

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
SIDC56 D170E6	1700V	75A	7.5 x 7.5mm ²	sawn on foil

Mechanical Parameter

Mechanical Parameter			
Raster size	7.5 x 7.5		
Area total	56.25	mm ²	
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	Ø 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}	<i>T</i> _{vj} = 25 °C	1700	V
Continuous forward current	I _F	<i>T</i> _{vj} < 150°C	1)	A
Maximum repetitive forward current	I _{FRM}	<i>T</i> _{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}	$I_{\rm Fmax}$ = 150A, $V_{\rm Rmax}$ = 1700V $T_{\rm vj} \le 150^{\circ}{\rm C}$	tbd	kW

¹⁾ depending on thermal properties of assembly

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

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

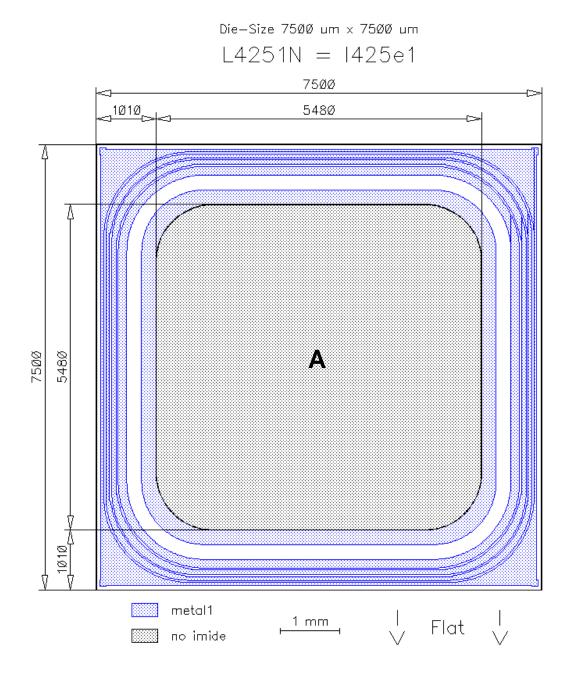
Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	Onic
Reverse leakage current	I _R	V _R =1700V			27	μA
Cathode - Anode breakdown Voltage	V _{BR}	/ _R =5m A	1700			V
Diode forward voltage	V _F	/ _F =75 A		2.15		V

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



Description

AQL 0.65 for visual inspection according to failure catalogue

Electrostatic Discharge Sensitive Device according to MIL-STD 883

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