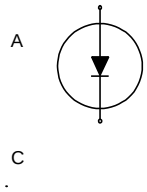
Preliminary

SIDC02D60SIC2

Silicon Carbide Schottky Diode

FEATURES:
- Worlds first 600V Schottky diode
- Revolutionary semiconductor material - Silicon Carbide
- Switching behavior benchmark
- No reverse recovery
- No temperature influence on the switching behavior
- Ideal diode for Power Factor Correction
- No forward recovery

Applications:
- SMPS, PFC, snubber



Chip Type	V_{BR}	I_F	Die Size	Package	Ordering Code
SIDC02D60SIC2	600V	6A	1.4 x 1.4 mm^2	sawn on foil	Q67050-A4162-A1
SIDC02D60SIC2	600V	6A	1.4 x 1.4 mm^2	unsawn	Q67050-A4162-A2

MECHANICAL PARAMETER:

Raster size	1.4 x 1.4	mm
Anode pad size	1.08 x 1.08	
Area total / active	1.742 / 1.191	mm^2
Thickness	401	µm
Wafer size	50	mm
Flat position	0	deg
Max. possible chips per wafer	867 pcs	
Passivation frontside	Photoimide	
Anode metalization	3200 nm Al	
Cathode metalization	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	electrically conductive glue or solder	
Wire bond	Al, ≤ 250µm	
Reject Ink Dot Size	∅ = 0.3 mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

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Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}		600	V
Surge peak reverse voltage	V_{RSM}		600	
Continuous forward current limited by T_{jmax}	I_F		6	A
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	T_C =25°C, t_P =10 ms sinusoidal	21.5	
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}	T_C = 100°C, T_j=150°C, D=0.1	28	
Non repetitive peak forward current	I_{FMAX}	T_C =25°C, tp=10µs	60	
Operating junction and storage temperature	T_j , T_{stg}		-55...+175	°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		20	200	µA
Forward voltage drop	V_F	I_F=6A	T_j=25°C		1.5	1.7	V

Dynamic Electrical Characteristics, at T_j = 25 °C, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Total capacitive charge	Q_C	I_F=6A di/dt=200A/ms V_R=400V	T_j = 150 °C		21		nC
Switching time	t_{rr}	I_F=6A di/dt=200A/ms V_R= 400V	T_j = 150 °C		n.a.		ns
Total capacitance	C	I_F=6A di/dt=200A/ms T_j=25°C f=1MHz	V_R=0V		300		pF
			V_R=300V		20		
			V_R=600V		15		

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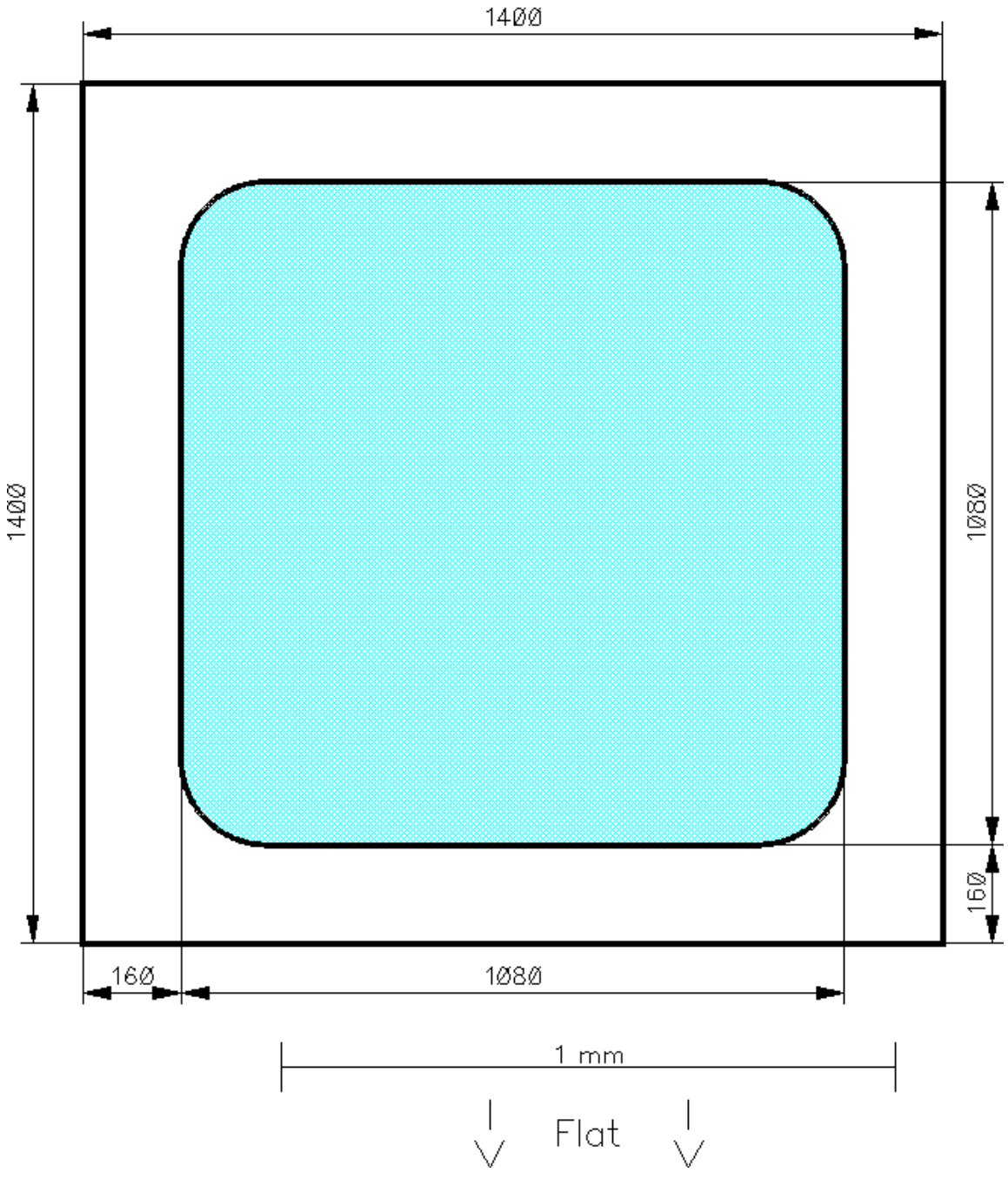
CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	INFINEON TECHNOLOGIES	SPD06S60

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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