

# Preliminary

# SIDC06D60E6

# 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	$V_R$	I <sub>F</sub>	Die Size	Package	Ordering Code
SIDC06D60E6	600V	10A	2.45 x 2.45 mm <sup>2</sup>	sawn on foil	Q67050-A4166- A001

### **MECHANICAL PARAMETER:**

Raster size	2.45 x 2.45			
Area total / active	6 / 3.53	$mm^2$		
Anode pad size	1.73 x 1.73	]		
Thickness	70	μm		
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 –sys suitable for epoxy and soft sold		ıding		
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			



# SIDC06D60E6

## **Maximum Ratings**

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$		600	V
Continuous forward current limited by	,		10	
$T_{jmax}$	/ <sub>F</sub>		10	
Single pulse forward current	I <sub>FSM</sub>	$t_P$ = 10 ms sinusoidal	tbd	Α
(depending on wire bond configuration)	1 F S M	tp = 10 ma amadalah	iba	
Maximum repetitive forward current	1		30	
limited by T <sub>jmax</sub>	I <sub>FRM</sub>		30	
Operating junction and storage temperature	$T_{\rm j}$ , $T_{ m stg}$		-55+150	°C

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

Parameter	Symbol	Condi	Value			Unit	
raiailletei	Parameter Symbol Condi		itions	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 <sub>R</sub> =1mA	<i>T<sub>j</sub></i> =25°C	600			V
Forward voltage drop	V <sub>F</sub>	I <sub>F</sub> =10A	T <sub>j</sub> =25°C		1.25		V

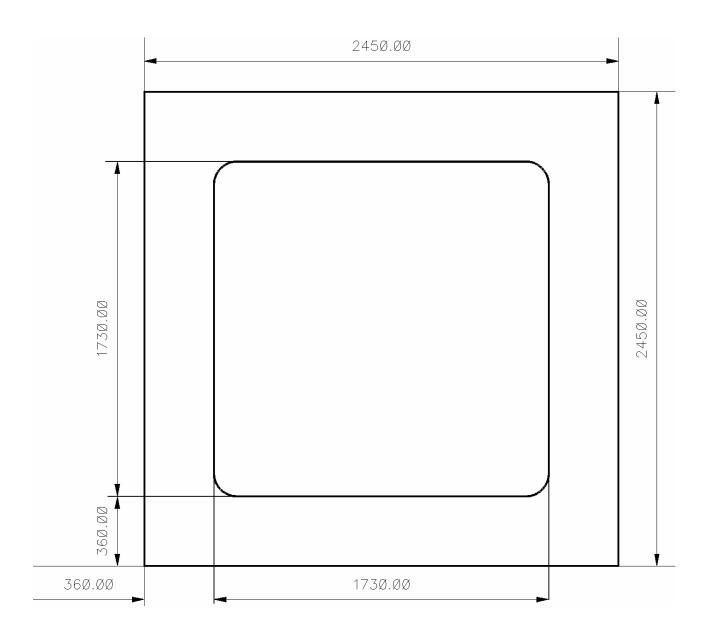
# **Dynamic Electrical Characteristics,** at $T_j$ = 25 °C, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
	Symbol Cor		itions	min.	Тур.	max.	7
Reverse recovery time	t <sub>rr1</sub>	I <sub>F</sub> =10A	$T_j = 25$ °C		tbd		
	t <sub>rr2</sub>	di/dt=300A/ms $V_R=300V$	$T_j = 125$ °C				ns
Peak recovery current	I <sub>RRM1</sub>	I <sub>F</sub> =10A	$T_j = 25$ °C		8		Α
	I <sub>RRM2</sub>	$di/dt=300A/ms$ $V_R=300V$	$T_j = 125$ °C		11		]^
Reverse recovery charge	$Q_{rr1}$	I <sub>F</sub> =10A	<i>T<sub>j</sub></i> =25 °C		1.07		μC
	Q <sub>rr2</sub>	$di/dt=300A/ms$ $V_R=300V$	T <sub>j</sub> =125°C		1.7		μC
Peak rate of fall of reverse	di <sub>rr1</sub> /dt	I <sub>F</sub> =10A	T <sub>j</sub> =25°C		tbd		Δ / -
recovery current	di <sub>rr2</sub> /dt	$di/dt=300A/ms$ $V_R=300V$	T <sub>j</sub> =125°C				- A/μs
Softness	S1	$I_F=10A$	<i>T<sub>j</sub></i> =25 °C		tbd		1
	S2	$di/dt=300A/ms$ $V_R=~300V$	T <sub>j</sub> =125°C				<u> </u>



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## **CHIP DRAWING:**





### **Preliminary**

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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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