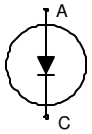
SIDC56D170E6

Fast switching diode chip in Emitter Controlled -Technology

Features:
- 1700V technology, Emitter Controlled
- 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
SIDC56D170E6	1700V	75A	7.5 x 7.5mm^2	sawn on foil

Mechanical Parameter

Raster size	7.5 x 7.5	mm^2
Area total	56.25	
Anode pad size	5.48 x 5.48	
Thickness	200	µm
Wafer size	150	mm
Max. possible chips per wafer	247	
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, ≤500µm	
Reject ink dot size	∅ 0.65mm; 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 °C	1700	V
Continuous forward current	I_F	T_{vj} < 150°C	[1]	A
Maximum repetitive forward current	I_{FRM}	T_{vj} < 150°C	150	
Junction temperature range	T_{vj}		-40...+175	°C
Operating junction temperature	T_{vj}		-40...+150	°C
Dynamic ruggedness[2]	P_{max}	I_{Fmax} = 150A, V_{Rmax} = 1700V T_{vj} ≤ 150°C	tbd	kW

[1] depending on thermal properties of assembly

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

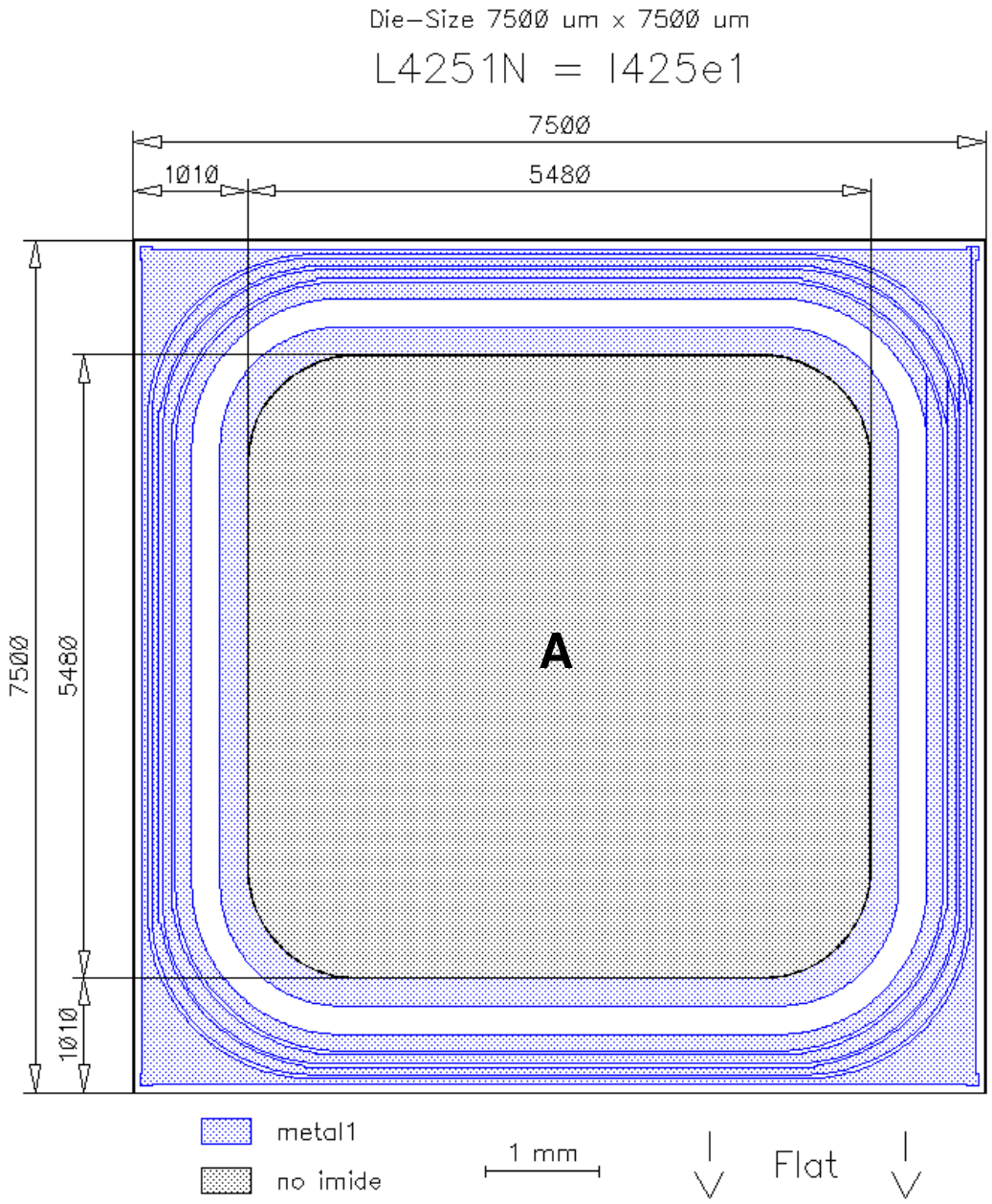
Static Characteristic (tested on wafer), T_{vj} = 25 °C

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Reverse leakage current	I_R	V_R=1700V			27	µA
Cathode-Anode breakdown Voltage	V_{BR}	I_R=5mA	1700			V
Diode forward voltage	V_F	I_F=75A		2.15		V

Further Electrical Characteristic

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

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Description
AQL 0.65 for visual inspection according to failure catalogue
Electrostatic Discharge Sensitive Device according to MIL-STD 883

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