# SIDC59D170H

Fast switching diode chip in EMCON 3-Technology

**FEATURES:**

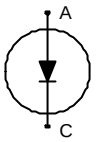
- 1700V EMCON 3 technology 200 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

**This chip is used for:**

- EUPEC power modules

**Applications:**

- resonant applications, drives




| Chip Type | $V_R$ | $I_F$ | Die Size | Package | Ordering Code |
|---|---|---|---|---|---|
| SIDC59D170H | 1700V | 100A | 7.7 x 7.7 mm$^2$ | sawn on foil | Q67050-A4176-A001 |

**MECHANICAL PARAMETER:**

| | | |
|---|---|---|
| Raster size | 7.7 x 7.7 | mm$^2$ |
| Area total / active | 59.29 / 45.35 | |
| Anode pad size | 5.68 x 5.68 | |
| Thickness | 200 | µm |
| Wafer size | 150 | mm |
| Flat position | 180 | deg |
| Max. possible chips per wafer | 238 pcs | |
| Passivation frontside | Photoimide | |
| Anode metallization | 3200 nm Al Si Cu | |
| Cathode metallization | 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 | ∅ 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 | |

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## Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|---|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | | 1700 | V |
| Continuous forward current limited by $T_{jmax}$ | $I_F$ | | 100 | A |
| Single pulse forward current (depending on wire bond configuration) | $I_{FSM}$ | $t_P$ = 10 ms sinusoidal | 540 | |
| Maximum repetitive forward current limited by $T_{jmax}$ | $I_{FRM}$ | | 200 | |
| Operating junction and storage temperature | $T_j$ , $T_{stg}$ | | -55...+150 | °C |

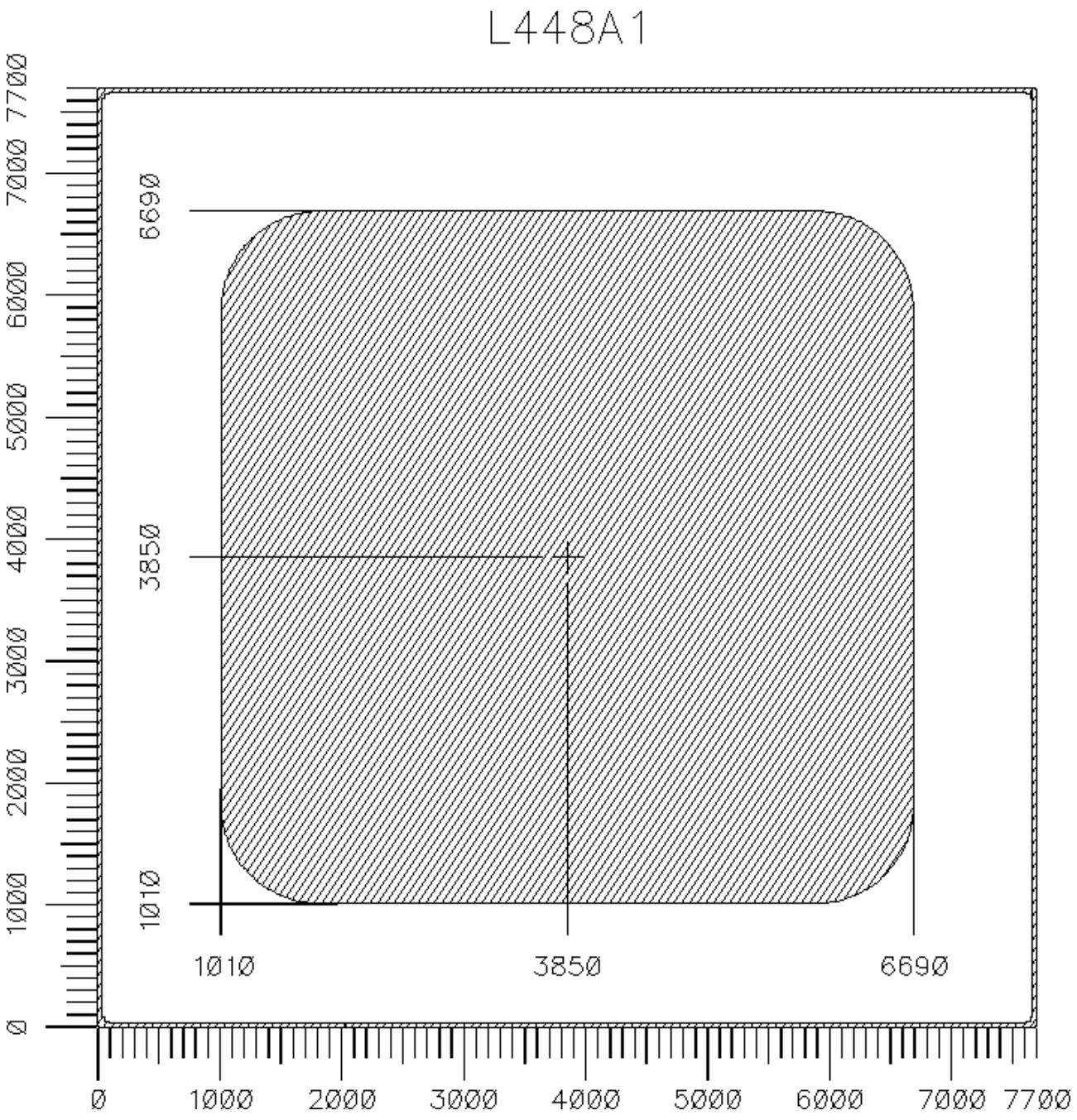
## Static Electrical Characteristics (tested on chip), $T_j$=25 °C, unless otherwise specified

| Parameter | Symbol | Conditions | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | min. | Typ. | max. | |
| Reverse leakage current | $I_R$ | $V_R$=1700V | $T_j$=25°C | | | 27 | µA |
| Cathode-Anode breakdown Voltage | $V_{Br}$ | $I_R$=0.25mA | $T_j$=25°C | 1700 | | | V |
| Forward voltage drop | $V_F$ | $I_F$=100A | $T_j$=25°C | | 1.8 | | V |

## Dynamic Electrical Characteristics, at $T_j$ = 25 °C, unless otherwise specified, tested at component

| Parameter | Symbol | Conditions | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | min. | Typ. | max. | |
| Peak recovery current | $I_{RRM1}$ | $I_F$=100A di/dt=1170A/ms $V_R$=900V | $T_j$ = 25 °C | | 123 | | A |
| | $I_{RRM2}$ | | $T_j$ = 125 °C | | 133 | | |
| Reverse recovery charge | $Q_{rr1}$ | $I_F$=100A di/dt=1170A/ms $V_R$=900V | $T_j$=25°C | | 26.7 | | µC |
| | $Q_{rr2}$ | | $T_j$=125°C | | 43.3 | | |
| Peak recovery energy | $E_{rec1}$ | $I_F$=100A di/dt=1170A/ms $V_R$=900V | $T_j$=25°C | | 13.3 | | mJ |
| | $E_{rec2}$ | | $T_j$=125°C | | 23.3 | | |

**CHIP DRAWING:**



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**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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