

## Preliminary

# SIDC06D60F6

## 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	$V_R$	l <sub>F</sub>	Die Size	Package	Ordering Code
SIDC06D60F6	600V	15A	2.45 x 2.45 mm <sup>2</sup>	sawn on foil	Q67050-A4038-
0.000000000			2.40 X 2.40 IIIIII	Sawii on ion	A001

### **MECHANICAL PARAMETER:**

Raster size	2.45 x 2.45				
Area total / active	6 / 3.24	mm <sup>2</sup>			
Anode pad size	1.73 x 1.73				
Thickness	70				
Wafer size	150	mm			
Flat position	180	deg			
Max. possible chips per wafer	2520 pcs				
Passivation frontside	Photoimide				
Anode metallisation	3200 nm AlSiCu				
Cathode metallisation	1400 nm Ni Ag –system suitable for epoxy and soft solder die bor	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding			
Die bond	electrically conductive glue or solder				
Wire bond	AI, ≤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				



## SIDC06D60F6

## **Maximum Ratings**

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$		600	V
Continuous forward current limited by $T_{jmax}$	I <sub>F</sub>		15	
Single pulse forward current (depending on wire bond configuration)	I <sub>FSM</sub>	$t_P = 10 \; ms \; sinusoidal$	tbd	А
Maximum repetitive forward current limited by T <sub>jmax</sub> (depending on wire bond configuration)	I <sub>FRM</sub>		30	
Operating junction and storage temperature	$T_{\rm j}$ , $T_{ m stg}$		-55+150	°C

## $\textbf{Static Electrical Characteristics} \text{ (tested on chip), } \textit{T}_{j}\text{=25 °C, unless otherwise specified}$

Parameter	Symbol	Condi	Value			Unit	
raiailletei	Syllibol	Conditions		min.	Тур.	max.	Oille
Reverse leakage current	$I_{R}$	V <sub>R</sub> =600V	<i>T<sub>j</sub></i> =25 °C			27	μΑ
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=1mA$	<i>T<sub>j</sub></i> =25°C	600			V
Forward voltage drop	V <sub>F</sub>	I <sub>F</sub> =15A	T <sub>j</sub> =25°C		1.45		V

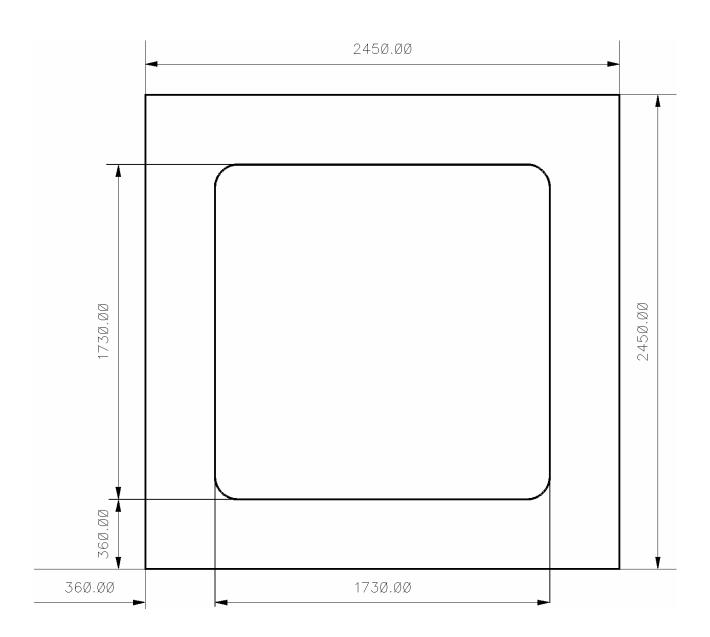
## **Dynamic Electrical Characteristics**, at $T_j$ = 25 °C, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
raiailletei	Syllibol	Condi	Conditions		Тур.	max.	Oilit
Reverse recovery time	t <sub>rr1</sub>	I <sub>F</sub> =15A	$T_j = 25$ °C		87		
	t <sub>rr2</sub>	$di/dt=1000A/ms$ $V_R=400V$	$T_j = 150$ °C		131		ns
Peak recovery current	I <sub>RRM1</sub>	I <sub>F</sub> =15A	$T_j = 25$ °C		13.7		_
	$I_{RRM2} \qquad V_{R} = 400V$	$di/dt=1000A/ms$ $V_R=400V$	$T_j = 150$ °C		19.3		A
Reverse recovery charge	Q <sub>rr1</sub>	$I_F = 15A$ di/dt=1000A/ms	<i>T<sub>j</sub></i> =25 °C		595		nC
	Q <sub>rr2</sub>	$V_R = 400V$	T <sub>j</sub> =150°C		1104		]"
Peak rate of fall of reverse	di <sub>rr1</sub> /dt	I <sub>F</sub> =15A	T <sub>j</sub> =25°C				Λ /ο
recovery current	di <sub>rr2</sub> /dt	$di/dt=1000A/ms$ $V_R=400V$	T <sub>j</sub> =150°C				- A/μs
Softness	S1	$I_F = 15A$	<i>T<sub>j</sub></i> =25 °C		3.6		1
	S2	di/dt = 1000A/ms $V_R = 400V$	T <sub>j</sub> =150°C		4.5		



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## **CHIP DRAWING:**





## **Preliminary**

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#### **FURTHER ELECTRICAL CHARACTERISTICS:**

This chip data sheet refers to the	INFINEON TECHNOLOGIES /	tbd
device data sheet	EUPEC	lbu

### **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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