



Preliminary

SIDC59D170H

Fast switching diode chip in EMCON 3 -Technology

FEATURES:

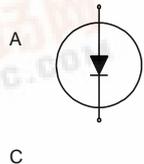
- 1700V EMCON 3 technology 200 μm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- EUPEC power modules

Applications:

- resonant applications, drives



Chip Type	V _R	I _F	Die Size	Package	Ordering Code
SIDC59D170H	1700V	100A	7.7 x 7.7 mm ²	sawn on foil	Q67050-A4176-A001

MECHANICAL PARAMETER:

Raster size	7.7 x 7.7	
Area total / active	59.29 / 45.35	mm ²
Anode pad size	5.68 x 5.68	
Thickness	200	μm
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, ≤500μm	
Reject Ink Dot Size	Ø 0.65mm; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	





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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

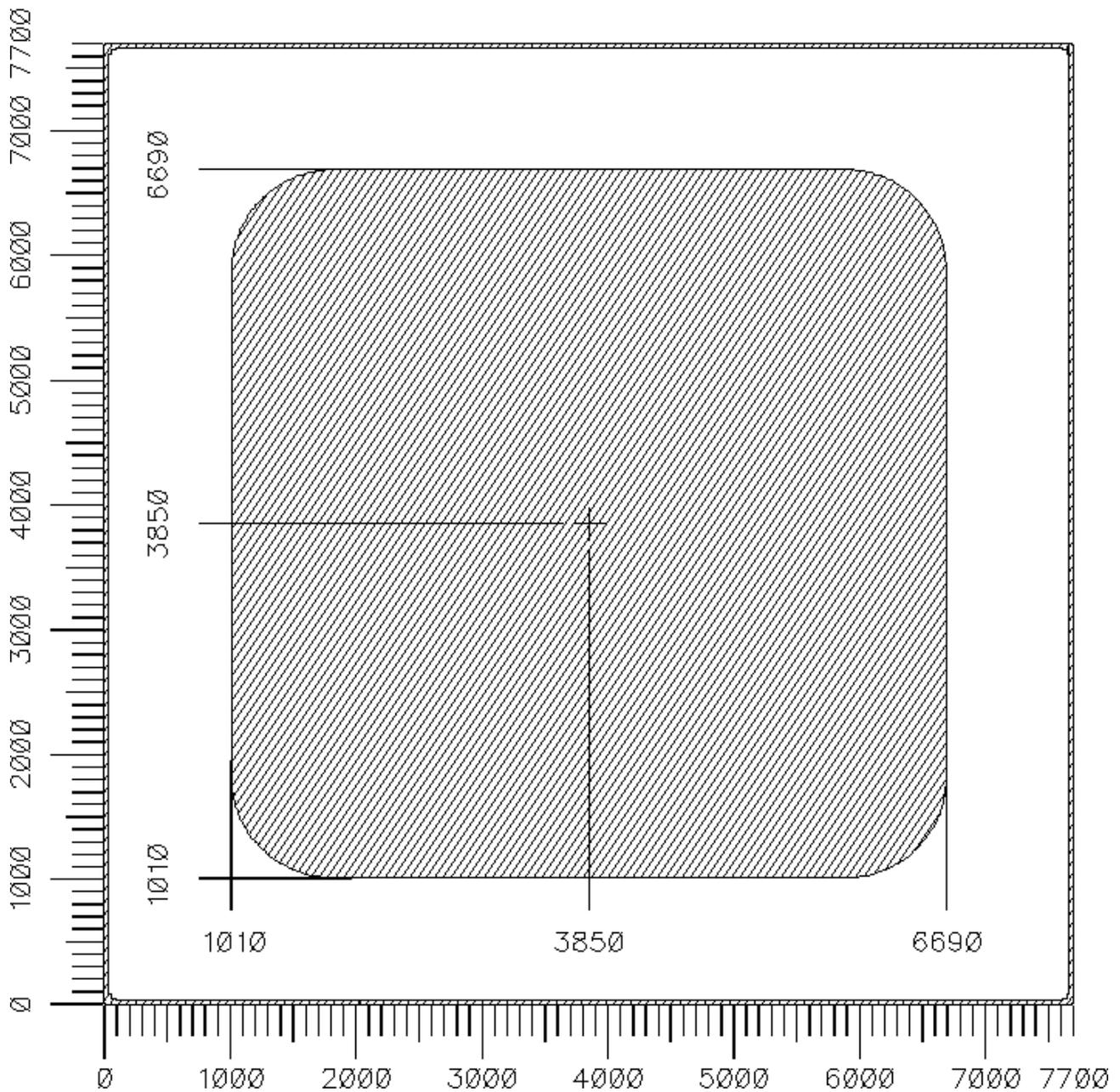
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	$V_R=1700\text{ V}$	$T_j=25\text{ °C}$			250	µA
Cathode-Anode breakdown Voltage	V_{Br}	$I_R=0.25\text{ mA}$	$T_j=25\text{ °C}$	1700			V
Forward voltage drop	V_F	$I_F=100\text{ A}$	$T_j=25\text{ °C}$		1.8		V

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





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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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