

Fast switching diode chip in Emitter Controlled 3 -Technology

Features:

- 600V Emitter Controlled 3 technology 70 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- Power module
- Discrete components



Applications:

• Drives

Chip Type	V _R	I _F	Die Size	Package
SIDC14D60C8	600V	50A	4.6 x 3.05 mm ²	sawn on foil

Mechanical Parameters

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Raster size	4.6 x 3.05		
Area total	14.03	mm ²	
Anode pad size	3.9 x 2.35		
Thickness	70	μm	
Wafer size	200	mm	
Max. possible chips per wafer	1960		
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}	$T_{\rm vj} = 25 ^{\circ}{\rm C}$	600	V
Continuous forward current	I _F	<i>T</i> _{vj} < 150℃	1)	_
Maximum repetitive forward current	I _{FRM}	<i>T</i> _{vj} < 150℃	100	A
Junction temperature range	T _{vj}		-40+175	°C
Operating junction temperature	T _{vj}		-40+150	°C
Dynamic ruggedness ²⁾	P _{max}	$I_{\rm Fmax}$ = 100A, $V_{\rm Rmax}$ = 600V, $T_{\rm vj} \leq 150 {\rm C}$	tbd	kW

¹⁾ depending on thermal properties of assembly

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

Static Characteristics (tested on wafer), $T_{vj} = 25 \ ^{\circ}{\rm C}$

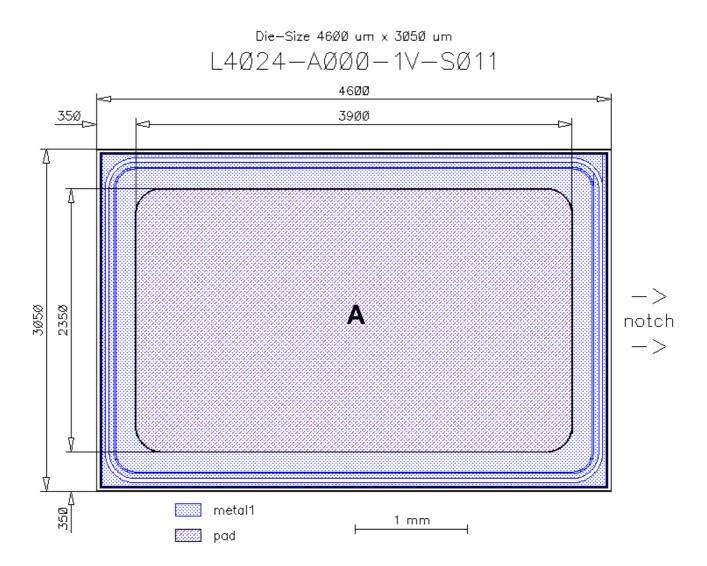
Parameter	Symbol	Conditions	Value			Unit
Falametei	Symbol	Conditions	min.	typ.	max.	Onne
Reverse leakage current	I _R	V _R =600V			27	μA
Cathode-Anode breakdown Voltage	V _{BR}	/ _R =0.25mA	600			V
Diode forward voltage	V _F	/ _F =50A	1.2	1.6	1.9	V

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



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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