

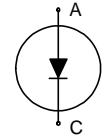
## Fast switching diode chip in Emitter Controlled Technology

### Features:

- 1200V technology 120  $\mu\text{m}$  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
SIDC56D120F6	1200V	75A	7.5 x 7.5 mm <sup>2</sup>	sawn on foil

### Mechanical Parameters

Die size		7.5 x 7.5	mm <sup>2</sup>
Area total		56.25	
Anode pad size		6.78 x 6.78	
Thickness		120	$\mu\text{m}$
Wafer size		150	mm
Max. possible chips per wafer		248	
Passivation frontside		Photoimide	
Pad metal		3200 nm AlSiCu	
Backside metal		Ni Ag –system	
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	



# SIDC56D120F6

## 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 <sup>1)</sup>	A
Maximum repetitive forward current <sup>2)</sup>	$I_{FRM}$	$T_{vj} < 150\text{ °C}$	150	
Operating junction and storage temperature	$T_{vj}, T_{stg}$		-55...+150	°C

<sup>1)</sup> depending on thermal properties of assembly

<sup>2)</sup> 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	$V_F$	$I_F = 75\text{ A}$	1.68	2.1	2.42	

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

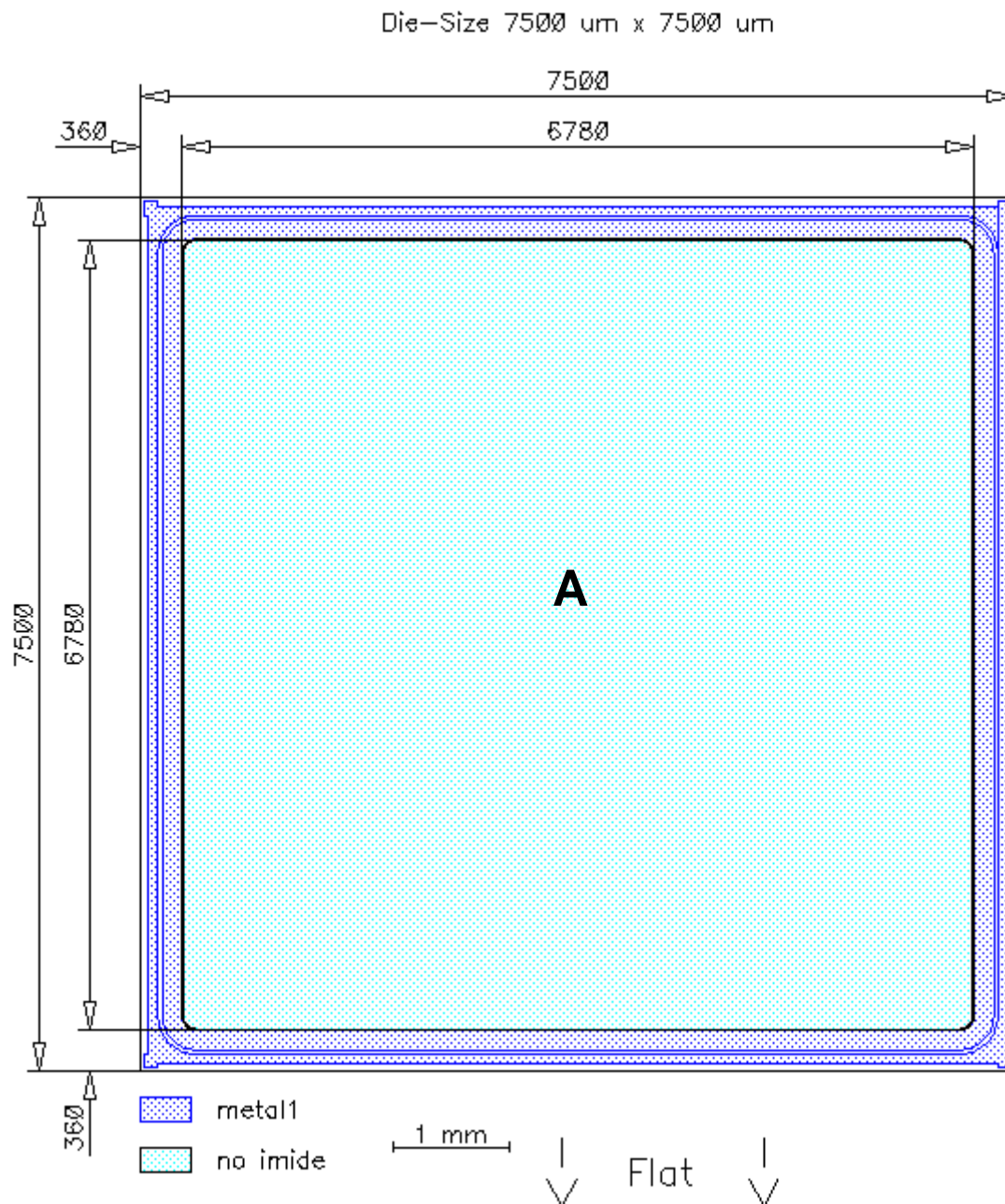
Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Forward voltage drop	$T_{vj} = 125\text{ °C}$ $V_F$	$I_F = 75\text{ A}$		1.7		V

## 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	F4-75R12KS4_B11	Rev. 2.0
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## Chip Drawing



A: Anode pad



# SIDC56D120F6

## 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

**Published by**  
**Infineon Technologies AG**  
**81726 Munich, Germany**  
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