Parameters         |                                                    |                                                                                                                |
|-------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Die size                      | 1.9 x 2.37                                         | mm <sup>2</sup>                                                                                                |
| Area total                    | 4.5                                                |                                                                                                                |
| Anode pad size                | 1.15 x 1.45                                        |                                                                                                                |
| Thickness                     | 65                                                 | µm                                                                                                             |
| Wafer size                    | 200                                                | mm                                                                                                             |
| Max. possible chips per wafer | 6224                                               |                                                                                                                |
| Passivation frontside         | Photoimide                                         |                                                                                                                |
| Pad metal                     | 3200 nm AlSiCu                                     |                                                                                                                |
| Backside metal                | Ni Ag –system                                      |                                                                                                                |
| Die bond                      | Electrically conductive epoxy glue and soft solder |                                                                                                                |
| Wire bond                     | Al, ≤500µm                                         |                                                                                                                |
| Reject ink dot size           | Ø 0.65mm; max 1.2mm                                |                                                                                                                |
| Storage environment           | for original and sealed MBB bags                   | Ambient atmosphere air, Temperature 17°C – 25°C, < 6 month                                                     |
|                               | for open MBB bags                                  | Acc. to IEC62258-3: Atmosphere >99% Nitrogen or inert gas, Humidity <25%RH, Temperature 17°C – 25°C, < 6 month |



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## Maximum Ratings

| Parameter                                        | Symbol    | Condition                | Value         | Unit |
|--------------------------------------------------|-----------|--------------------------|---------------|------|
| Repetitive peak reverse voltage                  | $V_{RRM}$ | $T_{vj} = 25\text{ °C}$  | 650           | V    |
| Continuous forward current                       | $I_F$     | $T_{vj} < 150\text{ °C}$ | <sup>1)</sup> | A    |
| Maximum repetitive forward current <sup>2)</sup> | $I_{FRM}$ | $T_{vj} < 150\text{ °C}$ | 30            |      |
| Operating junction temperature                   | $T_{vj}$  |                          | -40...+175    | °C   |

<sup>1)</sup> depending on thermal properties of assembly

<sup>2)</sup> not subject to production test - verified by design/characterisation

## Static Characteristics (tested on wafer), $T_{vj} = 25\text{ °C}$

| Parameter                       | Symbol   | Conditions             | Value |      |      | Unit |
|---------------------------------|----------|------------------------|-------|------|------|------|
|                                 |          |                        | min.  | typ. | max. |      |
| Reverse leakage current         | $I_R$    | $V_R = 650\text{ V}$   |       |      | 0.18 | µA   |
| Cathode-Anode breakdown Voltage | $V_{BR}$ | $I_R = 0.25\text{ mA}$ | 650   |      |      | V    |
| Forward voltage drop            | $V_F$    | $I_F = 15\text{ A}$    | 1.23  | 1.55 | 1.87 |      |

## Electrical Characteristics (not subject to production test - verified by design/characterization)

| Parameter            | Symbol | Conditions                                  | Value |      |      | Unit |
|----------------------|--------|---------------------------------------------|-------|------|------|------|
|                      |        |                                             | min.  | typ. | max. |      |
| Forward voltage drop | $V_F$  | $I_F = 15\text{ A}, T_{vj} = 150\text{ °C}$ |       | 1.5  |      | V    |

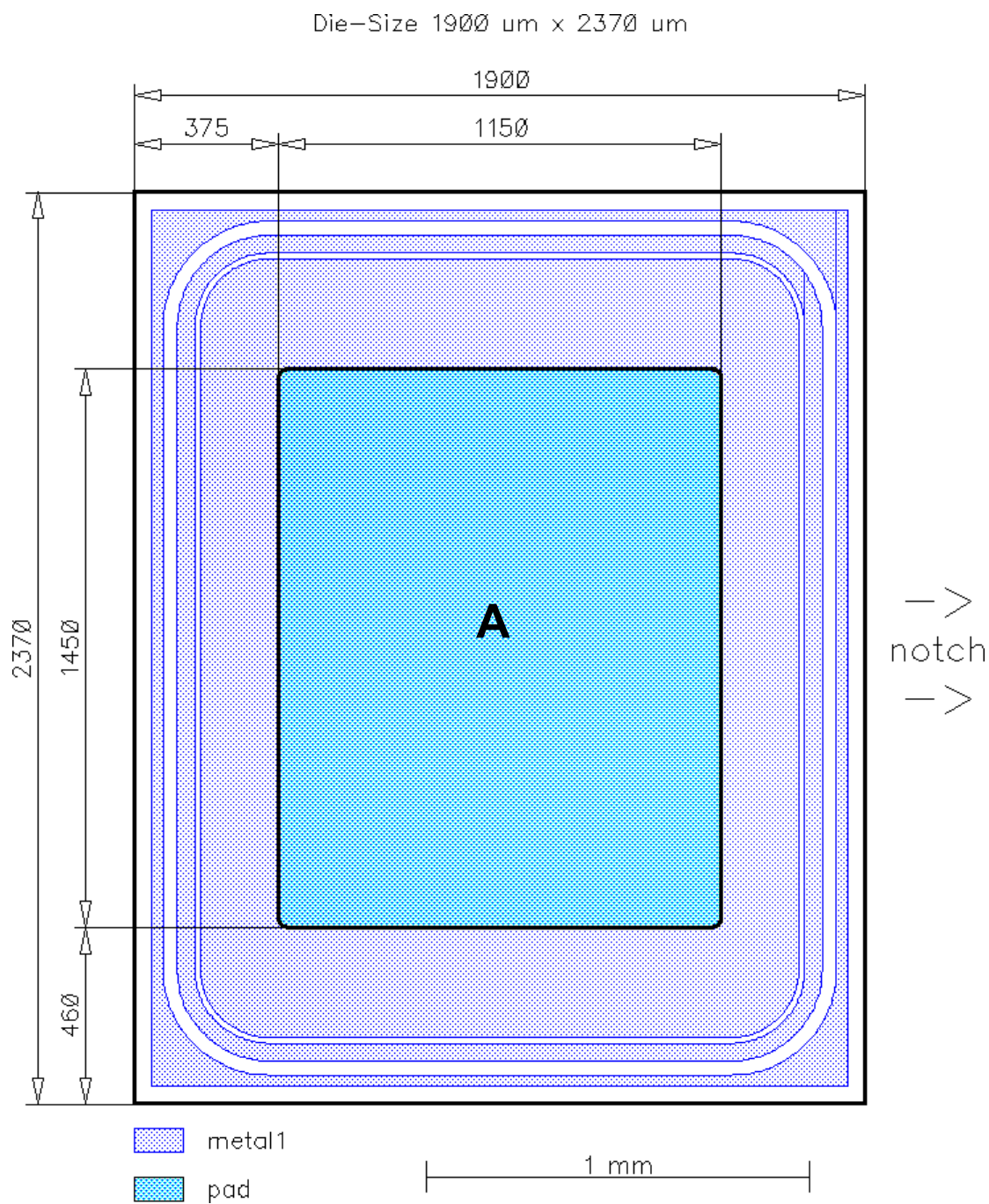
## Further Electrical Characteristics

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 | tbd | tbd |
|------------------------------------------------------|-----|-----|

# SIDC05D65C8

## Chip Drawing



A: Anode pad



# SIDC05D65C8

## Description

AQL 0,65 for visual inspection according to failure catalogue

Electrostatic Discharge Sensitive Device according to MIL-STD 883

## Revision History

| Version | Subjects (major changes since last revision) | Date |
|---------|----------------------------------------------|------|
|         |                                              |      |
|         |                                              |      |

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