Preliminary

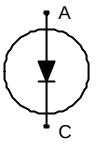
SIDC53D120H6

Fast switching diode chip in EMCON-Technology

FEATURES:
- 1200V EMCON technology 120 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:
- EUPEC power modules and discrete devices

Applications:
- SMPS, resonant applications, drives



Chip Type	V_R	I_F	Die Size	Package	Ordering Code
SIDC53D120H6	1200V	100A	7.3 x 7.3 mm^2	sawn on foil	Q67050-A4100

MECHANICAL PARAMETER:

Raster size	7.3 x 7.3	mm^2
Area total / active	53.29 / 44.22	
Anode pad size	6.58 x 6.58	
Thickness	120	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	304 pcs	
Passivation frontside	Photoimide	
Anode metallisation	3200 nm AlSiCu	
Cathode metallisation	1400 nm 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	

Edited by INFINEON Technologies AI PS DD HV3, L 4392S, Edition 1, 8.01.2002

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Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}		1200	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 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

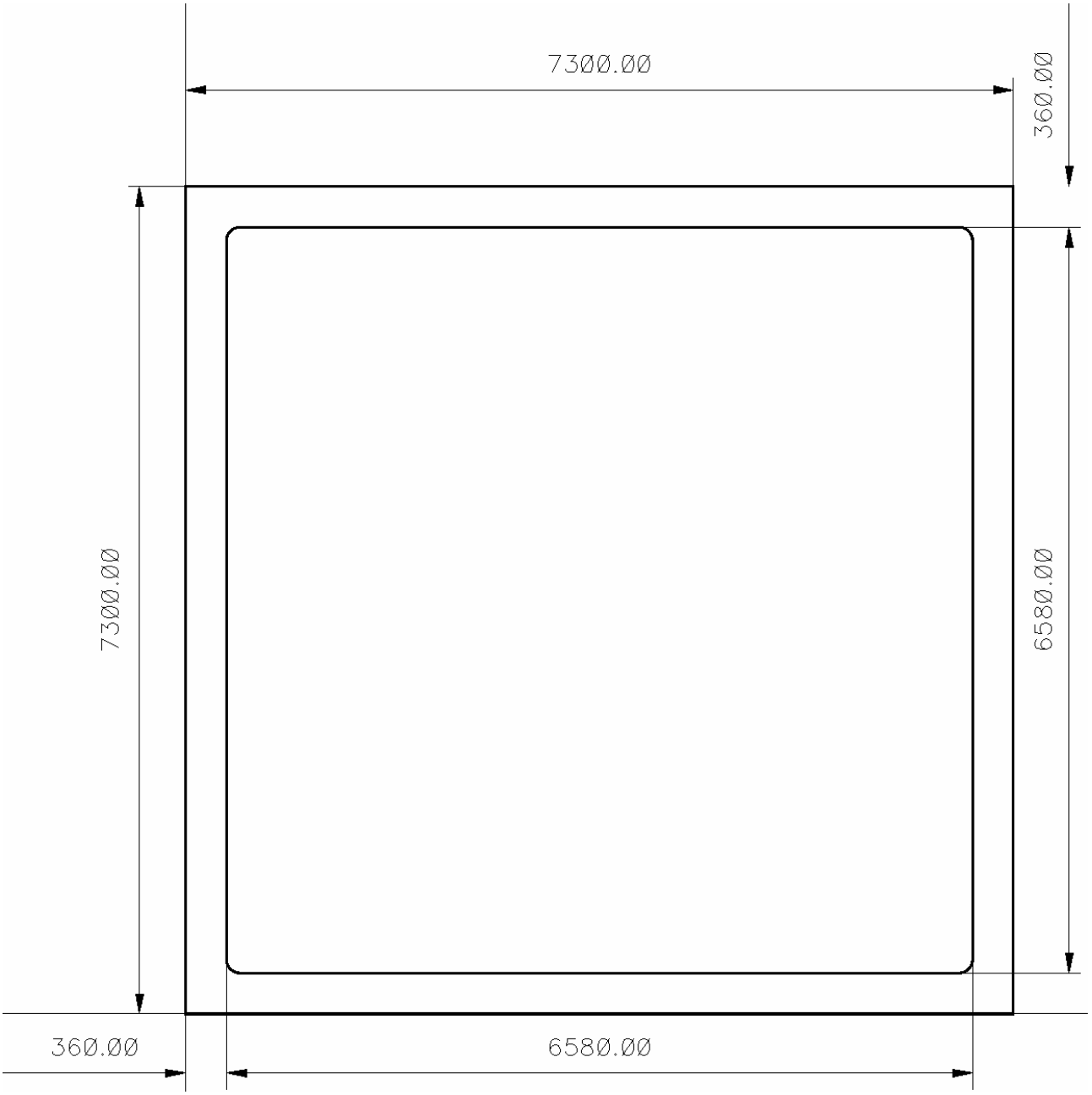
Static Electrical Characteristics (tested on chip), T_j=25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=1200V	T_j=25°C			27	µA
Cathode-Anode breakdown Voltage	V_{Br}	I_R=4mA	T_j=25°C	1200			V
Forward voltage drop	V_F	I_F=100A	T_j=25°C		1.6		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=100A di/dt=1100A/ms V_R=600V	T_j =25°C		tbd		ns
	t_{rr2}		T_j =125°C				
Peak recovery current	I_{RRM1}	I_F=100A di/dt=1100A/ms V_R= 600V	T_j =25°C		119.8		A
	I_{RRM2}		T_j =125°C		127.5		
Reverse recovery charge	Q_{rr1}	I_F=100A di/dt=1100A/ms V_R= 600V	T_j=25°C		10		µC
	Q_{rr2}		T_j=125°C		18		
Peak rate of fall of reverse recovery current	di_{rr1}/dt	I_F=100A di/dt=1100A/ms V_R= 600V	T_j=25°C		tbd		A/µs
	di_{rr2}/dt		T_j=125°C				
Softness	S1	I_F=100A di/dt=1100A/ms V_R= 600V	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

Published by
Infineon Technologies AG
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