

MOSFET

Metal Oxide Semiconductor Field Effect Transistor

Bare Die

OptiMOS™3 Power MOS Transistor Chip
IPC045N10N3

Data Sheet

Rev. 2.5
Final

Industrial & Multimarket

1 Description

- N-channel enhancement mode
- For dynamic characterization refer to the datasheet of IPP180N10N3 G
- AQL 0.65 for visual inspection according to failure catalogue
- Electrostatic Discharge Sensitive Device according to JEDEC
- Die bond: soldered or glued
- Backside metallization: NiV system
- Frontside metallization: AlCu system
- Passivation: nitride (only on edge structure)

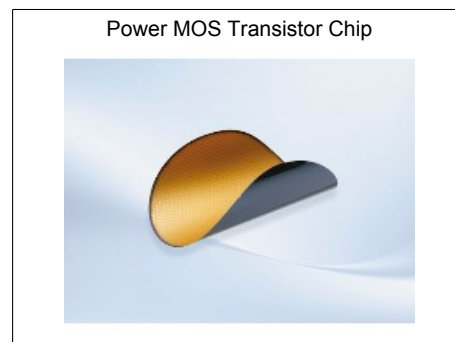
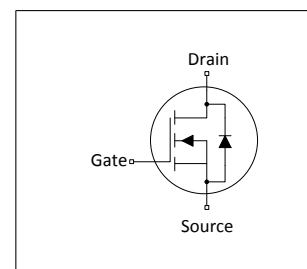


Table 1 Key Performance Parameters

Parameter	Value	Unit
$V_{(BR)DSS}$	100	V
$R_{DS(on)}$	18.0 ¹⁾	mΩ
Die size	2.5 x 1.8	mm ²
Thickness	220	μm



Type / Ordering Code	Package	Marking	Related Links
IPC045N10N3	Chip	not defined	-

2 Electrical Characteristics on Wafer Level

at $T_j = 25^\circ\text{C}$, unless otherwise specified

Table 2

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Drain-source breakdown voltage	$V_{(BR)DSS}$	100	-	-	V	$V_{GS}=0\text{ V}, I_D=1\text{ mA}$
Gate threshold voltage	$V_{GS(th)}$	2	2.7	3.5	V	$V_{DS}=V_{GS}, I_D=33\text{ }\mu\text{A}$
Zero gate voltage drain current	I_{DSS}	-	0.01	1	μA	$V_{GS}=0\text{ V}, V_{DS}=100\text{ V}$
Gate-source leakage current	I_{GSS}	-	1	100	nA	$V_{GS}=20\text{ V}, V_{DS}=0\text{ V}$
Drain-source on- resistance	$R_{DS(on)}$	-	15.2 ²⁾	100 ³⁾	mΩ	$V_{GS}=10\text{ V}, I_D=2.0\text{ A}$
Reverse diode forward on-voltage	V_{SD}	-	1.0	1.2	V	$V_{GS}=0\text{ V}, I_F=1\text{ A}$
Avalanche energy, single pulse	E_{AS}	-	45 ⁴⁾	-	mJ	$I_D=30\text{ A}, R_{GS}=25\text{ }\Omega$

¹⁾ packaged in a PG-TO220-3 (see ref. product)

²⁾ typical bare die $R_{DS(on)}$; $V_{GS}=10\text{ V}$

³⁾ limited by wafer test-equipment

⁴⁾ Wafer tested. For general avalanche capability refer to the datasheet of IPP180N10N3 G

3 Package Outlines

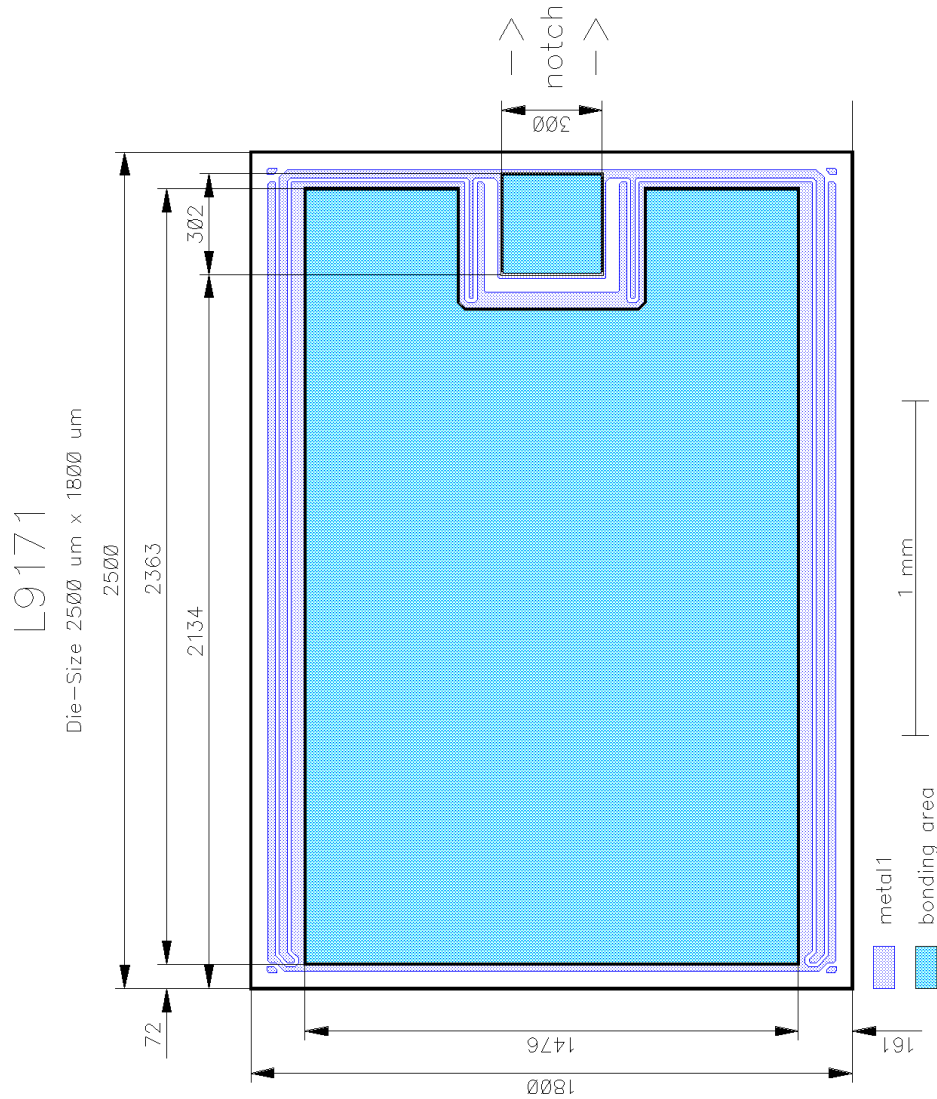


Figure 1 Outline Chip, dimensions in μm

Revision History

IPC045N10N3

Revision: 2014-07-25, Rev. 2.5

Previous Revision

Revision	Date	Subjects (major changes since last revision)
2.5	2014-07-25	Release Final Version

We Listen to Your Comments

Any information within this document that you feel is wrong, unclear or missing at all? Your feedback will help us to continuously improve the quality of this document. Please send your proposal (including a reference to this document) to:

erratum@infineon.com

Published by

Infineon Technologies AG

81726 München, Germany

© 2014 Infineon Technologies AG

All Rights Reserved.

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.

The Infineon Technologies component described in this Data Sheet may be used in life-support devices or systems and/or automotive, aviation and aerospace applications or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support, automotive, aviation and aerospace device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.