SIDC53D120H8

Fast switching diode chip in Emitter Controlled Technology

Features:
- 1200V Emitter Controlled technology 120 µm chip
- Soft, fast switching
- Low reverse recovery charge
- Small temperature coefficient
- Qualified according to JEDEC for target applications

Recommended for:
- Power modules and discrete devices

Applications:
- SMPS, resonant applications, drives

Chip Type	V_R	I_{Fn}	Die Size	Package
SIDC53D120H8	1200V	100A	7.3 x 7.3 mm^2	sawn on foil

Mechanical Parameters

Die size		7.3 x 7.3	mm^2
Area total		53.29	
Anode pad size		6.346 x 6.346	
Thickness		120	µm
Wafer size		200	mm
Max. possible chips per wafer		490	
Passivation frontside		Photoimide	
Pad metal		3200 nm AlSiCu	
Backside metal		Ni Ag – system To achieve a reliable solder connection it is strongly recommended not to consume the Ni layer completely during production process	
Die bond		Electrically conductive epoxy glue and soft solder	
Wire bond		Al, ≤ 500 µm	
Reject ink dot size		∅ 0.65 mm; max 1.2 mm	
Storage environment	for original and sealed MBB bags	Ambient atmosphere air, Temperature 17 °C – 25 °C, < 6 months	
	for open MBB bags	Acc. to IEC62258-3: Atmosphere > 99% Nitrogen or inert gas, Humidity < 25% RH, Temperature 17 °C – 25 °C, < 6 months	

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Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	T_{vj} = 25 °C	1200	V
Continuous forward current	I_F	T_{vj} < 150 °C	[1]	A
Maximum repetitive forward current[2]	I_{FRM}	T_{vj} < 150 °C	200	
Junction temperature range	T_{vj}		-40...+175	°C
Operating junction temperature	T_{vj}		-40...+150	°C

[1] depending on thermal properties of assembly

[2] not subject to production test - verified by design/characterisation

Static Characteristics (tested on wafer), T_{vj} = 25 °C

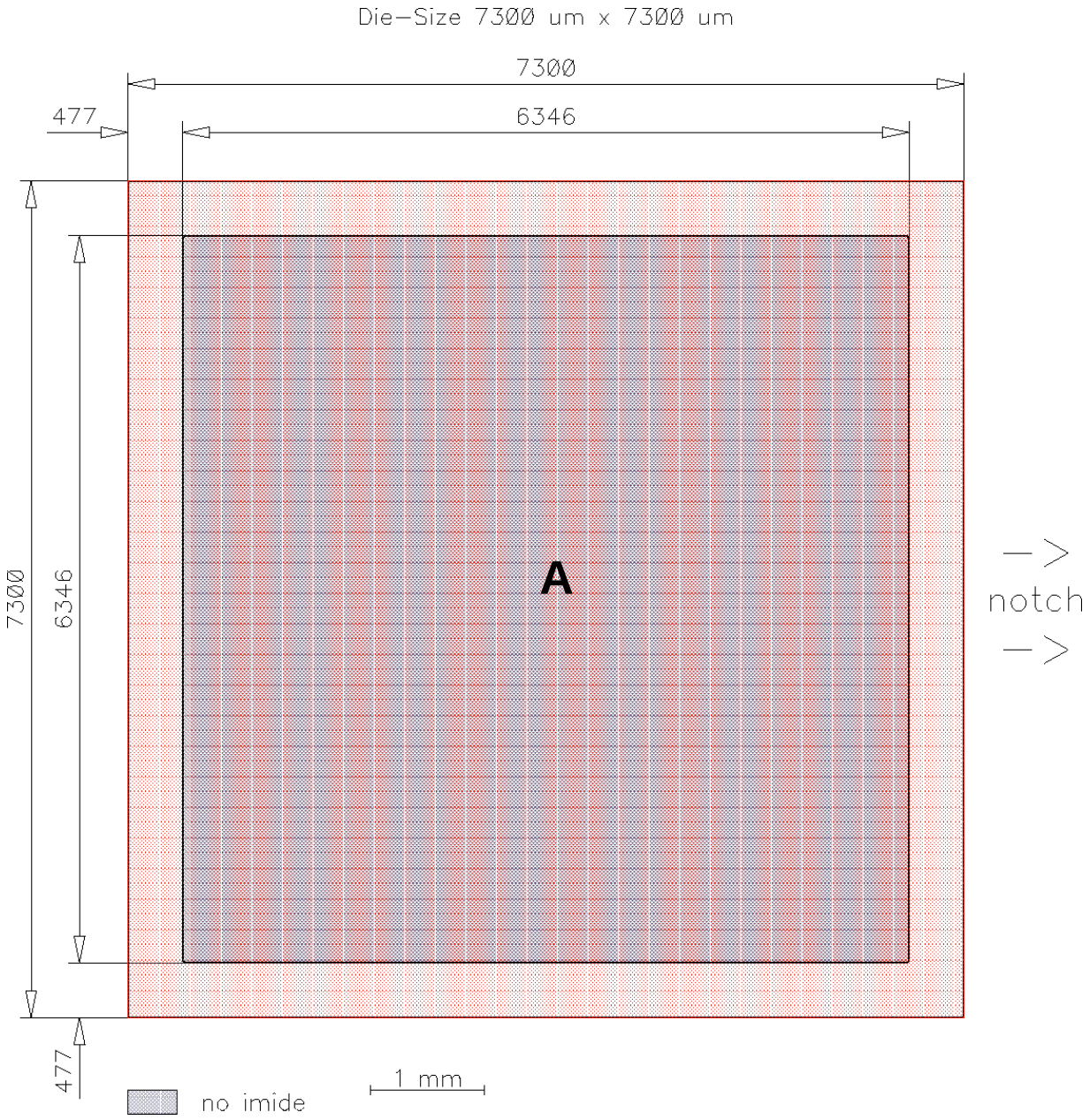
Parameter	Symbol	Condition	Value			Unit
			min.	typ.	max.	
Reverse leakage current	I_R	V_R = 1200V			27	µA
Cathode-Anode breakdown voltage	V_{BR}	I_R = 0.25 mA	1200			V
Forward voltage drop	V_F	I_F = 100A	1.23	1.6	1.97	

Further Electrical Characteristics

Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

This chip data sheet refers to the device data sheet	FS100R12KT3	Rev. 2.1, 03.10.2013

Chip Drawing



A: Anode pad

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Bare Die Product Specifics

Test coverage at wafer level cannot cover all application conditions. Therefore it is recommended to test all characteristics which are relevant for the application at package level, including RBSOA and SCSOA.

Description

AQL 0.65 for visual inspection according to failure catalogue

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Revision History

Version	Subject (major changes since last revision)	Date
2.0	Final data sheet	30.12.2014
2.1	Editorial changes	14.10.2015

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