MOSFET

Metal Oxide Semiconductor Field Effect Transistor

Bare Die

OptiMOS™3 Power MOS Transistor Chip
IPC302N20N3

Data Sheet

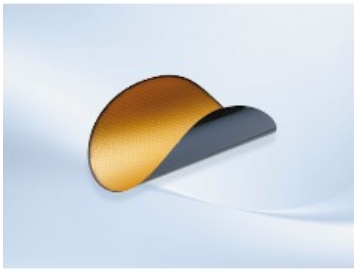
Rev. 2.6
Final

Industrial & Multimarket

1 Description

- N-channel enhancement mode
- For additional characteristic and max ratings refer to the datasheet of IPP110N20N3 G
- AQL 0.65 for visual inspection according to failure catalogue
- Electrostatic Discharge Sensitive Device according to MIL-STD 883C
- Die bond: soldered or glued
- Backside metallization: NiV system
- Frontside metallization: AlCu system
- Passivation: nitride (only on edge structure)

Power MOS Transistor Chip



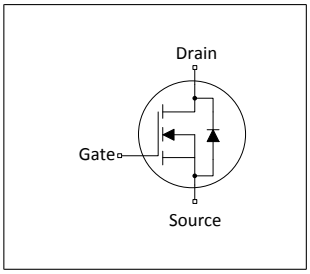


Table 1 Key Performance Parameters

Parameter	Value	Unit
$V_{(BR)DSS}$	200	V
$R_{DS(on)}$	12[1)]	mΩ
Die size	6.7 x 4.5	mm^2
Thickness	250	µm

Type / Ordering Code	Package	Marking	Related Links
IPC302N20N3	Chip	not defined	-

2 Electrical Characteristics on Wafer Level

at T_j = 25°C, unless otherwise specified

Table 2

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Drain-source breakdown voltage	$V_{(BR)DSS}$	200	-	-	V	V_{GS}=0 V ,I_D=1 mA
Gate threshold voltage	$V_{GS(th)}$	2	3	4	V	V_{DS}=V_{GS}, I_D=260 µA
Zero gate voltage drain current	I_{DSS}	-	0.1	1	µA	V_{GS}=0 V ,V_{DS}=160 V
Gate-source leakage current	I_{GSS}	-	1	100	nA	V_{GS}=20 V ,V_{DS}=0 V
Drain-source on- resistance	$R_{DS(on)}$	-	9.2[2)]	100[3)]	mΩ	V_{GS}=10 V ,I_D=2.0 A
Reverse diode forward on-voltage	V_{SD}	-	1.0	1.2	V	V_{GS}=0 V ,I_F=1A
Avalanche energy, single pulse	E_{AS}	-	47[4)]	-	mJ	I_D =30 A, R_{GS} =25 Ω

[1)] packaged in a P-TO220-3 (see ref. product)
[2)] typical bare die $R_{DS(on)}$; V_{GS}=10 V
[3)] limited by wafer test-equipment
[4)] Wafer tested. For general avalanche capability refer to the datasheet of IPP110N20N3 G

3 Package Outlines

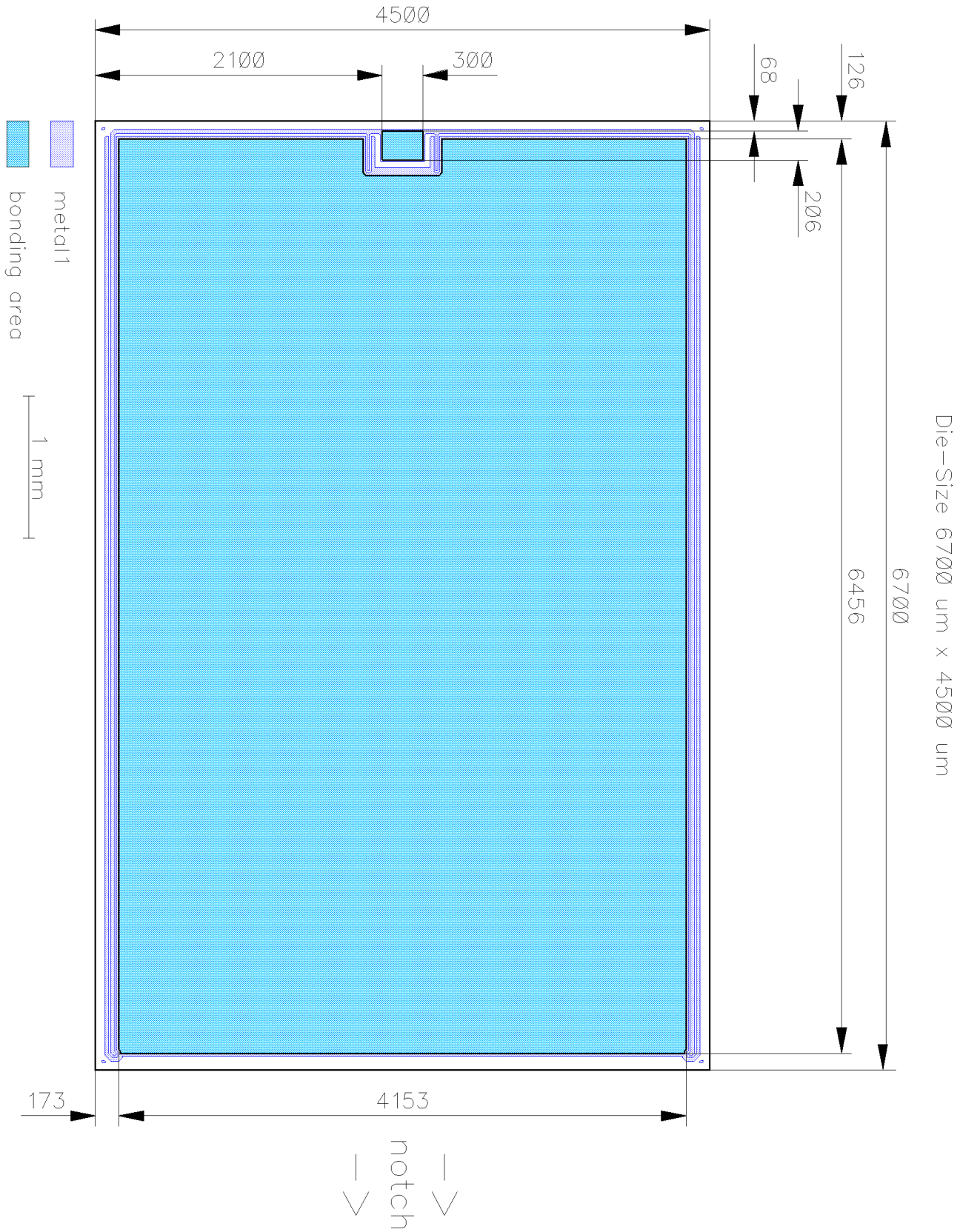


Figure 1 Outline Chip, dimensions in µm

Revision History

IPC302N20N3

Revision: 2015-04-27, Rev. 2.6

Previous Revision		
Revision	Date	Subjects (major changes since last revision)
2.6	2015-04-27	Release Final Version

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