

Fast switching diode chip in Emitter Controlled Technology

Features:

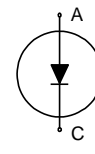
- 1200V technology 120 μm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient
- qualified according to JEDEC for target applications

Recommended for:

- power modules and discrete devices

Applications:

- SMPS, resonant applications, drives



Chip Type	V_R	I_{Fn}	Die Size	Package
SIDC14D120H8	1200V	25A	3.8 x 3.8 mm ²	sawn on foil

Mechanical Parameters

Die size		3.8 x 3.8	mm ²
Area total		14.44	
Anode pad size		3.08 x 3.08	
Thickness		120	μm
Wafer size		200	mm
Max. possible chips per wafer		1906	
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, $\leq 500\mu\text{m}$	
Reject ink dot size		$\varnothing 0.65\text{mm}$; max 1.2mm	
Storage environment	for original and sealed MBB bags	Ambient atmosphere air, Temperature 17°C – 25°C, < 6 month	
	for open MBB bags	Acc. to IEC62258-3: Atmosphere >99% Nitrogen or inert gas, Humidity <25%RH, Temperature 17°C – 25°C, < 6 month	



SIDC14D120H8

Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	$T_{vj} = 25\text{ °C}$	1200	V
Continuous forward current	I_F	$T_{vj} < 150\text{ °C}$	1 ¹⁾	A
Maximum repetitive forward current ²⁾	I_{FRM}	$T_{vj} < 150\text{ °C}$	50	
Junction temperature range	T_{vj}		-40...+175	°C
Operating junction temperature	T_{vj}		-40...+150	

¹⁾ depending on thermal properties of assembly

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

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

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Reverse leakage current	I_R	$V_R = 1200\text{ V}$			20	µA
Cathode-Anode breakdown Voltage	V_{BR}	$I_R = 0.25\text{ mA}$	1200			V
Forward voltage drop	V_F	$I_F = 25\text{ A}$	1.23	1.6	1.97	

Electrical Characteristics (not subject to production test - verified by design/characterization)

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Forward voltage drop	$T_{vj} = 125\text{ °C}$ V_F	$I_F = 25\text{ A}$		1.65		V

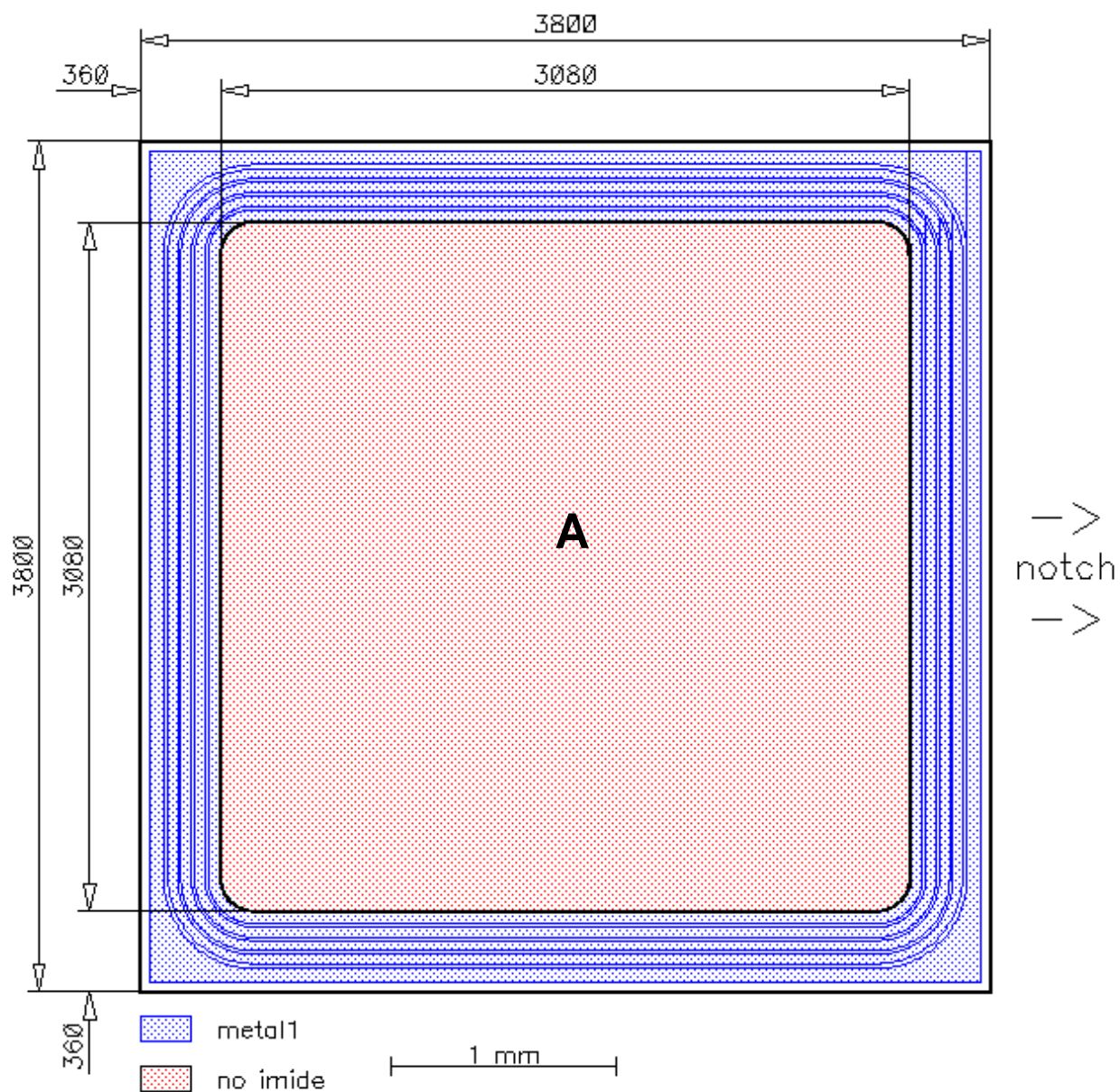
Further Electrical Characteristics

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	FS25R12YT3	Rev. 2.0
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Chip Drawing

Die-Size 3800 um x 3800 um



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	Subjects (major changes since last revision)	Date
2.0	Final data sheet	26.10.2012
2.1	Operating junction temperature	15.05.2013
2.2	Editorial changes	14.10.2015



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