MOSFET

Metal Oxide Semiconductor Field Effect Transistor

Bare Die

OptiMOS™3 Power MOS Transistor Chip
IPC300N15N3R

Data Sheet

Rev. 2.6
Final

Industrial & Multimarket

1 Description

- N-channel enhancement mode
- For dynamic characterization refer to the datasheet of IPP075N15N3 G[1)]
- 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

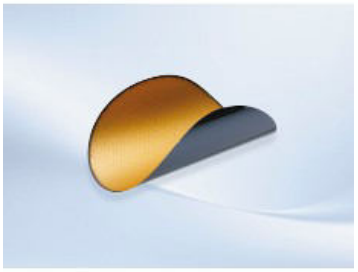
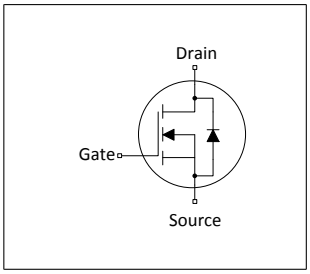


Table 1 Key Performance Parameters

Parameter	Value	Unit
$V_{(BR)DSS}$	150	V
$R_{DS(on)}$	7.5[2)]	mΩ
Die size	6 x 5	mm^2
Thickness	250	µm



Type / Ordering Code	Package	Marking	Related Links
IPC300N15N3R	Chip	not defined	-

[1)] IPP075N15N3 G dynamic characterization does not include the internal added R_G
[2)] packaged in a P-TO220-3-1 (see ref. product)

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	$V_{(BR)DSS}$	150	-	-	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=250 µA
Zero gate voltage drain current	I_{DSS}	-	0.1	1	µA	V_{GS}=0 V ,V_{DS}=120 V
Gate-source leakage current	I_{GSS}	-	1	100	nA	V_{GS}=20 V ,V_{DS}=0 V
Drain-source on- resistance	$R_{DS(on)}$	-	4.9[1)]	100[2)]	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
Internal gate resistance	R_G	-	2.3	-	Ω	-
Additional gate resistor	R_{Gadd}	13.6	17	20.4	Ω	-
Avalanche energy, single pulse	E_{AS}	-	45[3)]	-	mJ	I_D =30 A[2)] , R_{GS} =25 Ω

[1)] typical bare die $R_{DS(on)}$
[2)] limited by wafer test-equipment
[3)] Wafer tested. For general avalanche capability refer to the datasheet of IPP075N15N3 G

3 Package Outlines

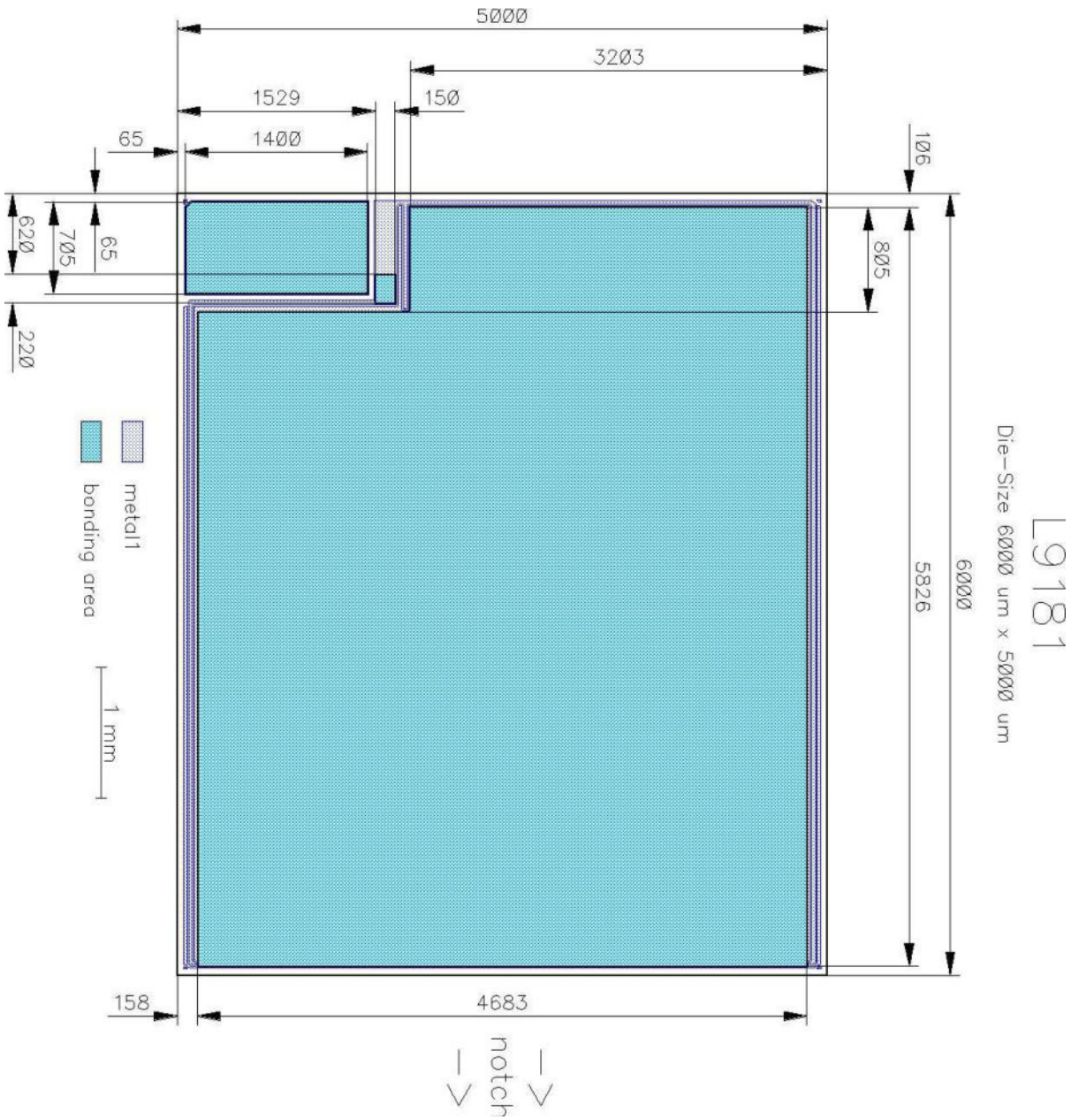


Figure 1 Outline Chip, dimensions in µm

Revision History

IPC300N15N3R

Revision: 2015-09-02, Rev. 2.6

Previous Revision		
Revision	Date	Subjects (major changes since last revision)
2.5	2014-10-03	Release Final Version
2.6	2015-09-02	Update layout picture

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Published by
Infineon Technologies AG
81726 München, Germany

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