

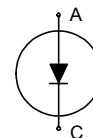
## Fast switching diode

### Features:

- 600V Emitter Controlled technology 70  $\mu\text{m}$  chip
- soft , fast switching
- low reverse recovery charge
- small temperature coefficient

### This chip is used for:

- power modules and discrete devices



### Applications:

- SMPS, resonant applications, drives

Chip Type	$V_R$	$I_F$	Die Size	Package
SIDC14D60F6	600V	45A	3.8 x 3.8 mm <sup>2</sup>	sawn on foil

### Mechanical Parameters

Raster size	3.8 x 3.8	mm <sup>2</sup>
Area total	14.44	
Anode pad size	3.08 x 3.08	
Thickness	70	$\mu\text{m}$
Wafer size	150	mm
Max. possible chips per wafer	1018	
Passivation frontside	Photoimide	
Pad metal	3200 nm AlSiCu	
Backside metal	Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	Electrically conductive glue or solder	
Wire bond	Al, $\leq 250\mu\text{m}$	
Reject ink dot size	$\varnothing 0.65\text{mm}$ ; max 1.2mm	
Recommended storage environment	Store in original container, in dry nitrogen, in dark environment, < 6 month at an ambient temperature of 23°C	



# SIDC14D60F6

## Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$	$T_{vj} = 25\text{ °C}$	600	V
Continuous forward current	$I_F$	$T_{vj} < 150\text{ °C}$	1)	A
Maximum repetitive forward current	$I_{FRM}$	$T_{vj} < 150\text{ °C}$	90	
Junction temperature range	$T_{vj}$		-40...+175	°C
Operating junction temperature	$T_{vj}$		-40...+150	°C
Dynamic ruggedness <sup>2)</sup>	$P_{max}$	$I_{Fmax} = 90\text{A}, V_{Rmax} = 600\text{V},$ $T_{vj} \leq 150\text{ °C}$	tbd	kW

1) depending on thermal properties of assembly

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

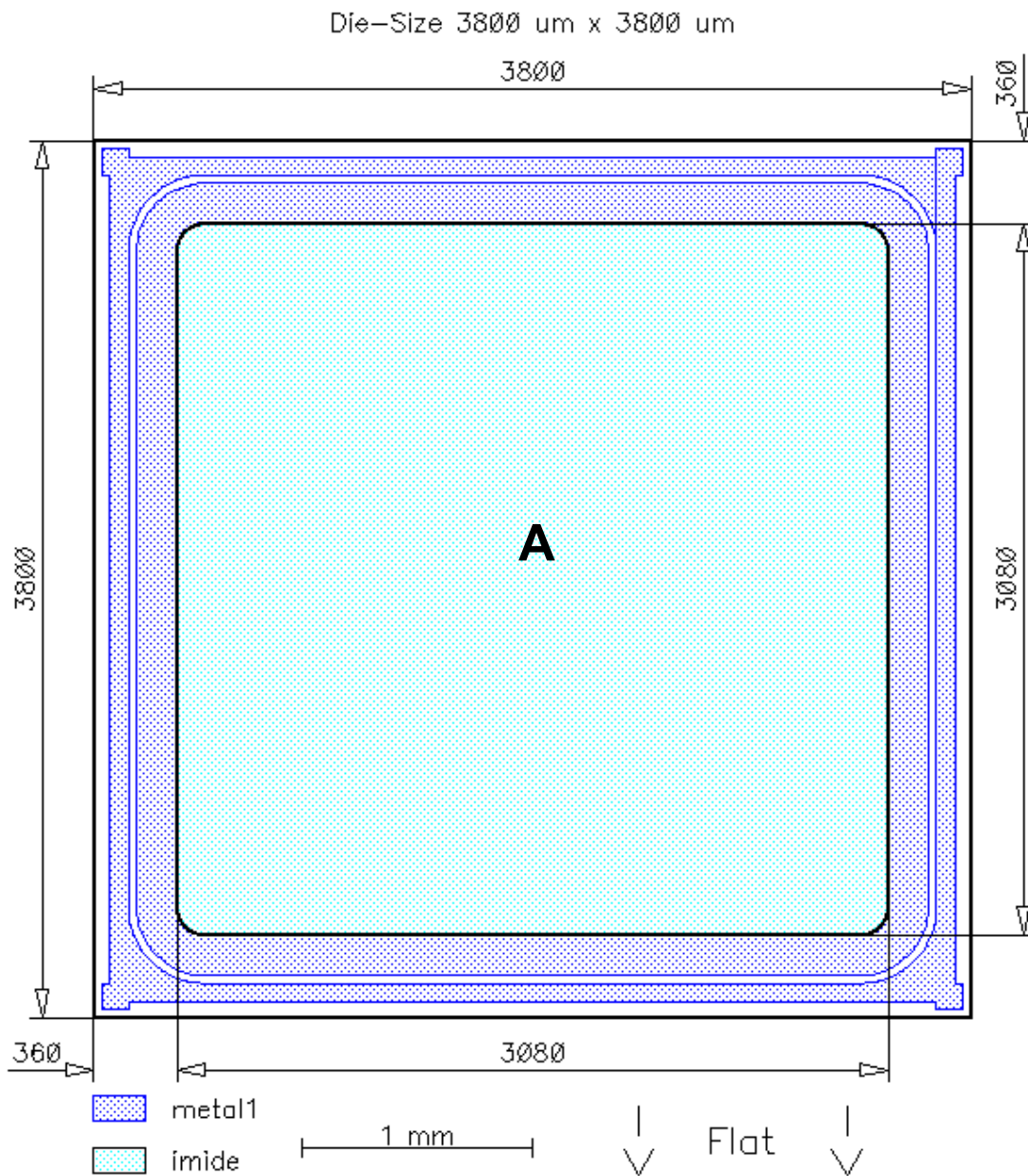
## Static Characteristic (tested on wafer), $T_{vj} = 25\text{ °C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Reverse leakage current	$I_R$	$V_R = 600\text{V}$			27	$\mu\text{A}$
Cathode-Anode breakdown Voltage	$V_{BR}$	$I_R = 3\text{mA}$	600			V
Diode forward voltage	$V_F$	$I_F = 45\text{A}$		1.6		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.

## Chip Drawing



**A: Anode pad**



# SIDC14D60F6

## 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**  
**© 2010 Infineon Technologies AG**  
**All Rights Reserved.**

## Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

## Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office ([www.infineon.com](http://www.infineon.com)).

## Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office. Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.