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Infineon Technologies
SIDC06D60AC6

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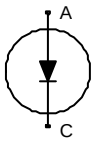
# SIDC06D60AC6

## Fast switching diode chip in EMCON 3 -Technology

**FEATURES:**
- 600V EMCON 3 technology 70 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

**This chip is used for:**
- power module
- discrete components

**Applications:**
- drives
- white goods
- resonant applications




| Chip Type | $V_R$ | $I_F$ | Die Size | Package |
|---|---|---|---|---|
| SIDC06D60AC6 | 600V | 20A | 2.85 x 2 $mm^2$ | sawn on foil |

**MECHANICAL PARAMETER:**

| | | |
|---|---|---|
| Raster size | 2.85 x 2 | $mm^2$ |
| Area total / active | 5.70 / 3.86 | |
| Anode pad size | 2.43 x 1.58 | |
| Thickness | 70 | µm |
| Wafer size | 150 | mm |
| Flat position | 180 | deg |
| Max. possible chips per wafer | 2574 pcs | |
| Passivation frontside | Photoimide | |
| Anode metallization | 3200 nm AlSiCu | |
| 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 | |

# SIDC06D60AC6

## Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|---|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | | 600 | V |
| Continuous forward current limited by $T_{jmax}$ | $I_F$ | | [1] | A |
| Maximum repetitive forward current limited by $T_{jmax}$ | $I_{FRM}$ | | 40 | |
| Operating junction and storage temperature | $T_j$ , $T_{stg}$ | | -40...+175 | °C |

[1] depending on thermal properties of assembly

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

| Parameter | Symbol | Conditions | | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | min. | Typ. | max. | |
| Reverse leakage current | $I_R$ | $V_R$=600V | $T_j$=25°C | | | 27 | µA |
| Cathode-Anode breakdown Voltage | $V_{Br}$ | $I_R$=0.25mA | $T_j$=25°C | 600 | | | V |
| Forward voltage drop | $V_F$ | $I_F$=20A | $T_j$=25°C | 1.25 | 1.6 | 1.95 | V |

## Dynamic Electrical Characteristics (verified by design/characterization), inductive load

| Parameter | Symbol | Conditions | | Value [2] | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | min. | Typ. | max. | |
| Peak reverse recovery current | $I_{RM}$ | $I_F$=20A<br>di/dt=1800A/ms<br>$V_R$=300V<br>$V_{GE}$= -15V | $T_j$ = 25 °C<br>$T_j$ = 125 °C<br>$T_j$ = 150 °C | | 30.0<br>32.0<br>34.0 | | A |
| Recovered charge | $Q_r$ | $I_F$=20A<br>di/dt=1800A/ms<br>$V_R$=300V<br>$V_{GE}$= -15V | $T_j$ = 25 °C<br>$T_j$ = 125 °C<br>$T_j$ = 150 °C | | 1.00<br>1.75<br>2.20 | | µC |
| Reverse recovery energy | $E_{rec}$ | $I_F$=20A<br>di/dt=1800A/ms<br>$V_R$=300V<br>$V_{GE}$= -15V | $T_j$ = 25 °C<br>$T_j$ = 125 °C<br>$T_j$ = 150 °C | | 0.21<br>0.37<br>0.47 | | mJ |

[2] values also influenced by parasitic L- and C- in measurement and package.

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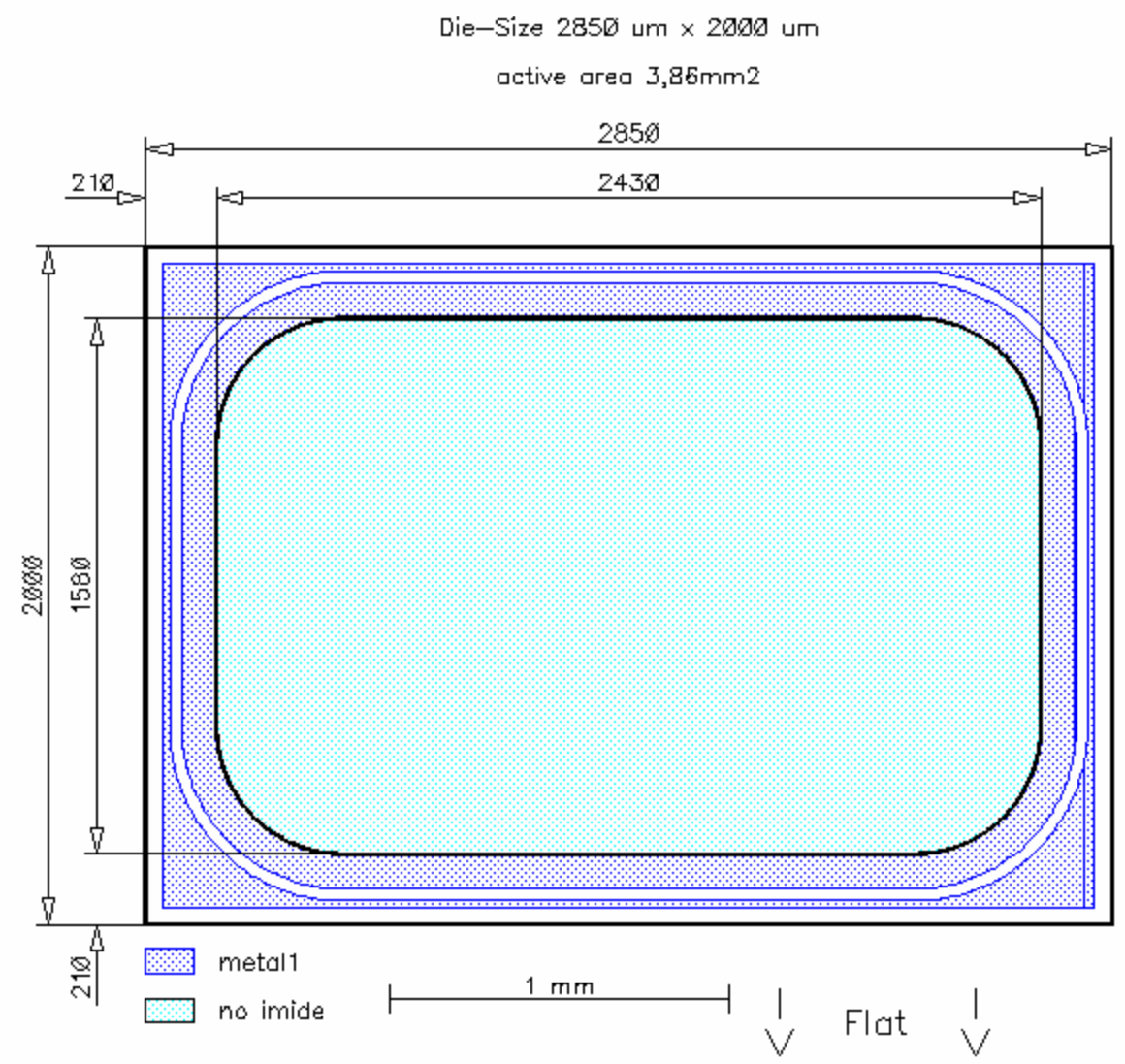
**CHIP DRAWING:**



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**FURTHER ELECTRICAL CHARACTERISTICS:**

| | | |
|---|---|---|
| This chip data sheet refers to the device data sheet | FS20R06VE3 | |

**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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