

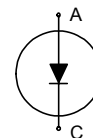
Fast switching diode

Features:

- 600V Emitter Controlled technology 70 μm 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 ²	sawn on foil

Mechanical Parameters

Raster size	3.8 x 3.8	mm ²
Area total	14.44	
Anode pad size	3.08 x 3.08	
Thickness	70	μm
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	

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 ²⁾	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

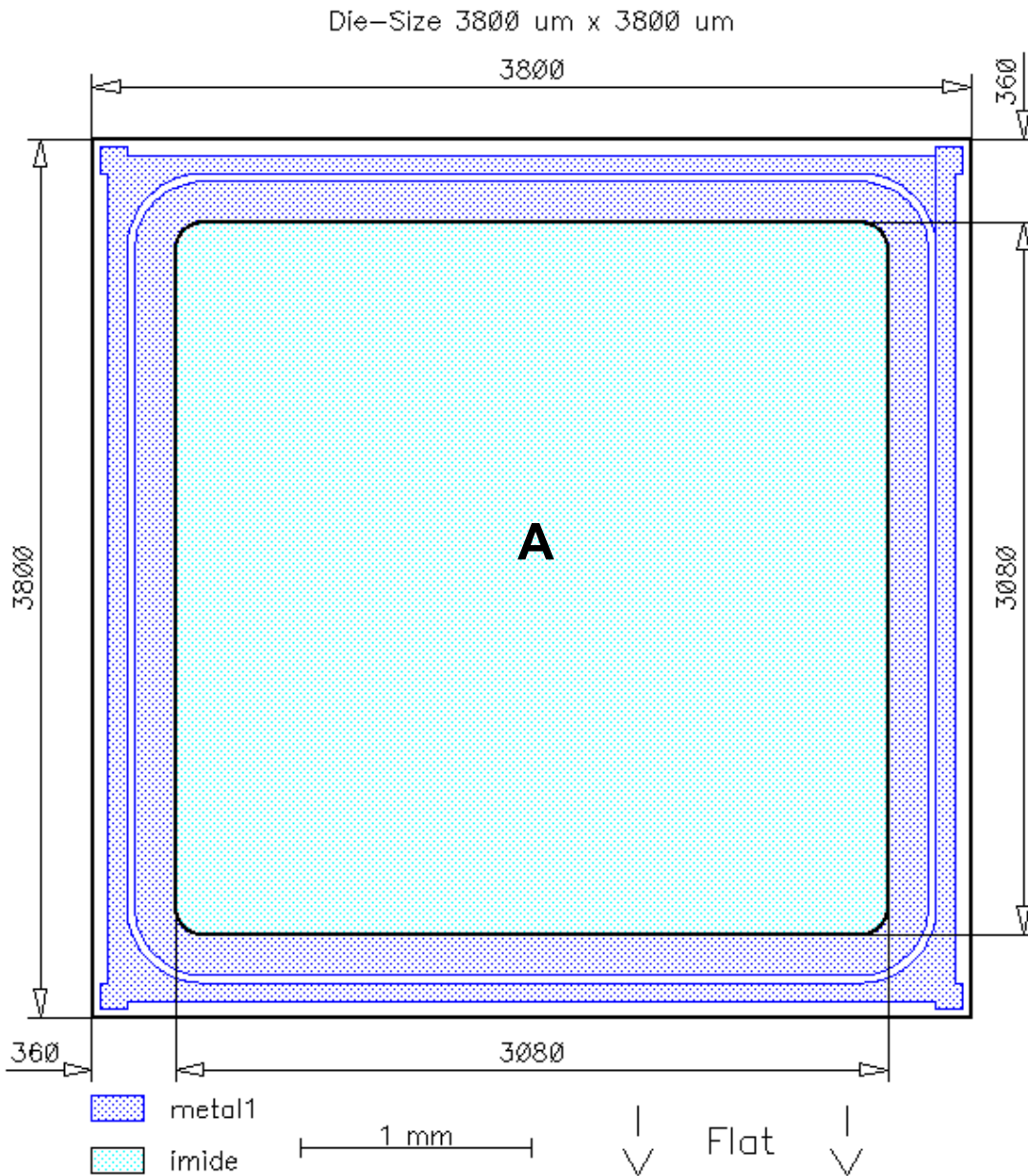
Static Characteristic (tested on wafer), $T_{vj} = 25\text{ °C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Reverse leakage current	I_R	$V_R = 600\text{V}$			27	μA
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

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