Preliminary

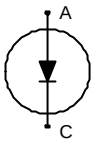
SIDC161D170H

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
SIDC161D170H	1700V	300A	12.7 x 12.7 mm^2	sawn on foil	Q67050-A4180-A001

MECHANICAL PARAMETER:

Raster size	12.7 x 12.7	mm^2
Area total / active	161.29 / 137.69	
Anode pad size	10.68 x 10.68	
Thickness	200	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	80 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	∅ 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	V
Continuous forward current limited by T_{jmax}	I_F		300	A
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	t_P = 10 ms sinusoidal	tbd	
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}		600	
Operating junction and storage temperature	T_j , T_{stg}		-55...+150	°C

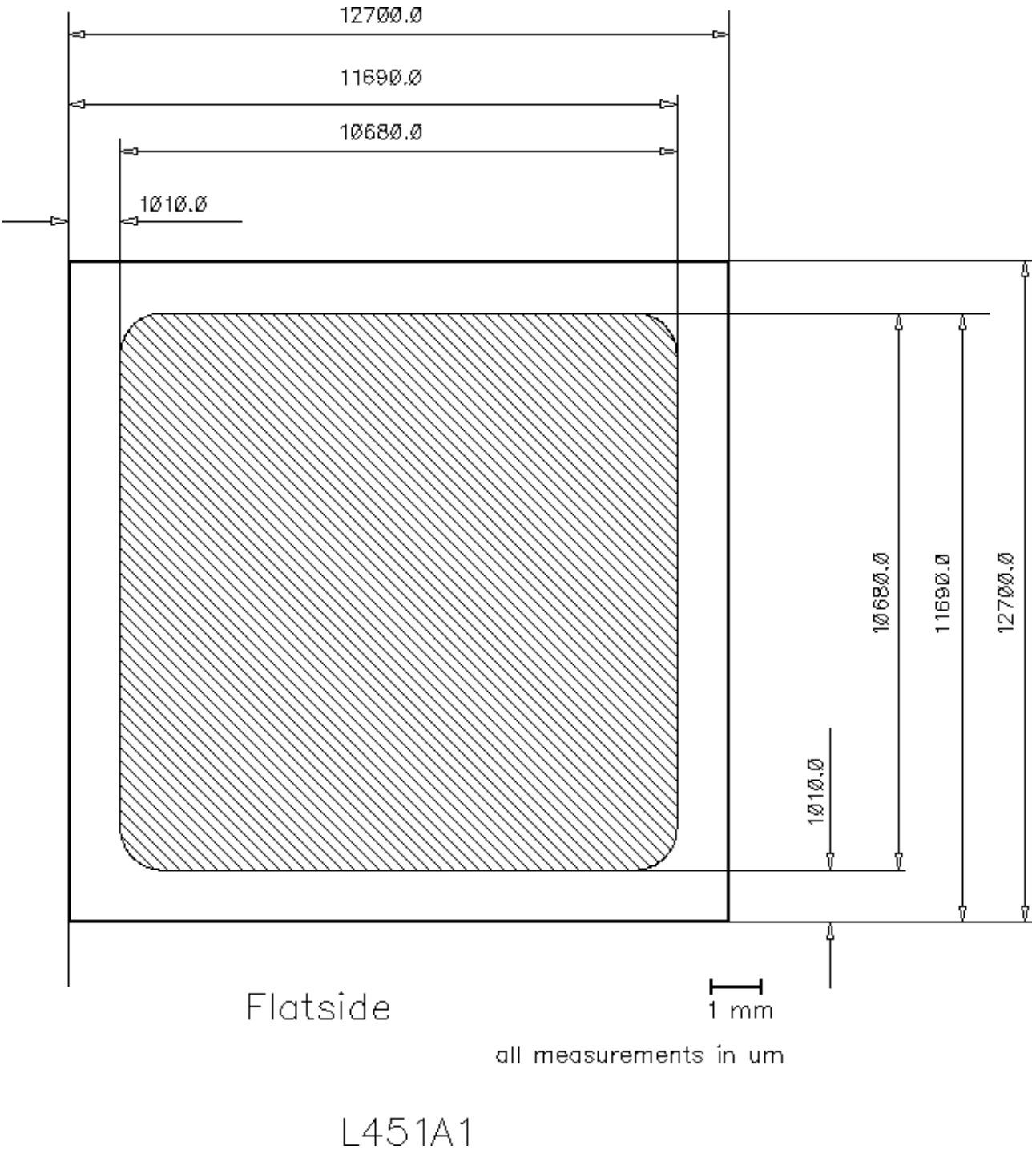
Static Electrical Characteristics (tested on chip), T_j=25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=1700V	T_j=25°C			250	µA
Cathode-Anode breakdown Voltage	V_{Br}	I_R=0.25mA	T_j=25°C	1700			V
Forward voltage drop	V_F	I_F=300A	T_j=25°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.	
Reverse recovery time	t_{rr1}	I_F=300A di/dt=----A/ms V_R=---V	T_j = 25 °C		tbd		ns
	t_{rr2}		T_j = 125 °C				
Peak recovery current	I_{RRM1}	I_F=300A di/dt=----A/ms V_R=---V	T_j = 25 °C		tbd		A
	I_{RRM2}		T_j = 125 °C		tbd		
Reverse recovery charge	Q_{rr1}	I_F=300A di/dt=----A/ms V_R=---V	T_j=25°C		tbd		µC
	Q_{rr2}		T_j=125°C		tbd		
Peak rate of fall of reverse recovery current	di_{rr1}/dt	I_F=300A di/dt=----A/ms V_R=---V	T_j=25°C		tbd		A/µs
	di_{rr2}/dt		T_j=125°C				
Softness	S1	I_F=300A di/dt=----A/ms V_R=---V	T_j=25°C		tbd		1
	S2		T_j=125°C				

CHIP DRAWING:



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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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