

# SIDC59D170H

Fast switching diode chip in EMCON 3 -Technology

## FEATURES:

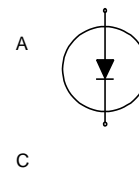
- 1700V EMCON 3 technology 200  $\mu\text{m}$  chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

## This chip is used for:

- EUPEC power modules

## Applications:

- resonant applications, drives



Chip Type	$V_R$	$I_F$	Die Size	Package	Ordering Code
SIDC59D170H	1700V	100A	7.7 x 7.7 mm <sup>2</sup>	sawn on foil	Q67050-A4176-A001

## MECHANICAL PARAMETER:

Raster size	7.7 x 7.7	mm <sup>2</sup>
Area total / active	59.29 / 45.35	
Anode pad size	5.68 x 5.68	
Thickness	200	$\mu\text{m}$
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	238 pcs	
Passivation frontside	Photoimide	
Anode metallization	3200 nm Al Si 1%	
Cathode metallization	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	$\varnothing$ 0.65mm; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

## Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$		1700	V
Continuous forward current limited by $T_{jmax}$	$I_F$		100	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 $T_{jmax}$	$I_{FRM}$		200	
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

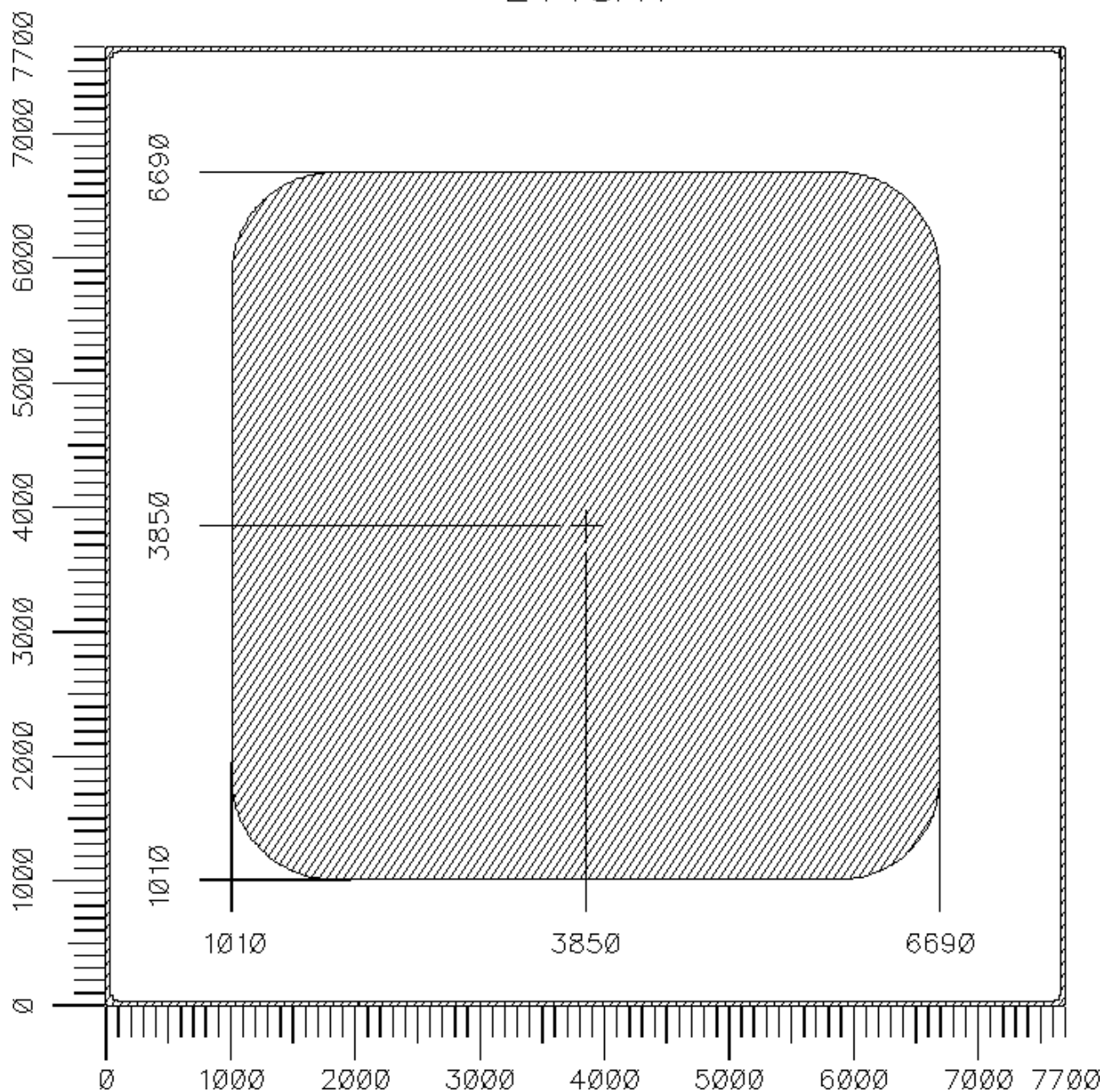
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R=1700\text{ V}$	$T_j=25\text{ °C}$			250	µA
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=0.25\text{ mA}$	$T_j=25\text{ °C}$	1700			V
Forward voltage drop	$V_F$	$I_F=100\text{ A}$	$T_j=25\text{ °C}$		1.8		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	$t_{rr1}$	$I_F=100\text{ A}$	$T_j = 25\text{ °C}$		tbd		ns
	$t_{rr2}$	$di/dt=----\text{ A/ms}$ $V_R=---\text{ V}$	$T_j = 125\text{ °C}$				
Peak recovery current	$I_{RRM1}$	$I_F=100\text{ A}$	$T_j = 25\text{ °C}$		tbd		A
	$I_{RRM2}$	$di/dt=----\text{ A/ms}$ $V_R=---\text{ V}$	$T_j = 125\text{ °C}$		tbd		
Reverse recovery charge	$Q_{rr1}$	$I_F=100\text{ A}$	$T_j=25\text{ °C}$		tbd		µC
	$Q_{rr2}$	$di/dt=----\text{ A/ms}$ $V_R=---\text{ V}$	$T_j=125\text{ °C}$		tbd		
Peak rate of fall of reverse recovery current	$di_{rr1}/dt$	$I_F=100\text{ A}$	$T_j=25\text{ °C}$		tbd		A/µs
	$di_{rr2}/dt$	$di/dt=----\text{ A/ms}$ $V_R=---\text{ V}$	$T_j=125\text{ °C}$				
Softness	S1	$I_F=100\text{ A}$	$T_j=25\text{ °C}$		tbd		1
	S2	$di/dt=----\text{ A/ms}$ $V_R=---\text{ V}$	$T_j=125\text{ °C}$				

## CHIP DRAWING:

L448A1





Preliminary

# SIDC59D170H

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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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