Preliminary

SIDC03D30SIC2

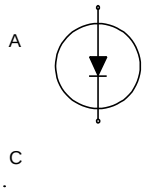
Silicon Carbide Schottky Diode

FEATURES:

- Revolutionary semiconductor material - Silicon Carbide
- Switching behavior benchmark
- No reverse recovery
- No temperature influence on the switching behavior
- No forward recovery

Applications:

- SMPS, snubber, secondary side rectification



Chip Type	V_{BR}	I_F	Die Size	Package	Ordering Code
SIDC03D30SIC2	300V	10A	1.725 x 1.4 mm^2	sawn on foil	Q67050-A4163-A101
SIDC03D30SIC2	300V	10A	1.725 x 1.4 mm^2	unsawn	Q67050-A4163-A002

MECHANICAL PARAMETER:

Raster size	1.725x 1.4	mm
Anode pad size	1.405 x 1.08	
Area total / active	2.415 / 1.548	mm^2
Thickness	399	µm
Wafer size	50	mm
Flat position	0	deg
Max. possible chips per wafer	695 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, ≤ 350µm	
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}		300	V
Surge peak reverse voltage	V_{RSM}		300	
Continuous forward current limited by T_{jmax}	I_F		10	A
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	T_C =25°C, t_P =10 ms sinusoidal	36	
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}	T_C = 100°C, T_j=150°C, D=0.1	45	
Non repetitive peak forward current	I_{FMAX}	T_C =25°C, tp=10µs	100	
Operating junction and storage temperature	T_j , T_{stg}		-55...+175	°C

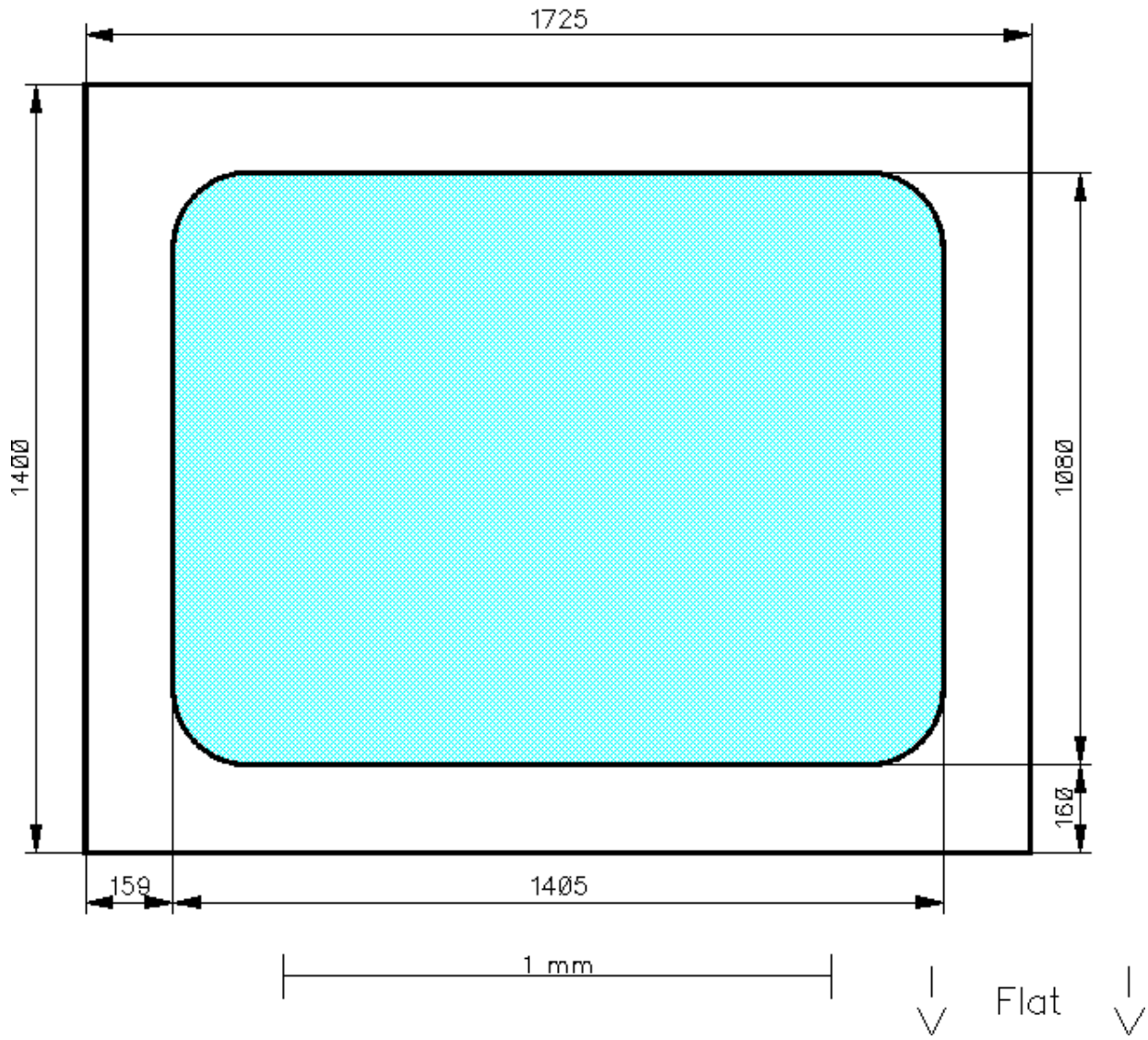
Static Electrical Characteristics (tested on chip), T_j=25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=300V	T_j=25°C		15	200	µA
Forward voltage drop	V_F	I_F=10A	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=10A di/dt=200A/ms V_R=200V	T_j = 150 °C		23		nC
Switching time	t_{rr}	I_F=10A di/dt=200A/ms V_R= 200V	T_j = 150 °C		n.a.		ns
Total capacitance	C	I_F=10A di/dt=200A/ms T_j=25°C f=1MHz	V_R=0V		600		pF
			V_R=150V		55		
			V_R=300V		40		

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	INFINEON TECHNOLOGIES	SPD10S30

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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