

# Diode

Emitter Controlled 4 Medium Power Technology  
**IDC08D120T8M**

Data Sheet

Industrial Power Control



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## Diode Chip in Emitter Controlled 4 Medium Power Technology

### Features:

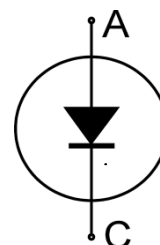
- 1200V Emitter Controlled 4 technology  
110µm chip
- Soft, fast switching
- Low reverse recovery charge
- Small temperature coefficient

### Recommended for:

- Low / medium power modules

### Applications:

- Low / medium power drives



Chip Type	$V_R$	$I_{Fn}$	Die Size	Package
IDC08D120T8M	1200V	10A	3.41mm x 2.20mm	Sawn on foil

### Mechanical Parameters

Die size		3.41 x 2.20	mm <sup>2</sup>
Area total		7.50	
Anode pad size		2.436 x 1.246	
Silicon thickness		110	µm
Wafer size		200	mm
Maximum possible chips per wafer		3711	
Passivation frontside		Photoimide	
Pad metal		3200nm 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		Ø 0.65mm; max 1.2mm	
Storage environment (<6 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 Environment.	

## 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.

Parameter	Symbol	Conditions	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$	$T_{vj}=25^{\circ}\text{C}$	1200	V
Continuous forward current <sup>1</sup>	$I_F$		-	A
Maximum repetitive forward current <sup>2</sup>	$I_{FRM}$		20	
Junction temperature	$T_{vj}$		-40...+175	$^{\circ}\text{C}$
Operating junction temperature	$T_{vj\text{ op}}$		-40...+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Reverse leakage current	$I_R$	$V_R=1200\text{V}$	-	-	2.7	$\mu\text{A}$
Cathode-anode breakdown voltage	$V_{BR}$	$I_R=0.25\text{mA}$	1200	-	-	V
Forward voltage drop	$V_F$	$I_F=10\text{A}$	1.35	1.70	2.05	

## Further Electrical Characteristics

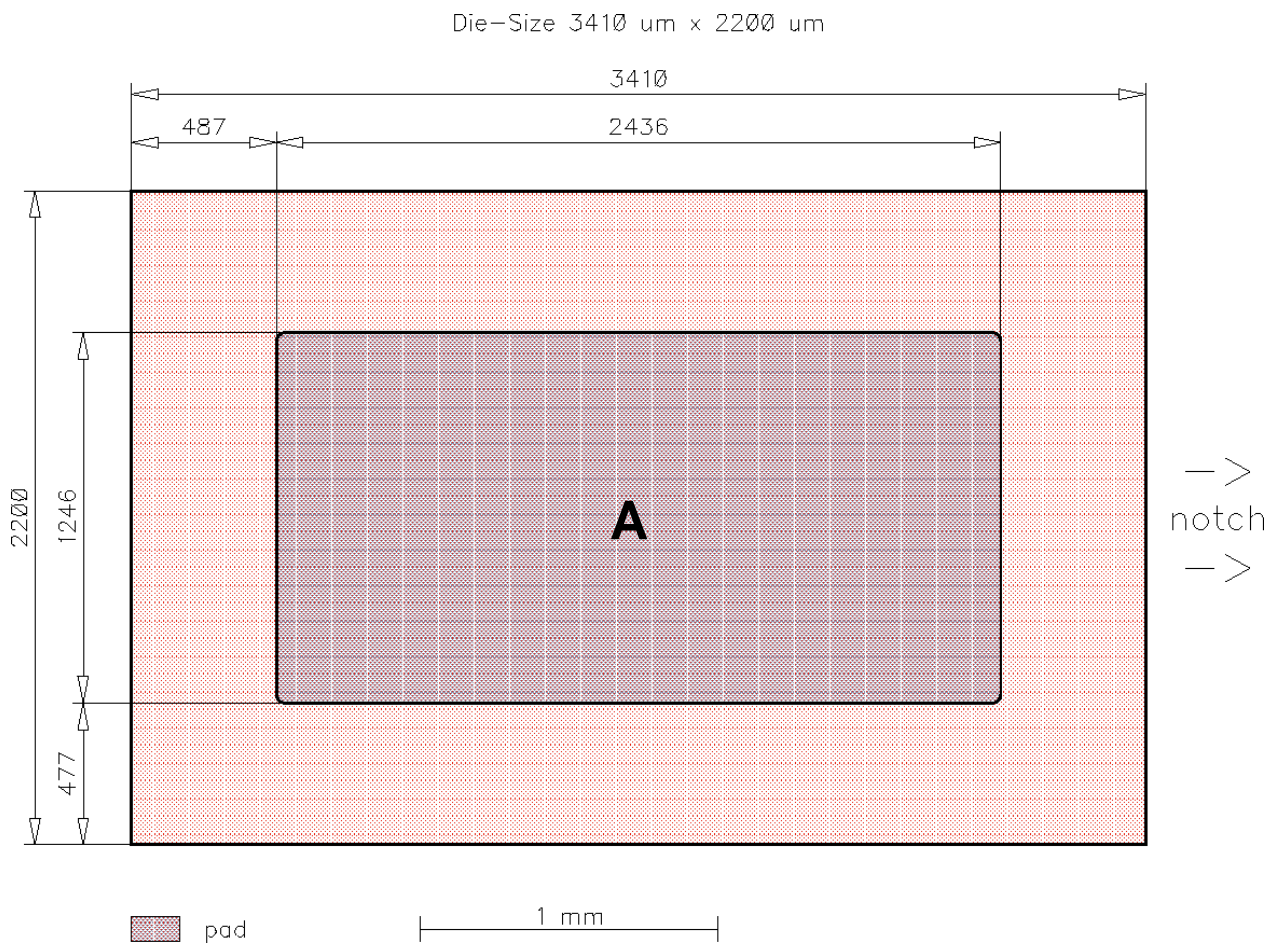
Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

Application example	FP10R12W1T4_B11	Rev. 2.0
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<sup>1</sup> Depending on thermal properties of assembly.

<sup>2</sup> Not subject to production test - verified by design/characterization.

## Chip Drawing



**A** = Anode pad



**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

**Relevant Application Notes**




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