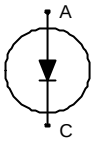
IDC51D120T6H

Diode EMCON 4 High Power Chip

FEATURES:
- 1200V EMCON 4 technology
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:
- medium / high power modules



Applications:
- medium / high power drives

Chip Type	V_R	I_F	Die Size	Package
IDC51D120T6H	1200V	100A	7.00 x 7.30 mm^2	sawn on foil

MECHANICAL PARAMETER:

Raster size	7.00 x 7.30	mm^2
Area total / active	51.10 / 39.99	
Anode pad size	6.046 x 6.346	
Thickness	120	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	277 pcs	
Passivation frontside	Photoimide	
Pad metall	3200 nm AlSiCu	
Backside metall	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, < 6 month at an ambient temperature of 23°C	

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Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}		1200	V
Continuous forward current limited by T_{jmax}	I_F		[1]	A
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}		200	
Maximum junction and storage temperature	$T_{vj,max}$, T_{stg}		-40...+175	°C
Reverse bias safe operating area[2] (RBSOA)	$I_{F,max}$ = 200A, $V_{R,max}$ = 1200V, $T_{vj,op} \leq$ 150°C, P_{max} = **tbd** kW			

[1] depending on thermal properties of assembly

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

Static Electrical Characteristics (tested on wafer), T_j=25 °C

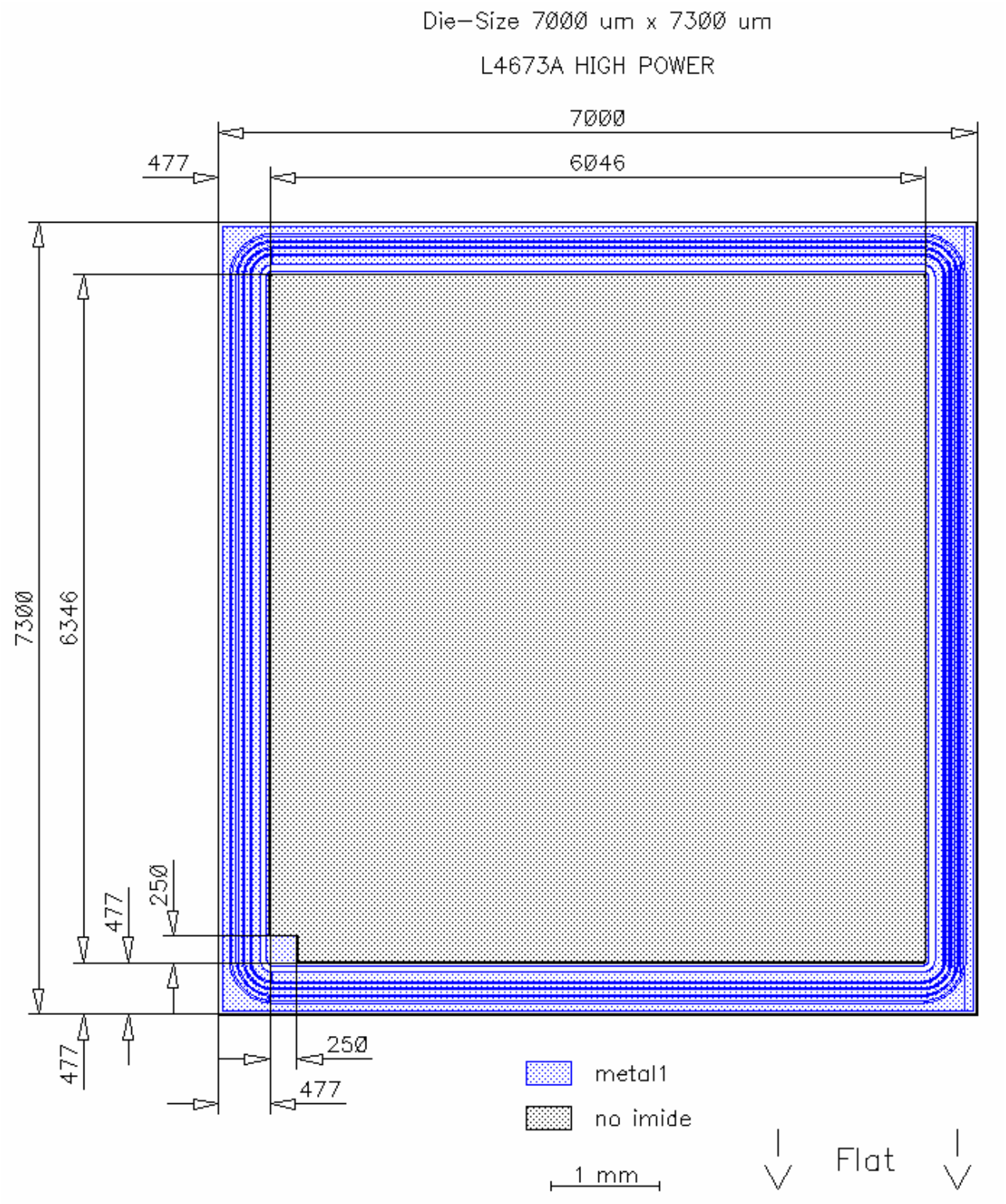
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=1200V	T_j=25°C			18	µA
Cathode-Anode breakdown Voltage	V_{Br}	I_R=0.25mA	T_j=25°C	1200			V
Forward voltage drop	V_F	I_F=100A	T_j=25°C	1.55	1.9	2.25	V

Dynamic Electrical Characteristics inductive load (not subject to production test - verified by design/characterization)

Parameter	Symbol	Conditions		Value [2]			Unit
				min.	Typ.	max.	
Peak reverse recovery current	I_{RM}	I_F=A di/dt=A/ms V_R=V V_{GE}=-15V	T_j = 25 °C T_j = 125 °C T_j = 150 °C		tbd		A
Reverse recovery charge	Q_r	I_F=A di/dt=A/ms V_R=V V_{GE}=-15V	T_j = 25 °C T_j = 125 °C T_j = 150 °C		tbd		µC
Reverse recovery energy	E_{rec}	I_F=A di/dt=A/ms V_R=V V_{GE}=-15V	T_j = 25 °C T_j = 125 °C T_j = 150 °C		tbd		mJ

[2] values also influenced by parasitic L- and C- in measurement and package.

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	tbd	

Description:

AQL 0,65 for visual inspection according to failure catalog

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Test-Normen Villach/Prüffeld

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