

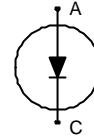
Fast switching diode chip in EMCON-Technology

**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     |
|-------------|----------------|----------------|-----------------------------|--------------|-------------------|
| SIDC07D60F6 | 600V           | 22.5A          | 2.12 x 3.41 mm <sup>2</sup> | sawn on foil | Q67050-A4039-A001 |

**MECHANICAL PARAMETER:**

|                                 |                                                                                              |                 |
|---------------------------------|----------------------------------------------------------------------------------------------|-----------------|
| Raster size                     | 2.12 x 3.41                                                                                  | mm <sup>2</sup> |
| Area total / active             | 7.23 / 5.12                                                                                  |                 |
| Anode pad size                  | 1.63 x 2.92                                                                                  |                 |
| Thickness                       | 70                                                                                           | µm              |
| Wafer size                      | 150                                                                                          | mm              |
| Flat position                   | 180                                                                                          | deg             |
| Max. possible chips per wafer   | 2000 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 $T_{jmax}$                                                   | $I_F$          |                                 | 22.5       | 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 $T_{jmax}$<br>(depending on wire bond configuration) | $I_{FRM}$      |                                 | 45         |      |
| Operating junction and storage temperature                                                         | $T_j, T_{stg}$ |                                 | -55...+150 | °C   |

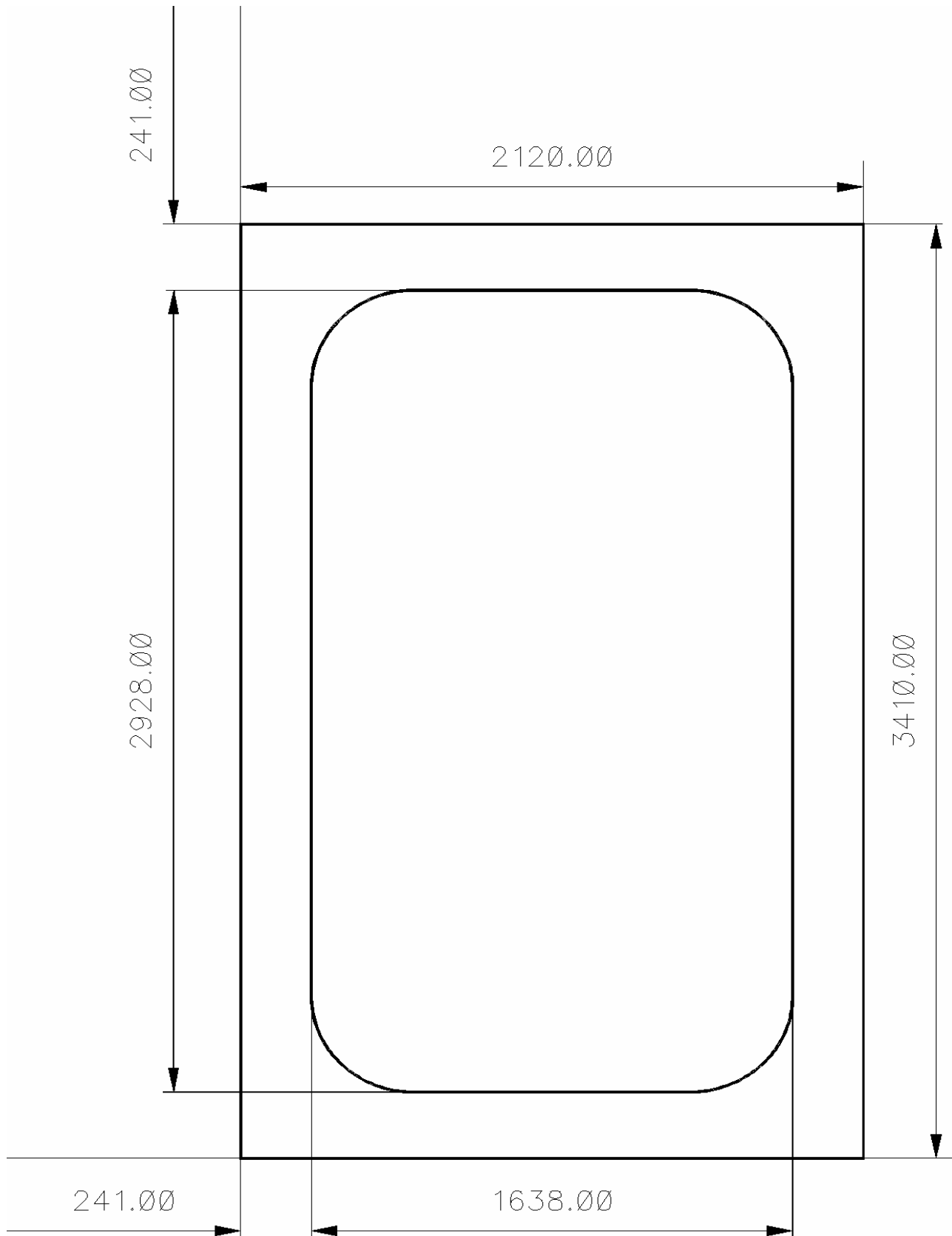
**Static Electrical Characteristics** (tested on chip),  $T_j=25\text{ °C}$ , unless otherwise specified

| Parameter                       | Symbol   | Conditions          |                    | Value |      |      | Unit |
|---------------------------------|----------|---------------------|--------------------|-------|------|------|------|
|                                 |          |                     |                    | min.  | Typ. | max. |      |
| Reverse leakage current         | $I_R$    | $V_R=600\text{ V}$  | $T_j=25\text{ °C}$ |       |      | 27   | µA   |
| Cathode-Anode breakdown Voltage | $V_{Br}$ | $I_R=1.5\text{ mA}$ | $T_j=25\text{ °C}$ | 600   |      |      | V    |
| Forward voltage drop            | $V_F$    | $I_F=22.5\text{ A}$ | $T_j=25\text{ °C}$ |       | 1.45 |      | V    |

**Dynamic Electrical Characteristics**, at  $T_j = 25\text{ °C}$ , unless otherwise specified, tested at component

| Parameter                                     | Symbol        | Conditions                                      |                       | Value |      |      | Unit |
|-----------------------------------------------|---------------|-------------------------------------------------|-----------------------|-------|------|------|------|
|                                               |               |                                                 |                       | min.  | Typ. | max. |      |
| Reverse recovery time                         | $t_{rr1}$     | $I_F=22.5\text{ A}$                             | $T_j = 25\text{ °C}$  |       | 120  |      | ns   |
|                                               | $t_{rr2}$     | $di/dt=1000\text{ A/ms}$<br>$V_R=400\text{ V}$  | $T_j = 150\text{ °C}$ |       | 170  |      |      |
| Peak recovery current                         | $I_{RRM1}$    | $I_F=22.5\text{ A}$                             | $T_j = 25\text{ °C}$  |       | 17   |      | A    |
|                                               | $I_{RRM2}$    | $di/dt=1000\text{ A/ms}$<br>$V_R= 400\text{ V}$ | $T_j = 150\text{ °C}$ |       | 21.5 |      |      |
| Reverse recovery charge                       | $Q_{rr1}$     | $I_F=22.5\text{ A}$                             | $T_j=25\text{ °C}$    |       | 970  |      | nC   |
|                                               | $Q_{rr2}$     | $di/dt=1000\text{ A/ms}$<br>$V_R= 400\text{ V}$ | $T_j= 150\text{ °C}$  |       | 1770 |      |      |
| Peak rate of fall of reverse recovery current | $di_{rr1}/dt$ | $I_F=22.5\text{ A}$                             | $T_j = 25\text{ °C}$  |       |      |      | A/µs |
|                                               | $di_{rr2}/dt$ | $di/dt=1000\text{ A/ms}$<br>$V_R= 400\text{ V}$ | $T_j= 150\text{ °C}$  |       |      |      |      |
| Softness                                      | S1            | $I_F=22.5\text{ A}$                             | $T_j=25\text{ °C}$    |       | 4.4  |      | 1    |
|                                               | S2            | $di/dt=1000\text{ A/ms}$<br>$V_R= 400\text{ V}$ | $T_j= 150\text{ °C}$  |       | 5    |      |      |

CHIP DRAWING:





Preliminary

SIDC07D60F6

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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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