

Fast switching diode chip in EMCN 3-Technology

**FEATURES:**

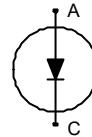
- 1700V EMCN 3 technology 200 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

**This chip is used for:**

- EUPEC power modules

**Applications:**

- resonant applications, drives



Chip Type	V <sub>R</sub>	I <sub>F</sub>	Die Size	Package	Ordering Code
SIDC46D170H	1700V	75A	6.8 x 6.8 mm <sup>2</sup>	sawn on foil	Q67050-A4175-A001

**MECHANICAL PARAMETER:**

Raster size	6.8 x 6.8	mm <sup>2</sup>
Area total / active	46.24 / 34.04	
Anode pad size	4.78 x 4.78	
Thickness	200	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	304 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	Al, ≤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	

**Maximum Ratings**

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$		1700	V
Continuous forward current limited by $T_{jmax}$	$I_F$		75	A
Single pulse forward current (depending on wire bond configuration)	$I_{FSM}$	$t_P = 10 \text{ ms sinusoidal}$	430	
Maximum repetitive forward current limited by $T_{jmax}$	$I_{FRM}$		150	
Operating junction and storage temperature	$T_j, T_{stg}$		-55...+150	°C

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

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R=1700V$	$T_j=25^\circ\text{C}$			27	µA
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=0.25mA$	$T_j=25^\circ\text{C}$	1700			V
Forward voltage drop	$V_F$	$I_F=75A$	$T_j=25^\circ\text{C}$		1.8		V

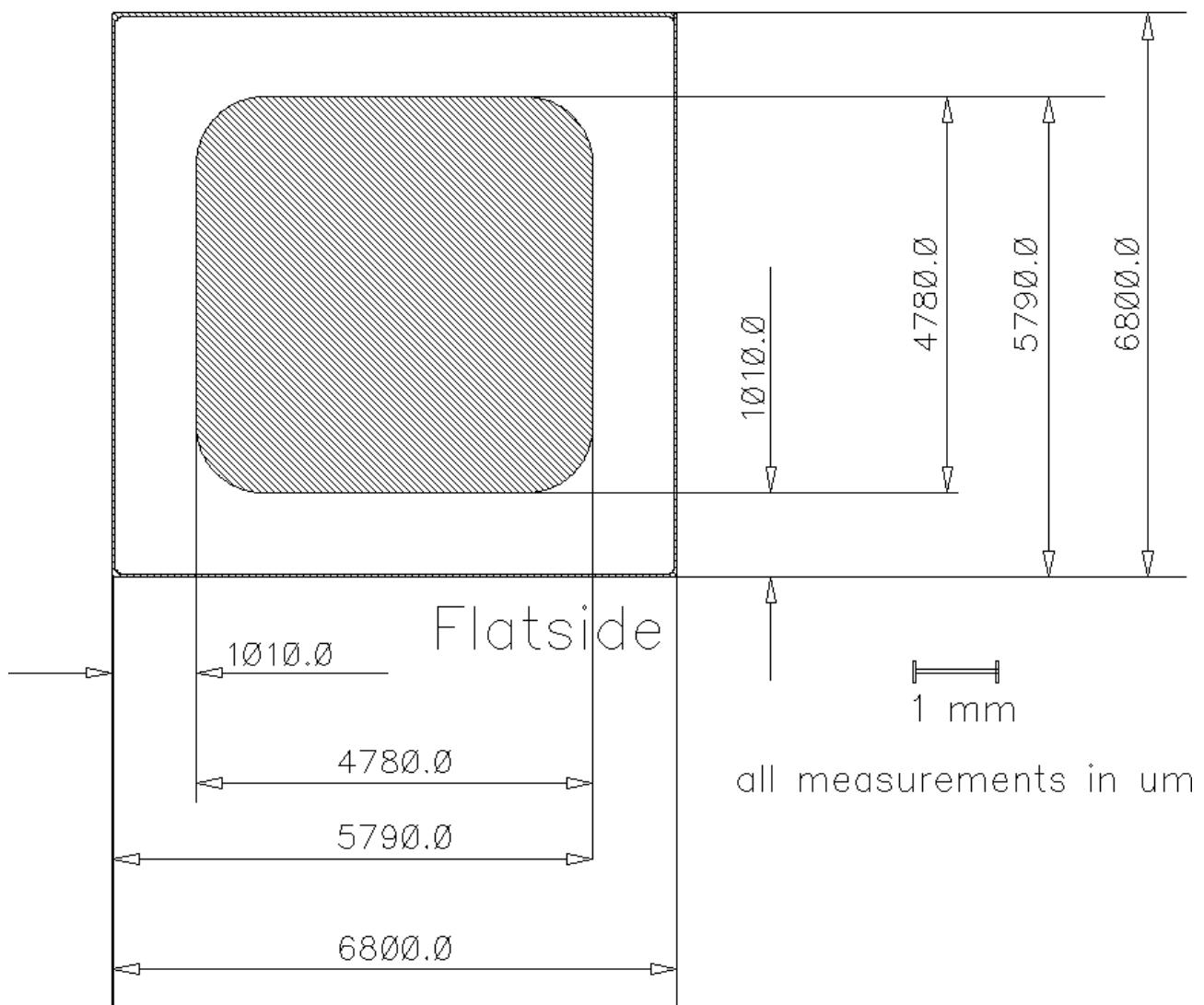
**Dynamic Electrical Characteristics**, at  $T_j = 25$  °C, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Peak recovery current	$I_{RRM1}$	$I_F=75A$ $di/dt=920A/\mu\text{s}$ $V_R=900V$	$T_j = 25^\circ\text{C}$		93		A
	$I_{RRM2}$		$T_j = 125^\circ\text{C}$		100		
Reverse recovery charge	$Q_{rr1}$	$I_F=75A$ $di/dt=920A/\mu\text{s}$ $V_R=900V$	$T_j=25^\circ\text{C}$		20.0		$\mu\text{C}$
	$Q_{rr2}$		$T_j=125^\circ\text{C}$		31.7		
Reverse recovery energy	$E_{rec1}$	$I_F=75A$ $di/dt=920A/\mu\text{s}$ $V_R=900V$	$T_j=25^\circ\text{C}$		10.0		mJ
	$E_{rec2}$		$T_j=125^\circ\text{C}$		18.3		

# SIDC46D170H

**CHIP DRAWING:**

L447A1



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**FURTHER ELECTRICAL CHARACTERISTICS:**

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This chip data sheet refers to the  
device data sheet

INFINEON TECHNOLOGIES /  
EUPEC

tbd

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**Description:**

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AQL 0,65 for visual inspection according to failure catalog

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Electrostatic Discharge Sensitive Device according to MIL-STD 883

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Test-Normen Villach/Prüffeld

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