

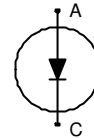
Fast switching diode chip in EMCON-Technology

**FEATURES:**

- 600V EMCON technology 70 µm chip
- soft , fast switching
- low reverse recovery charge
- small temperature coefficient

**This chip is used for:**

- EUPEC power modules and discrete devices



**Applications:**

- SMPS, resonant applications, drives

| Chip Type   | V <sub>R</sub> | I <sub>F</sub> | Die Size              | Package      | Ordering Code     |
|-------------|----------------|----------------|-----------------------|--------------|-------------------|
| SIDC81D60E6 | 600V           | 200A           | 9 x 9 mm <sup>2</sup> | sawn on foil | Q67050-A4012-A001 |

**MECHANICAL PARAMETER:**

|                                 |  |                 |
|---------------------------------|--|-----------------|
| Raster size                     | 9 x 9  | mm <sup>2</sup> |
| Area total / active             | 81 / 69.39   |                 |
| Anode pad size                  | 8.28 x 8.28  |                 |
| Thickness                       | 70   | µm              |
| Wafer size                      | 150  | mm              |
| Flat position                   | 180  | deg             |
| Max. possible chips per wafer   | 169 pcs  |                 |
| Passivation frontside           | Photoimide   |                 |
| Anode metallisation             | 3200 nm AlSiCu   |                 |
| Cathode metallisation           | 1400 nm Ni Ag –system<br>suitable for epoxy and soft solder die bonding                      |                 |
| Die bond                        | electrically conductive glue or solder   |                 |
| Wire bond                       | Al, ≤500µm   |                 |
| Reject Ink Dot Size             | Ø 0.65mm ; max 1.2mm   |                 |
| Recommended Storage Environment | store in original container, in dry nitrogen,<br>< 6 month at an ambient temperature of 23°C |                 |

## Maximum Ratings

| Parameter  | Symbol         | Condition                       | Value      | Unit |
|--|----------------|---------------------------------|------------|------|
| Repetitive peak reverse voltage  | $V_{RRM}$      |                                 | 600        | V    |
| Continuous forward current limited by $T_{jmax}$                       | $I_F$          |                                 | 200        | A    |
| Single pulse forward current<br>(depending on wire bond configuration) | $I_{FSM}$      | $t_P = 10\text{ ms sinusoidal}$ | tbd        |      |
| Maximum repetitive forward current limited by $T_{jmax}$               | $I_{FRM}$      |                                 | 600        |      |
| Operating junction and storage temperature                             | $T_j, T_{stg}$ |                                 | -55...+150 | °C   |

## Static Electrical Characteristics (tested on chip), $T_j=25^\circ\text{C}$ , unless otherwise specified

| Parameter                       | Symbol   | Conditions                                  | Value |      |      | Unit          |
|---------------------------------|----------|---|-------|------|------|---------------|
|                                 |          |   | min.  | Typ. | max. |               |
| Reverse leakage current         | $I_R$    | $V_R=600\text{V}$<br>$T_j=25^\circ\text{C}$ |       |      | 27   | $\mu\text{A}$ |
| Cathode-Anode breakdown Voltage | $V_{Br}$ | $I_R=4\text{mA}$<br>$T_j=25^\circ\text{C}$  | 600   |      |      | V             |
| Forward voltage drop            | $V_F$    | $I_F=200\text{A}$<br>$T_j=25^\circ\text{C}$ |       | 1.25 |      | V             |

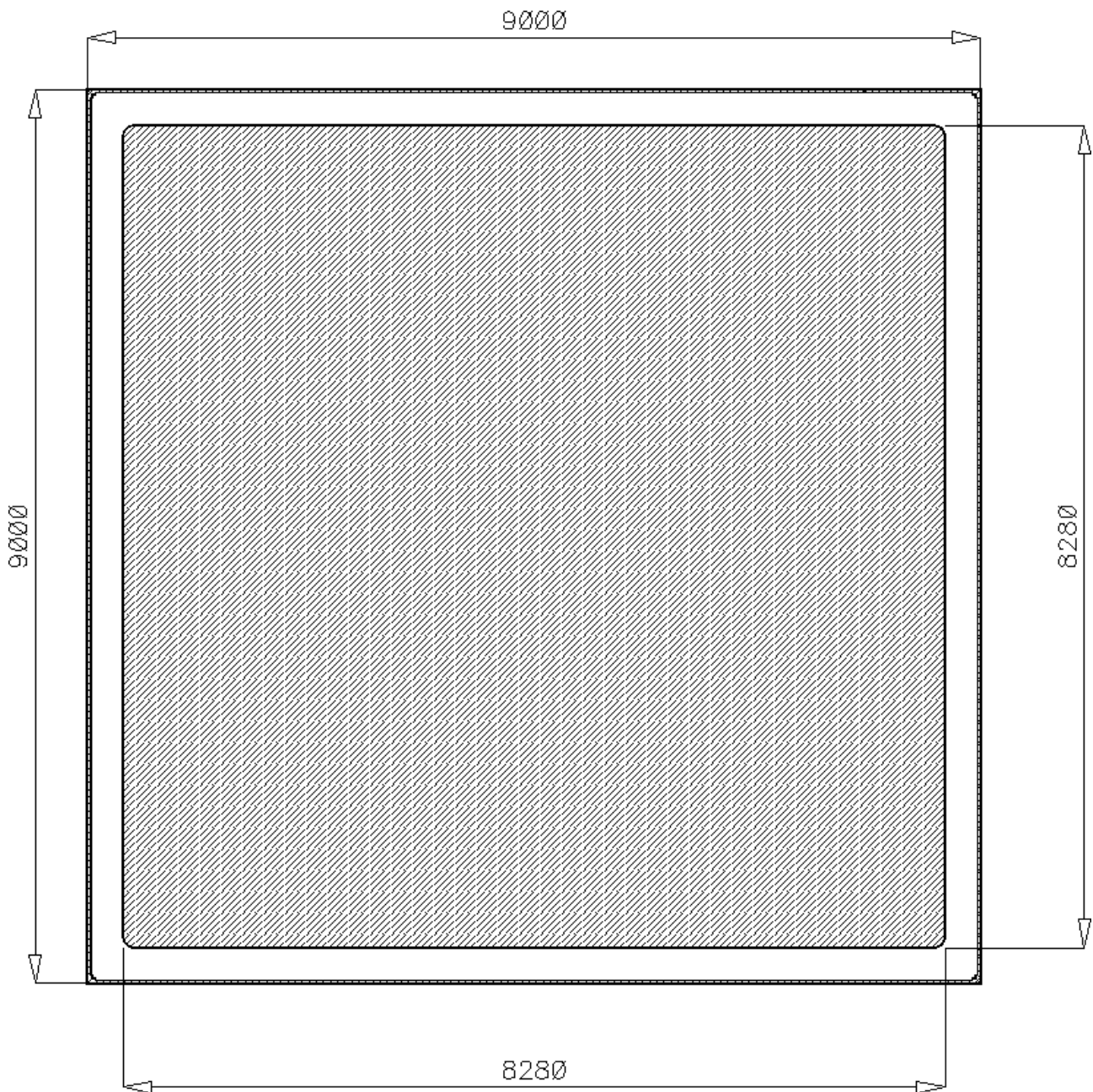
## Dynamic Electrical Characteristics, at $T_j = 25^\circ\text{C}$ , unless otherwise specified, tested at component


| Parameter                                     | Symbol        | Conditions  | Value |       |      | Unit             |
|---|---------------|---|-------|-------|------|------------------|
|   |               |   | min.  | Typ.  | max. |                  |
| Reverse recovery time                         | $t_{rr1}$     | $I_F=200\text{A}$<br>$T_j = 25^\circ\text{C}$                                       |       | tbd   |      | ns               |
|   | $t_{rr2}$     | $di/dt=4000\text{A}/\mu\text{s}$<br>$V_R=300\text{V}$<br>$T_j = 125^\circ\text{C}$  |       |       |      |                  |
| Peak recovery current                         | $I_{RRM1}$    | $I_F=200\text{A}$<br>$T_j = 25^\circ\text{C}$                                       |       | 247.7 |      | A                |
|   | $I_{RRM2}$    | $di/dt=4000\text{A}/\mu\text{s}$<br>$V_R= 300\text{V}$<br>$T_j = 125^\circ\text{C}$ |       | 300   |      |                  |
| Reverse recovery charge                       | $Q_{rr1}$     | $I_F=200\text{A}$<br>$T_j=25^\circ\text{C}$   |       | 13.1  |      | $\mu\text{C}$    |
|   | $Q_{rr2}$     | $di/dt=4000\text{A}/\mu\text{s}$<br>$V_R= 300\text{V}$<br>$T_j=125^\circ\text{C}$   |       | 21.8  |      |                  |
| Peak rate of fall of reverse recovery current | $di_{rr1}/dt$ | $I_F=200\text{A}$<br>$T_j = 25^\circ\text{C}$                                       |       | tbd   |      | A/ $\mu\text{s}$ |
|   | $di_{rr2}/dt$ | $di/dt=4000\text{A}/\mu\text{s}$<br>$V_R= 300\text{V}$<br>$T_j=125^\circ\text{C}$   |       |       |      |                  |
| Softness                                      | S1            | $I_F=200\text{A}$<br>$T_j=25^\circ\text{C}$   |       | tbd   |      | 1                |
|   | S2            | $di/dt=4000\text{A}/\mu\text{s}$<br>$V_R= 300\text{V}$<br>$T_j=125^\circ\text{C}$   |       |       |      |                  |

CHIP DRAWING:

L42ØB1

Die-Size 9000 um x 9000 um



 imide

1 mm



Flat



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**FURTHER ELECTRICAL CHARACTERISTICS:**

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This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES /  
EUPEC

tbd

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**Description:**

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AQL 0,65 for visual inspection according to failure catalog

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Electrostatic Discharge Sensitive Device according to MIL-STD 883

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Test-Normen Villach/Prüffeld

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