

# SIDC32D170H

## 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 <sub>F</sub>	Die Size	Package	Ordering Code
SIDC32D170H	1700V	50A	5.7 x 5.7 mm <sup>2</sup>	sawn on foil	Q67050-A4174- A001

### **MECHANICAL PARAMETER:**

Raster size	5.7 x 5.7				
		2			
Area total / active	32.49 / 22.41	mm <sup>2</sup>			
Anode pad size	3.68 x 3.68				
Thickness	200				
Wafer size	150	mm			
Flat position	180	deg			
Max. possible chips per wafer	442 pcs				
Passivation frontside	Photoimide				
Anode metallization	3200 nm Al Si Cu				
Cathode metallization	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				



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## **Maximum Ratings**

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$		1700	٧
Continuous forward current limited by $T_{jmax}$	I <sub>F</sub>		50	
Single pulse forward current (depending on wire bond configuration)	I <sub>FSM</sub>	$t_P = 10 \; ms \; sinusoidal$	310	А
Maximum repetitive forward current limited by $T_{jmax}$	I <sub>FRM</sub>		100	
Operating junction and storage temperature	$T_{\rm j}$ , $T_{ m stg}$		-55+150	°C

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

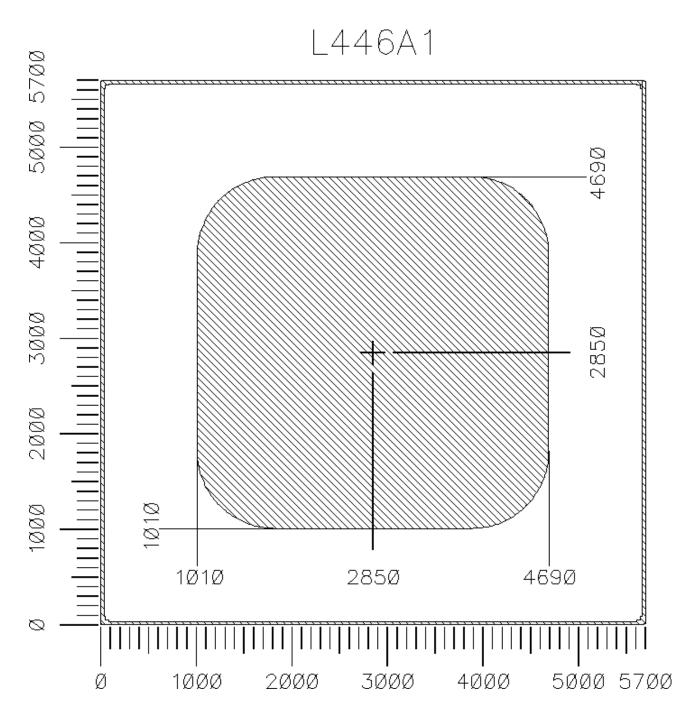
Parameter	Symbol	Condi	Value			Unit	
i arameter	Symbol	Conditions		min.	Тур.	max.	
Reverse leakage current	$I_{R}$	V <sub>R</sub> =1700V	<i>T<sub>j</sub></i> =25 °C			27	μΑ
Cathode-Anode breakdown Voltage	V <sub>Br</sub>	I <sub>R</sub> =0.25mA	<i>T<sub>j</sub></i> =25°C	1700			V
Forward voltage drop	V <sub>F</sub>	I <sub>F</sub> =50A	<i>T<sub>j</sub></i> =25 °C		1.8		V

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

Parameter	Symbol	Conditions		Value			Unit
- arameter	Symbol			min.	Тур.	max.	
Peak recovery current	$I_{RRM1}$	I <sub>F</sub> =50A di/dt=730A/ <b>m</b> s	$T_j = 25  ^{\circ}\text{C}$		62		Α
	$I_{RRM2}$	$V_R = 900V$	$T_j = 125  ^{\circ}\text{C}$		67		7^
Reverse recovery charge	Q <sub>rr1</sub>	I <sub>F</sub> =50A di/dt=730A/ <b>m</b> s	<i>T<sub>j</sub></i> =25 °C		13.3		μC
	Q <sub>rr2</sub>	$V_R = 900V$	T <sub>j</sub> =125°C		21.7		7 "
Reverse recovery energy	E <sub>rec 1</sub>	I <sub>F</sub> =50A	$T_j = 25 \degree C$		6.7		1
	E <sub>rec2</sub>	$di/dt=730A/\mathbf{m}s$ $V_R=900V$	T <sub>j</sub> =125°C		11.7		mJ



### **CHIP DRAWING:**





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

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

## **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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