

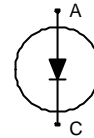
Fast switching diode chip in EMCON 3-Technology

FEATURES:

- 1700V EMCON 3 technology 200 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- EUPEC power modules



Applications:

- resonant applications, drives

| Chip Type | V _R | I _F | Die Size | Package | Ordering Code |
|--------------|----------------|----------------|-----------------------------|--------------|-------------------|
| SIDC161D170H | 1700V | 300A | 12.7 x 12.7 mm ² | sawn on foil | Q67050-A4180-A001 |

MECHANICAL PARAMETER:

| | | |
|---------------------------------|--|-----------------|
| Raster size | 12.7 x 12.7 | mm ² |
| Area total / active | 161.29 / 137.69 | |
| Anode pad size | 10.68 x 10.68 | |
| Thickness | 200 | µm |
| Wafer size | 150 | mm |
| Flat position | 180 | deg |
| Max. possible chips per wafer | 80 pcs | |
| Passivation frontside | Photoimide | |
| Anode metallization | 3200 nm Al Si Cu | |
| Cathode metallization | Ni Ag –system 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, < 6 month at an ambient temperature of 23°C | |

Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|--|----------------|---------------------------------|------------|------|
| Repetitive peak reverse voltage | V_{RRM} | | 1700 | V |
| Continuous forward current limited by T_{jmax} | I_F | | 300 | A |
| Single pulse forward current (depending on wire bond configuration) | I_{FSM} | $t_p = 10\text{ ms sinusoidal}$ | 1250 | |
| Maximum repetitive forward current limited by T_{jmax} | I_{FRM} | | 600 | |
| Operating junction and storage temperature | T_j, T_{stg} | | -55...+150 | °C |

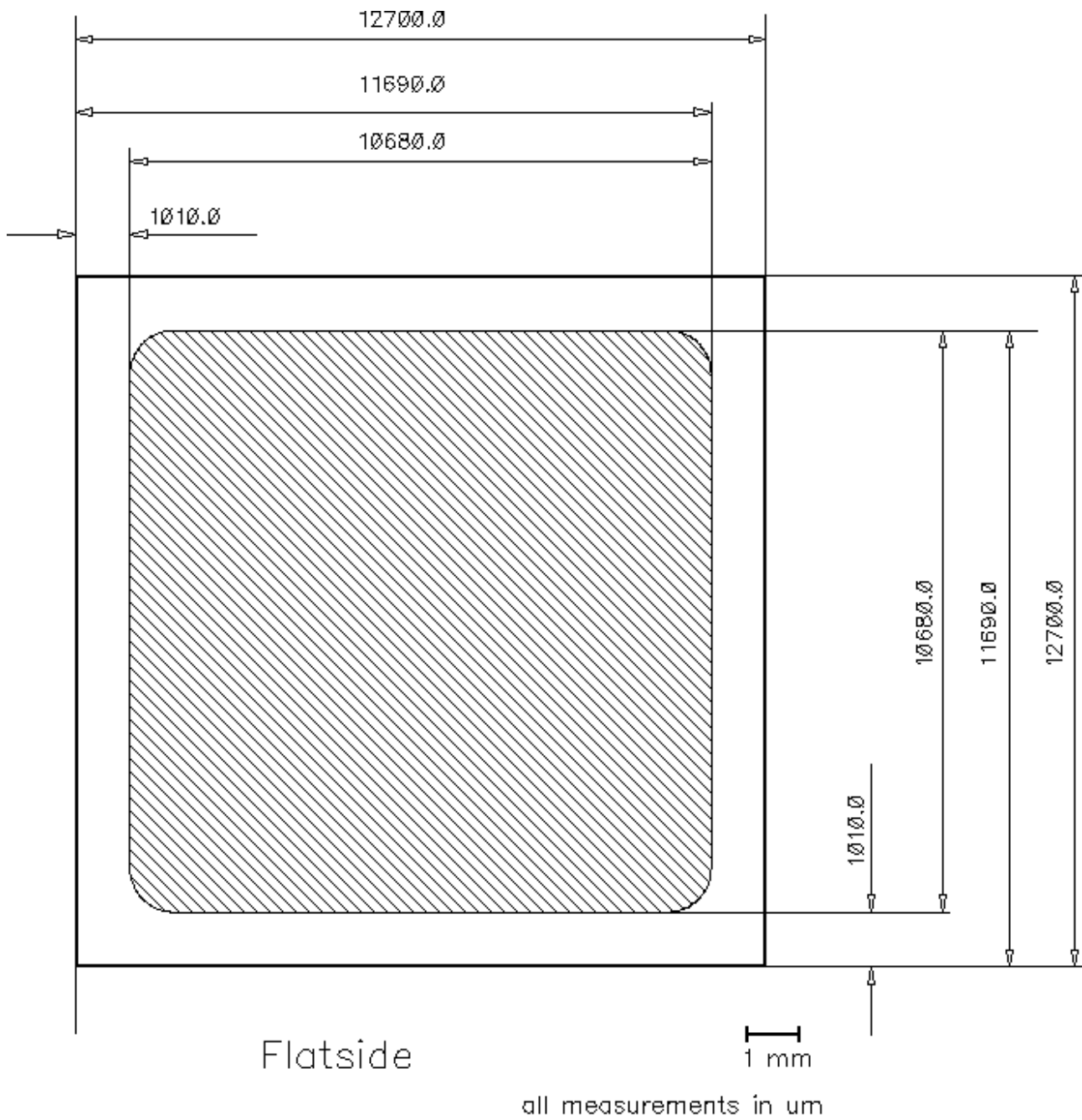
Static Electrical Characteristics (tested on chip), $T_j=25\text{ °C}$, unless otherwise specified

| Parameter | Symbol | Conditions | | Value | | | Unit |
|---------------------------------|----------|----------------------|--------------------|-------|------|------|------|
| | | | | min. | Typ. | max. | |
| Reverse leakage current | I_R | $V_R=1700\text{ V}$ | $T_j=25\text{ °C}$ | | | 27 | µA |
| Cathode-Anode breakdown Voltage | V_{Br} | $I_R=0.25\text{ mA}$ | $T_j=25\text{ °C}$ | 1700 | | | V |
| Forward voltage drop | V_F | $I_F=300\text{ A}$ | $T_j=25\text{ °C}$ | | 1.8 | | V |

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

| Parameter | Symbol | Conditions | | Value | | | Unit |
|-------------------------|------------|--|-----------------------|-------|-------|------|------|
| | | | | min. | Typ. | max. | |
| Peak recovery current | I_{RRM1} | $I_F=300\text{ A}$ | $T_j = 25\text{ °C}$ | | 233 | | A |
| | I_{RRM2} | $di/dt=1200\text{ A/ms}$ $V_R=900\text{ V}$ | $T_j = 125\text{ °C}$ | | 275 | | |
| Reverse recovery charge | Q_{rr1} | $I_F=300\text{ A}$ | $T_j=25\text{ °C}$ | | 69.6 | | µC |
| | Q_{rr2} | $di/dt=1200\text{ A/ms}$ $V_R=900\text{ V}$ | $T_j=125\text{ °C}$ | | 120.8 | | |
| Peak recovery energy | E_{rec1} | $I_F=300\text{ A}$ | $T_j=25\text{ °C}$ | | 49.2 | | mJ |
| | E_{rec2} | $di/dt=1200\text{ A/ms}$ $V_R=900\text{ V}$ | $T_j=125\text{ °C}$ | | 87.5 | | |

CHIP DRAWING:



L451A1

FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the
device data sheet

INFINEON TECHNOLOGIES /
EUPEC

tbd

Description:

AQL 0,65 for visual inspection according to failure catalog

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Test-Normen Villach/Prüffeld

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