

OptiMOS™3 Power MOS Transistor Chip

IPC302N20NFD

Type	$V_{(BR)DSS}$	$R_{DS(on)}$	Die size	Si-thickness
IPC302N20NFD	200 V	12 mΩ ¹⁾	6.7 x 4.5mm ²	250 μm

Description

- N-channel enhancement mode
- For dynamic characterization refer to the datasheet of IPP120N20NFD
- 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: AlSiCu system
- Passivation: nitride and polyimide (only on edge structure)

1 Electrical Characteristics on Wafer Level

at $T_j = 25\text{ °C}$, unless otherwise specified.

Parameter	Symbol	Value			Unit	Conditions
		min.	typ.	max.		
Drain-source breakdown voltage	$V_{(BR)DSS}$	200	-	-	V	$V_{GS} = 0\text{ V}$ $I_D = 1\text{ mA}$
Gate threshold voltage	$V_{GS(th)}$	2	3	4	V	$V_{DS} = V_{GS}$ $I_D = 270\text{ μA}$
Zero gate voltage drain current	I_{DSS}	-	0.1	1	μA	$V_{GS} = 0\text{ V}$ $V_{DS} = 160\text{ V}$
Gate-source leakage current	I_{GSS}	-	10	100	nA	$V_{GS} = 20\text{ V}$ $V_{DS} = 0\text{ V}$
Drain-source on-resistance	$R_{DS(on)}$	-	9.4 ²⁾	100 ³⁾	mΩ	$V_{GS} = 10\text{ V}$ $I_D = 2.0\text{ A}$
Reverse diode forward on-voltage	V_{SD}	-	0.65	1.2	V	$V_{GS} = 0\text{ V}$ $I_F = 1\text{ A}$
Avalanche energy, single pulse	E_{AS}	-	45 ⁴⁾	-	mJ	$I_D = 30\text{ A}$, $R_{GS} = 25\text{ Ω}$

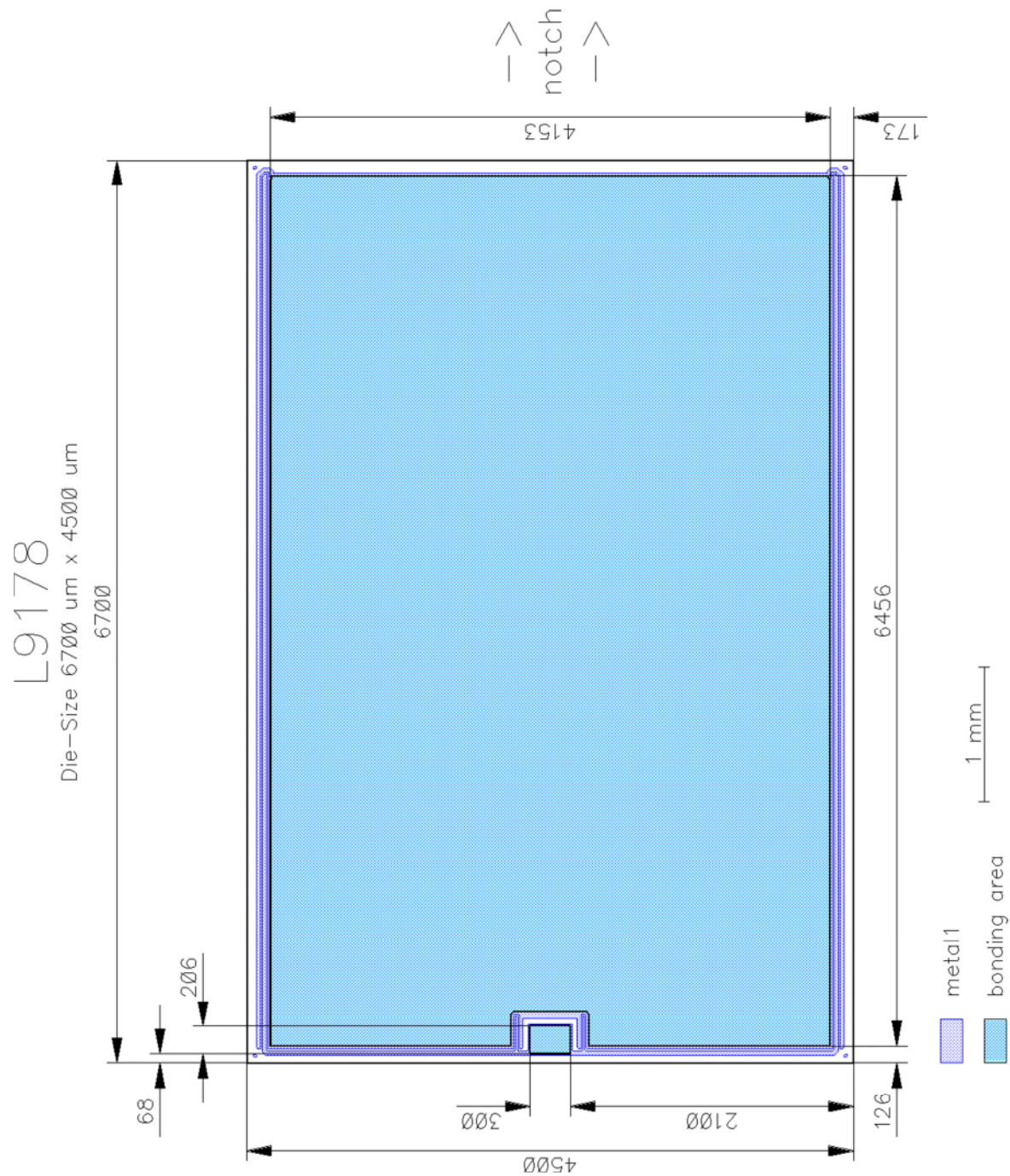
¹⁾ packaged in a PG-TO220-3 (see ref. product)

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 IPP120N20NFD

2 Chip Layout



Revision History

Major changes since the last revision

Page or Reference	Description of change
Rev. 2.0	Release of final version

Trademarks of Infineon Technologies AG

μHVIC™, μIPM™, μPFC™, AU-ConvertIR™, AURIX™, C166™, CanPAK™, CIPOS™, CIPURSE™, CoolDP™, CoolGaN™, COOLiR™, CoolMOS™, CoolSET™, CoolSiC™, DAVE™, DI-POL™, DirectFET™, DrBlade™, EasyPIM™, EconoBRIDGE™, EconoDUAL™, EconoPACK™, EconoPIM™, EiceDRIVER™, eupec™, FCOS™, GaNpowIR™, HEXFET™, HITFET™, HybridPACK™, iMOTION™, IRAM™, ISOFACE™, IsoPACK™, LEDrIVIR™, LITIX™, MIPAQ™, ModSTACK™, my-d™, NovalithIC™, OPTIGA™, OptiMOS™, ORIGA™, PowIRaudio™, PowIRstage™, PrimePACK™, PrimeSTACK™, PROFET™, PRO-SiL™, RASIC™, REAL3™, SmartLEWIS™, SOLID FLASH™, SPOC™, StrongIRFET™, SupIRBuck™, TEMPFET™, TRENCHSTOP™, TriCore™, UHVIC™, XHP™, XMC™

Trademarks updated November 2015

Other Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Edition 2016-04-05

Published by

Infineon Technologies AG

81726 München, Germany

© 2016 Infineon Technologies AG.
All Rights Reserved.

Do you have a question about this document?

Email: erratum@infineon.com

Document reference

ifx1

IMPORTANT NOTICE

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie").

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, 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.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

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

WARNINGS

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.