Preliminary

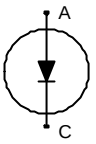
SIDC07D60AF6

Fast switching diode chip in EMCON-Technology

FEATURES:
- 600V EMCON technology 70 µm chip
- soft , fast switching
- low reverse recovery charge
- small temperature coefficient

This chip technology 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
SIDC07D60AF6	600V	22.5A	2.65 x 2.65 mm^2	sawn on foil	Q67050-A4167-A001

MECHANICAL PARAMETER:

Raster size	2.65 x 2.65	mm^2
Area total / active	7.02 / 5.01	
Anode pad size	2.17 x 2.17	
Thickness	70	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	2156 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, ≤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 4294M, Edition 2, 14.05.2003

Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}		600	V
Continuous forward current limited by T_{jmax}	I_F		22.5	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} (depending on wire bond configuration)	I_{FRM}		45	
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=600V	T_j=25°C			250	µA
Cathode-Anode breakdown Voltage	V_{Br}	I_R=1.5mA	T_j=25°C	600			V
Forward voltage drop	V_F	I_F=15A	T_j=25°C		1.45		V
		I_F=22.5A					

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=22.5A di/dt=1000A/ms V_R=400V	T_j =25°C		120		ns
	t_{rr2}		T_j =150°C		170		
Peak recovery current	I_{RRM1}	I_F=22.5A di/dt=1000A/ms V_R= 400V	T_j =25°C		17		A
	I_{RRM2}		T_j =150°C		21.5		
Reverse recovery charge	Q_{rr1}	I_F=22.5A di/dt=1000A/ms V_R= 400V	T_j=25°C		970		nC
	Q_{rr2}		T_j=150°C		1770		
Peak rate of fall of reverse recovery current	di_{rr1}/dt	I_F=22.5A di/dt=1000A/ms V_R= 400V	T_j=25°C				A/µs
	di_{rr2}/dt		T_j=150°C				
Softness	S1	I_F=22.5A di/dt=1000A/ms V_R= 400V	T_j=25°C		4.4		1
	S2		T_j=150°C		5		

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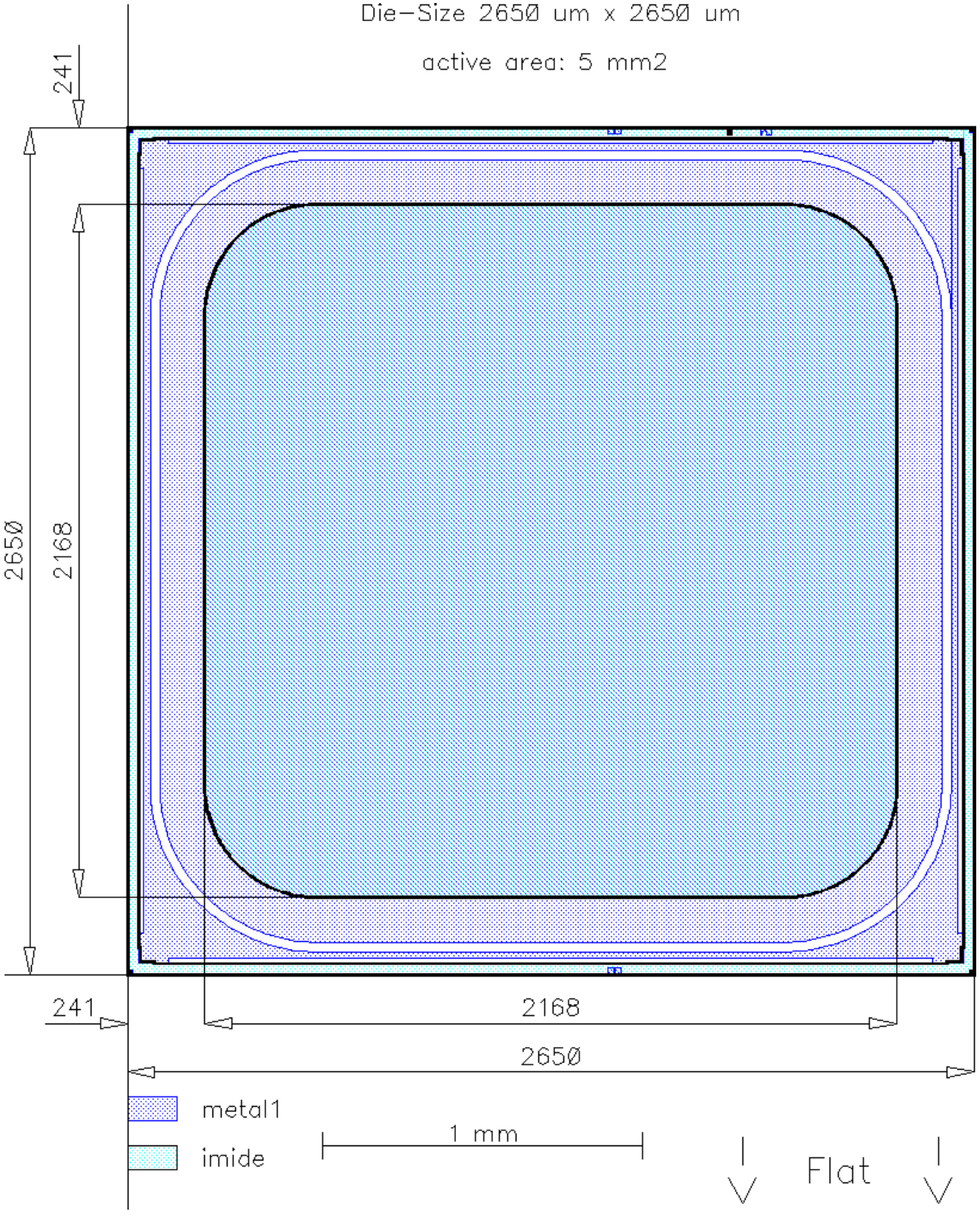
CHIP DRAWING:



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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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