

Diode

Emitter Controlled 4 Medium Power Technology IDC10D120T8M

Data Sheet

Industrial Power Control

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Diode Chip in Emitter Controlled 4 Medium Power Technology

Features:

1200V Emitter Controlled 4 technology 110µm chip

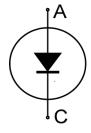
- Soft, fast switching
- Low reverse recovery charge
- Small temperature coefficient

Recommended for:

• Low / medium power modules

Applications:

• Low / medium power drives



Chip Type	V R	I Fn	Die Size	Package
IDC10D120T8M	1200V	15A	3.30mm x 2.98mm	Sawn on foil

Mechanical Parameters

Die size		3.30 x 2.98		
Area total		9.83	mm²	
Anode pad size		See chip drawing		
Silicon thickness		110 µn		
Wafer size		200	mm	
Maximum possible chi	ps per wafer	2818		
Passivation frontside		Photoimide		
Pad metal		3.2µm AlSiCu		
Backside metal		Ni Ag – system To achieve a reliable solder connection it is strongly recommended not to consume the Ni layer completely during production process		
Die bond		Electrically conductive epoxy glue and soft solder		
Wire bond	Al, ≤500µm			
Reject ink dot size (va	lid for inked delivery form only)	Ø 0.65mm; max 1.2mm		
Storage environment (<12 months)	for original and sealed MBB bags	Ambient atmosphere air, temperature 17°C – 25°C		
	for open MBB bags	Acc. IEC 62258-3; Section 9.4 Storage Environme		

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Maximum Ratings

In general, from reliability and lifetime point of view, the lower the operation junction temperature and/or the applied voltage, the greater the expected lifetime of any semiconductor device.

Not subject to production test, specified by design.

Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage, <i>T</i> _{vj} =25°C	Vrrm	1200	V
Continuous forward current, limited by $T_{vj max}$ ¹	lF	-	•
Maximum repetitive forward current, t_p limited by $T_{vj max}$	I _{FRM}	30	A
Junction temperature	T _{vj}	-40+175	°C
Operating junction temperature	T _{vj op}	-40+150	°C

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

Parameter	Symbol	Conditions	Value			Unit
Parameter	Symbol Conditions		min.	typ.	max.	Unit
Reverse leakage current	I _R	V _R =1200V	-	-	3.5	μA
Cathode-anode breakdown voltage	Vbr	<i>I</i> _R =0.25mA	1200	-	-	V
Forward voltage drop	VF	<i>I</i> ⊧=15A	1.35	1.70	2.05	-

Further Electrical Characteristics

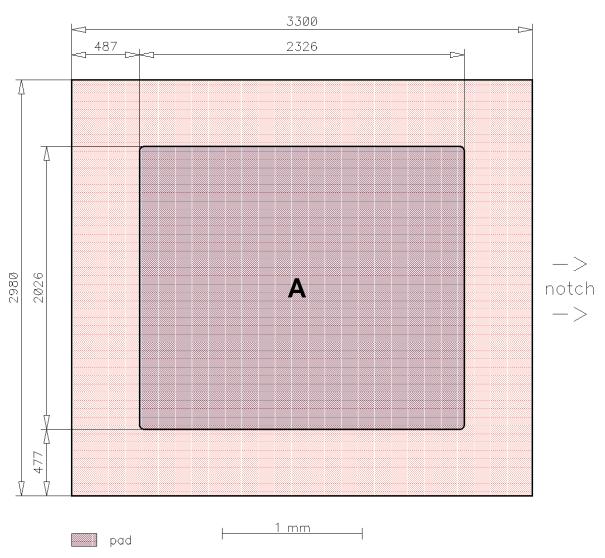
Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

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¹ Depending on thermal properties of assembly.



Chip Drawing



Die—Size 3300 um x 2980 um

A = Anode pad

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Bare Die Product Specifics

Test coverage at wafer level cannot cover all application conditions. Therefore it is recommended to test all characteristics which are relevant for the application at package level, including RBSOA and SCSOA.

Description

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

Revision History

Revision	Subjects (major changes since last revision)	Date
2.0	Final data sheet	22.08.2016
2.1	Editorial changes	09.04.2021

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