

## Fast switching diode chip in EMCON-Technology

### FEATURES:

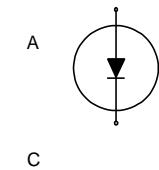
- 1200V EMCON technology 120  $\mu\text{m}$  chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

### This chip is used for:

- EUPEC power modules and discrete devices

### Applications:

- SMPS, resonant applications, drives



Chip Type	$V_R$	$I_F$	Die Size	Package	Ordering Code
SIDC30D120F6	1200V	35A	5.5 x 5.5 mm <sup>2</sup>	sawn on foil	Q67050-A4184-A001

### MECHANICAL PARAMETER:

Raster size	5.5 x 5.5	mm <sup>2</sup>
Area total / active	30.25 / 23.33	
Anode pad size	4.78 x 4.78	
Thickness	120	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	482 pcs	
Passivation frontside	Photoimide	
Anode metallisation	3200 nm Al Si 1%	
Cathode metallisation	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	electrically conductive glue or solder	
Wire bond	Al, $\leq 500\mu\text{m}$	
Reject Ink Dot Size	$\varnothing 0.65\text{mm} ; \text{max } 1.2\text{mm}$	
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	$V_{RRM}$		1200	V
Continuous forward current limited by $T_{jmax}$	$I_F$		35	A
Single pulse forward current (depending on wire bond configuration)	$I_{FSM}$	$t_P = 10 \text{ ms sinusoidal}$	tbd	
Maximum repetitive forward current limited by $T_{jmax}$	$I_{FRM}$		70	
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	$I_R$	$V_R=1200V$	$T_j=25 \text{ °C}$			250	µA
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=2mA$	$T_j=25 \text{ °C}$	1200			V
Forward voltage drop	$V_F$	$I_F=35A$	$T_j=25 \text{ °C}$		2.1		V

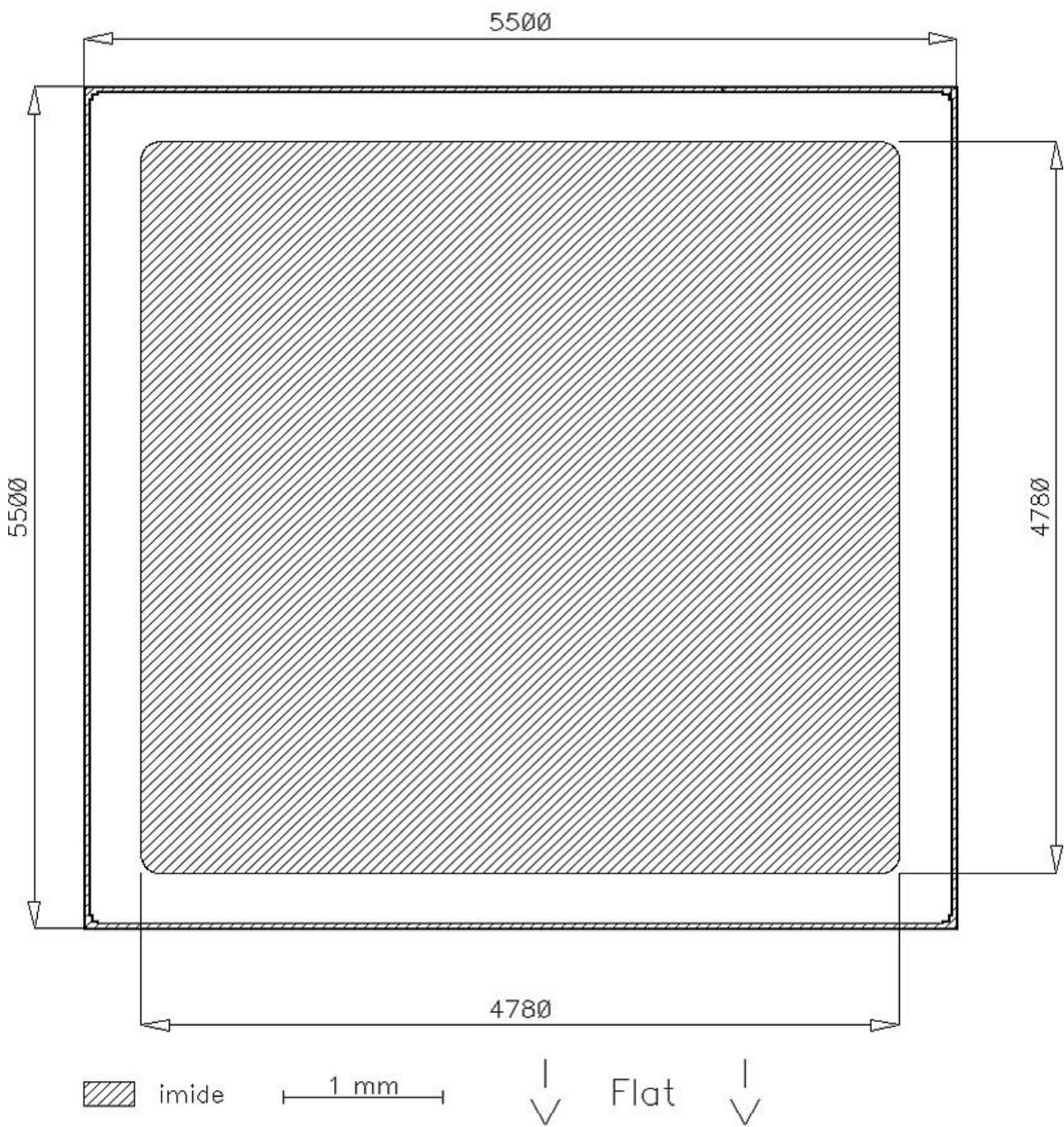
## Dynamic Electrical Characteristics, at $T_j = 25 \text{ °C}$ , unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse recovery time	$t_{rr1}$	$I_F=35A$ $di/dt=A/\text{ms}$ $V_R=600V$	$T_j = 25 \text{ °C}$		tbd		ns
	$t_{rr2}$		$T_j = 150 \text{ °C}$				
Peak recovery current	$I_{RRM1}$	$I_F=35A$ $di/dt= A/\text{ms}$ $V_R= 600V$	$T_j = 25 \text{ °C}$		tbd		A
	$I_{RRM2}$		$T_j = 150 \text{ °C}$				
Reverse recovery charge	$Q_{rr1}$	$I_F=35A$ $di/dt= A/\text{ms}$ $V_R= 600V$	$T_j=25 \text{ °C}$		tbd		nC
	$Q_{rr2}$		$T_j=150 \text{ °C}$				
Peak rate of fall of reverse recovery current	$di_{rr1}/dt$	$I_F=35A$ $di/dt= A/\text{ms}$ $V_R= 600V$	$T_j=25 \text{ °C}$		tbd		A/µs
	$di_{rr2}/dt$		$T_j=150 \text{ °C}$				
Softness	S1	$I_F=35A$ $di/dt= A/\text{ms}$ $V_R= 600V$	$T_j=25 \text{ °C}$		tbd		1
	S2		$T_j=150 \text{ °C}$				

**CHIP DRAWING:**

L418B1

Die-Size 5500  $\mu\text{m}$  x 5500  $\mu\text{m}$



**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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