

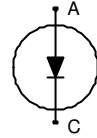
Fast switching diode chip in EMCON 3-Technology

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
SIDC46D170H	1700V	75A	6.8 x 6.8 mm ²	sawn on foil	Q67050-A4175-A001

MECHANICAL PARAMETER:

Raster size	6.8 x 6.8	mm ²
Area total / active	46.24 / 34.04	
Anode pad size	4.78 x 4.78	
Thickness	200	μm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	304 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, $\leq 500\mu\text{m}$	
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}		1700	V
Continuous forward current limited by T_{jmax}	I_F		75	A
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	$t_P = 10\text{ ms sinusoidal}$	430	
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}		150	
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

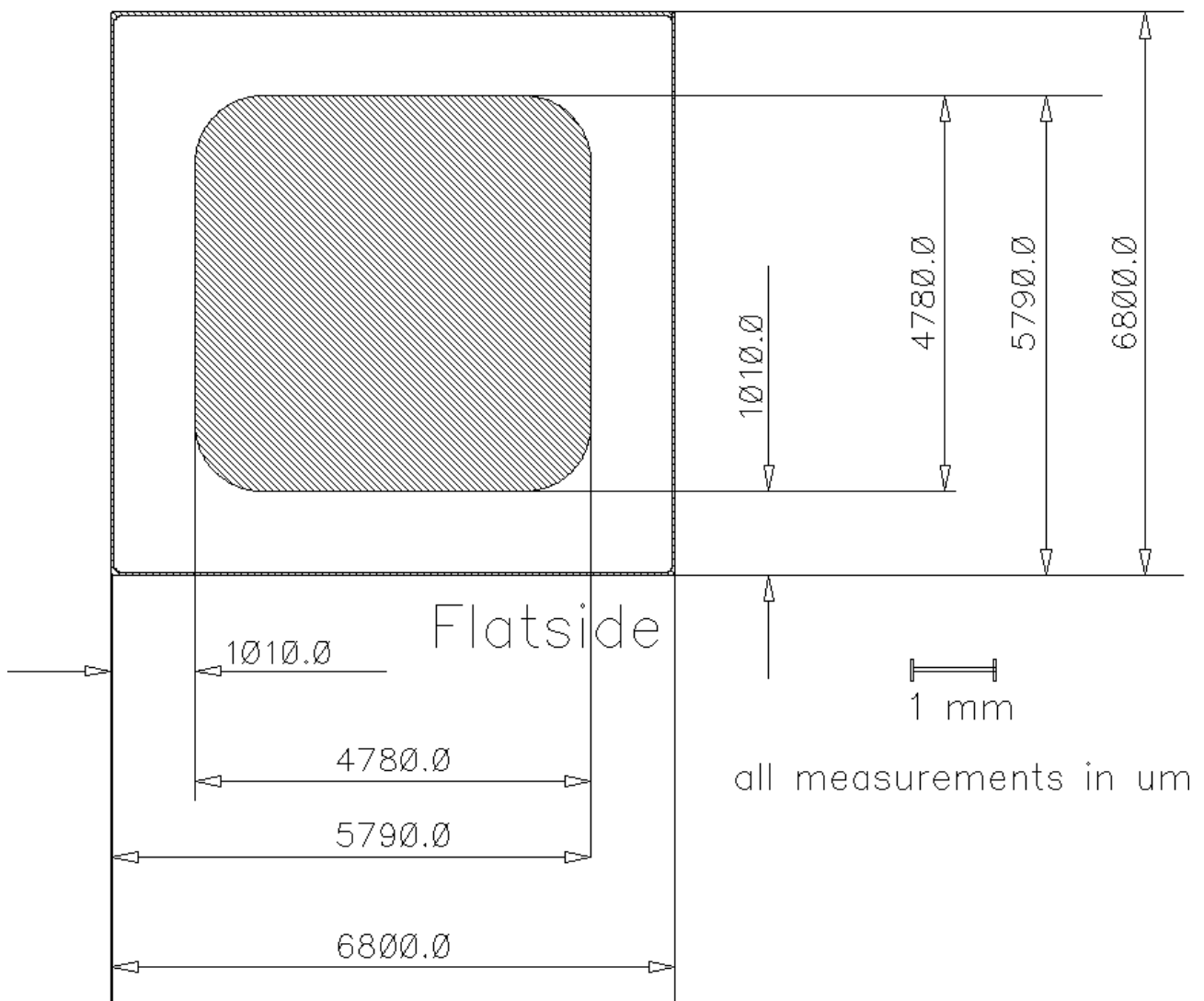
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	$V_R=1700\text{ V}$	$T_j=25\text{ °C}$			27	µA
Cathode-Anode breakdown Voltage	V_{Br}	$I_R=0.25\text{ mA}$	$T_j=25\text{ °C}$	1700			V
Forward voltage drop	V_F	$I_F=75\text{ A}$	$T_j=25\text{ °C}$		1.8		V

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

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Peak recovery current	I_{RRM1}	$I_F=75\text{ A}$	$T_j = 25\text{ °C}$		93		A
	I_{RRM2}	$di/dt=920\text{ A}/\mu\text{s}$ $V_R=900\text{ V}$	$T_j = 125\text{ °C}$		100		
Reverse recovery charge	Q_{rr1}	$I_F=75\text{ A}$	$T_j=25\text{ °C}$		20.0		µC
	Q_{rr2}	$di/dt=920\text{ A}/\mu\text{s}$ $V_R=900\text{ V}$	$T_j=125\text{ °C}$		31.7		
Reverse recovery energy	E_{rec1}	$I_F=75\text{ A}$	$T_j=25\text{ °C}$		10.0		mJ
	E_{rec2}	$di/dt=920\text{ A}/\mu\text{s}$ $V_R=900\text{ V}$	$T_j=125\text{ °C}$		18.3		

CHIP DRAWING:

L447A1



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.