

# SIDC53D120H6

Fast switching diode chip in EMCON-Technology

## FEATURES:

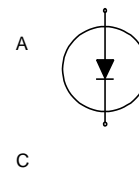
- 1200V EMCON technology 120  $\mu\text{m}$  chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

## 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 <sup>2</sup>	sawn on foil	Q67050-A4100

## MECHANICAL PARAMETER:

Raster size	7.3 x 7.3	mm <sup>2</sup>
Area total / active	53.29 / 44.22	
Anode pad size	6.58 x 6.58	
Thickness	120	$\mu\text{m}$
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	304 pcs	
Passivation frontside	Photoimide	
Anode metallisation	3200 nm Al Si 1%	
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, $\leq 500\mu\text{m}$	
Reject Ink Dot Size	$\varnothing$ 0.65mm ; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C	

## 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)	$I_{FSM}$	$t_p = 10\text{ ms sinusoidal}$	tbd	
Maximum repetitive forward current limited by $T_{jmax}$	$I_{FRM}$		200	
Operating junction and storage temperature	$T_j, T_{stg}$		-55...+150	°C

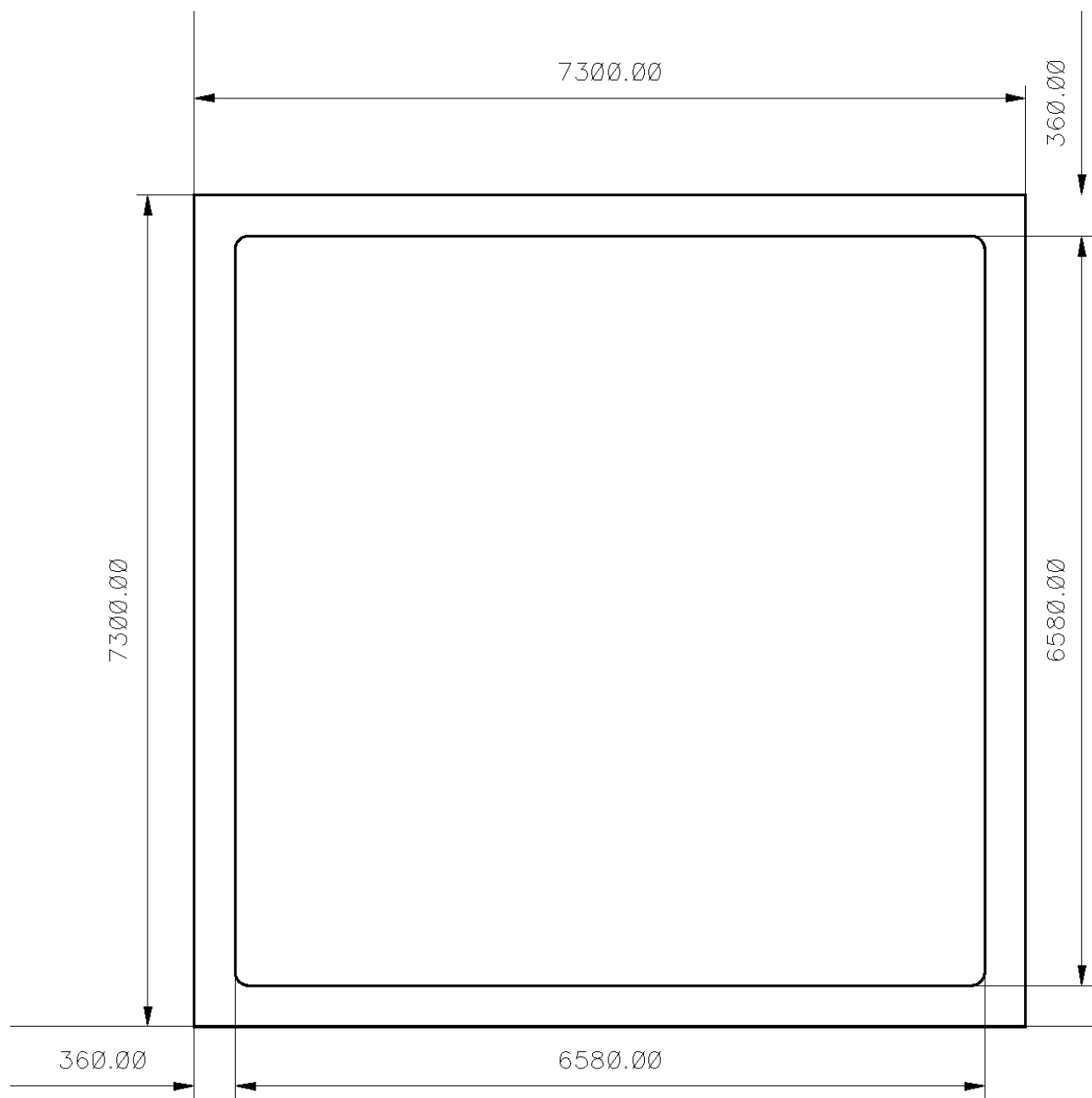
## Static Electrical Characteristics (tested on chip), $T_j=25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R=1200\text{V}$	$T_j=25^\circ\text{C}$			250	$\mu\text{A}$
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=4\text{mA}$	$T_j=25^\circ\text{C}$	1200			V
Forward voltage drop	$V_F$	$I_F=100\text{A}$	$T_j=25^\circ\text{C}$		1.6		V

## Dynamic Electrical Characteristics, at $T_j = 25^\circ\text{C}$ , unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse recovery time	$t_{rr1}$	$I_F=100\text{A}$	$T_j=25^\circ\text{C}$		tbd		ns
	$t_{rr2}$	$di/dt=1100\text{A/ms}$ $V_R=600\text{V}$	$T_j=125^\circ\text{C}$				
Peak recovery current	$I_{RRM1}$	$I_F=100\text{A}$	$T_j=25^\circ\text{C}$		119.8		A
	$I_{RRM2}$	$di/dt=1100\text{A/ms}$ $V_R=600\text{V}$	$T_j=125^\circ\text{C}$		127.5		
Reverse recovery charge	$Q_{rr1}$	$I_F=100\text{A}$	$T_j=25^\circ\text{C}$		10		$\mu\text{C}$
	$Q_{rr2}$	$di/dt=1100\text{A/ms}$ $V_R=600\text{V}$	$T_j=125^\circ\text{C}$		18		
Peak rate of fall of reverse recovery current	$di_{rr1}/dt$	$I_F=100\text{A}$	$T_j=25^\circ\text{C}$		tbd		A/ $\mu\text{s}$
	$di_{rr2}/dt$	$di/dt=1100\text{A/ms}$ $V_R=600\text{V}$	$T_j=125^\circ\text{C}$				
Softness	S1	$I_F=100\text{A}$	$T_j=25^\circ\text{C}$		tbd		1
	S2	$di/dt=1100\text{A/ms}$ $V_R=600\text{V}$	$T_j=125^\circ\text{C}$				

**CHIP DRAWING:**





Preliminary

# SIDC53D120H6

---

## 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**  
**Bereich Kommunikation**  
**St.-Martin-Strasse 53**  
**D-81541 München**  
**© Infineon Technologies AG 2000**  
**All Rights Reserved.**

## Attention please!

The information herein is given to describe certain components and shall not be considered as warranted characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Infineon Technologies is an approved CECC manufacturer.

## Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Representatives world-wide (see address list).

## Warnings

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and / or maintain and sustain and / or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.