

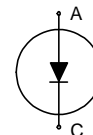
Fast switching diode chip in Emitter Controlled 3 -Technology

**Features:**

- 600V Emitter Controlled 3 technology  
70  $\mu\text{m}$  chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

**This chip is used for:**

- Power module



**Applications:**

- Drives

Chip Type	$V_R$	$I_F$	Die Size	Package
SIDC38D60C8	600V	150A	4.9 x 7.8 mm <sup>2</sup>	sawn on foil

**Mechanical Parameters**

Raster size	4.9 x 7.8	mm <sup>2</sup>
Area total	38.22	
Anode pad size	4.28 x 7.18	
Thickness	70	$\mu\text{m}$
Wafer size	200	mm
Max. possible chips per wafer	694	
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, $\leq 500\mu\text{m}$	
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	$I_{FRM}$	$T_{vj} < 150\text{ °C}$	300	
Junction temperature range	$T_{vj}$		-40...+175	°C
Operating junction temperature	$T_{vj}$		-40...+150	°C
Dynamic ruggedness <sup>2)</sup>	$P_{max}$	$I_{Fmax} = 300\text{ A}, V_{Rmax} = 600\text{ V},$ $T_{vj} \leq 150\text{ °C}$	tbd	kW

1) depending on thermal properties of assembly

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

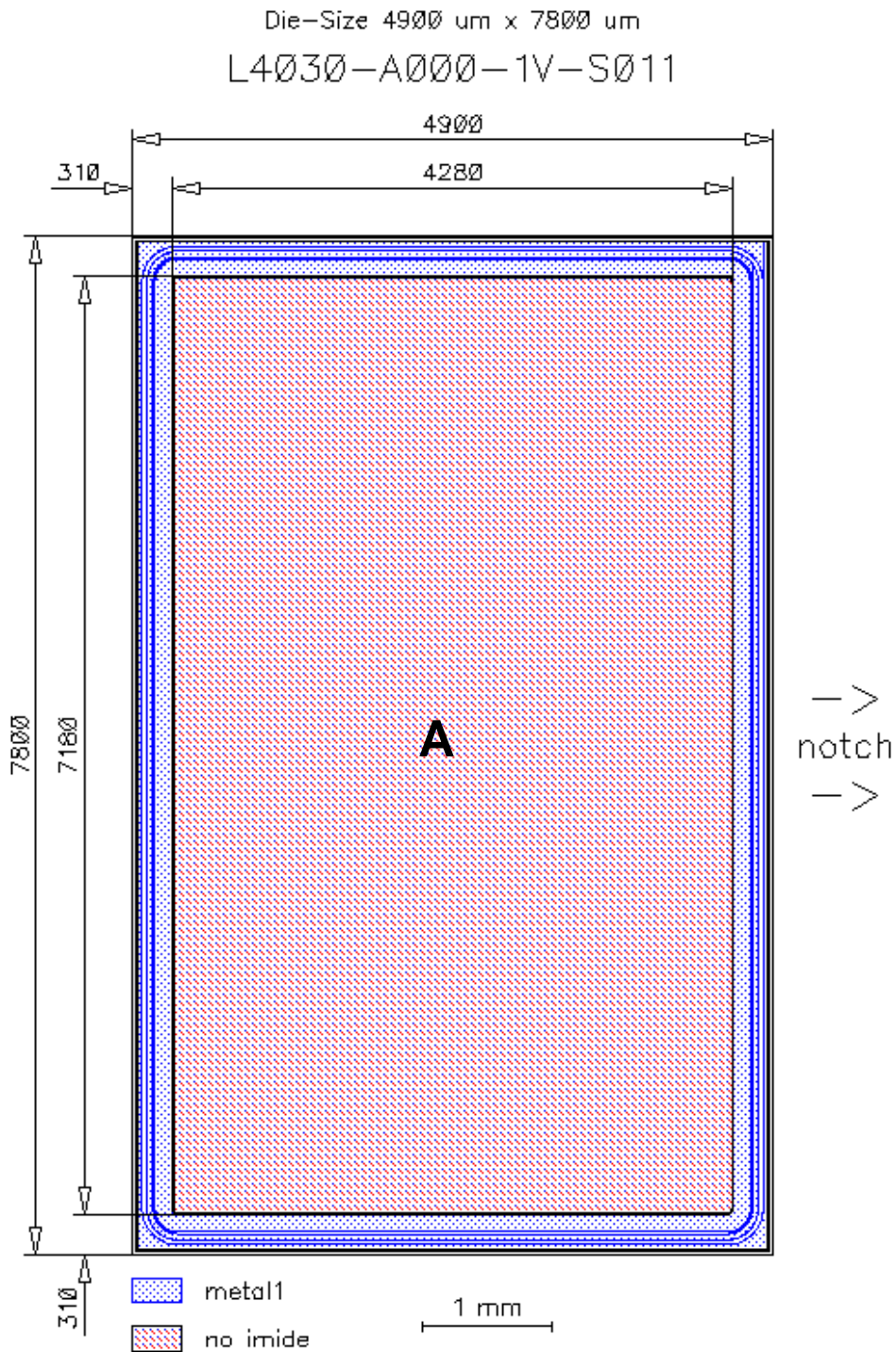
## Static Characteristics (tested on wafer), $T_{vj} = 25\text{ °C}$

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	$V_{BR}$	$I_R = 0.25\text{ mA}$	600			V
Diode forward voltage	$V_F$	$I_F = 150\text{ A}$	1.2	1.6	1.9	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



# SIDC38D60C8

## 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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