

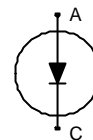
Diode EMCON 4 Medium Power Chip

FEATURES:

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

This chip is used for:

- low / medium power modules



Applications:

- low / medium power drives

Chip Type	V _R	I _F	Die Size	Package
IDC51D120T6M	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	110	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	Ø 0.65mm; max 1.2mm	
Recommended storage environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C	

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	
Operating junction and storage temperature	T_j, T_{stg}		-40...+175	°C
Safe operating area ²⁾ (SOA)	P_{Max}	$T_{vj} = 150^\circ\text{C}$	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), $T_j = 25^\circ\text{C}$

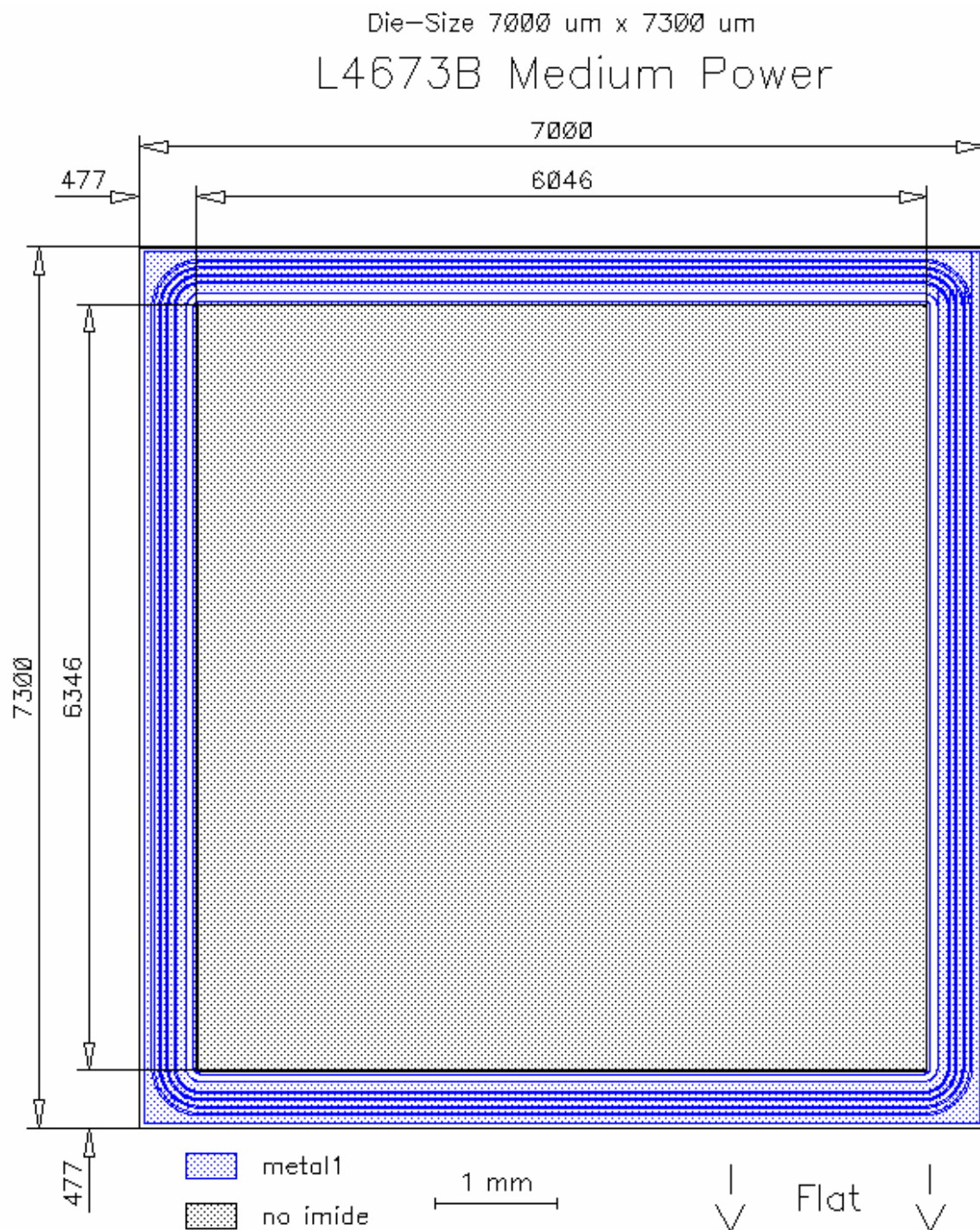
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	$V_R = 1200\text{V}$	$T_j = 25^\circ\text{C}$			18	µA
Cathode-Anode breakdown Voltage	V_{Br}	$I_R = 0.25\text{mA}$	$T_j = 25^\circ\text{C}$	1200			V
Forward voltage drop	V_F	$I_F = 100\text{A}$	$T_j = 25^\circ\text{C}$	1.35	1.7	2.05	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}	$I_F = A$ $di/dt = A/ms$ $V_R = V$ $V_{GE} = -15\text{V}$	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$ $T_j = 150^\circ\text{C}$		tbd		A
Reverse recovery charge	Q_r	$I_F = A$ $di/dt = A/ms$ $V_R = V$ $V_{GE} = -15\text{V}$	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$ $T_j = 150^\circ\text{C}$		tbd		µC
Reverse recovery energy	E_{rec}	$I_F = A$ $di/dt = A/ms$ $V_R = V$ $V_{GE} = -15\text{V}$	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$ $T_j = 150^\circ\text{C}$		tbd		mJ

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

CHIP DRAWING:





IDC51D120T6M

FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	tbd	
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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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