

**OptiMOS™3 Power MOS Transistor Chip**

Type	$V_{(BR)DSS}$	$R_{DS(on)}$	Die size	Thickness
IPC313N10N3R	100 V	2.7 mΩ <sup>1)</sup>	6 * 5.2 mm <sup>2</sup>	220 μm

**DESCRIPTION**

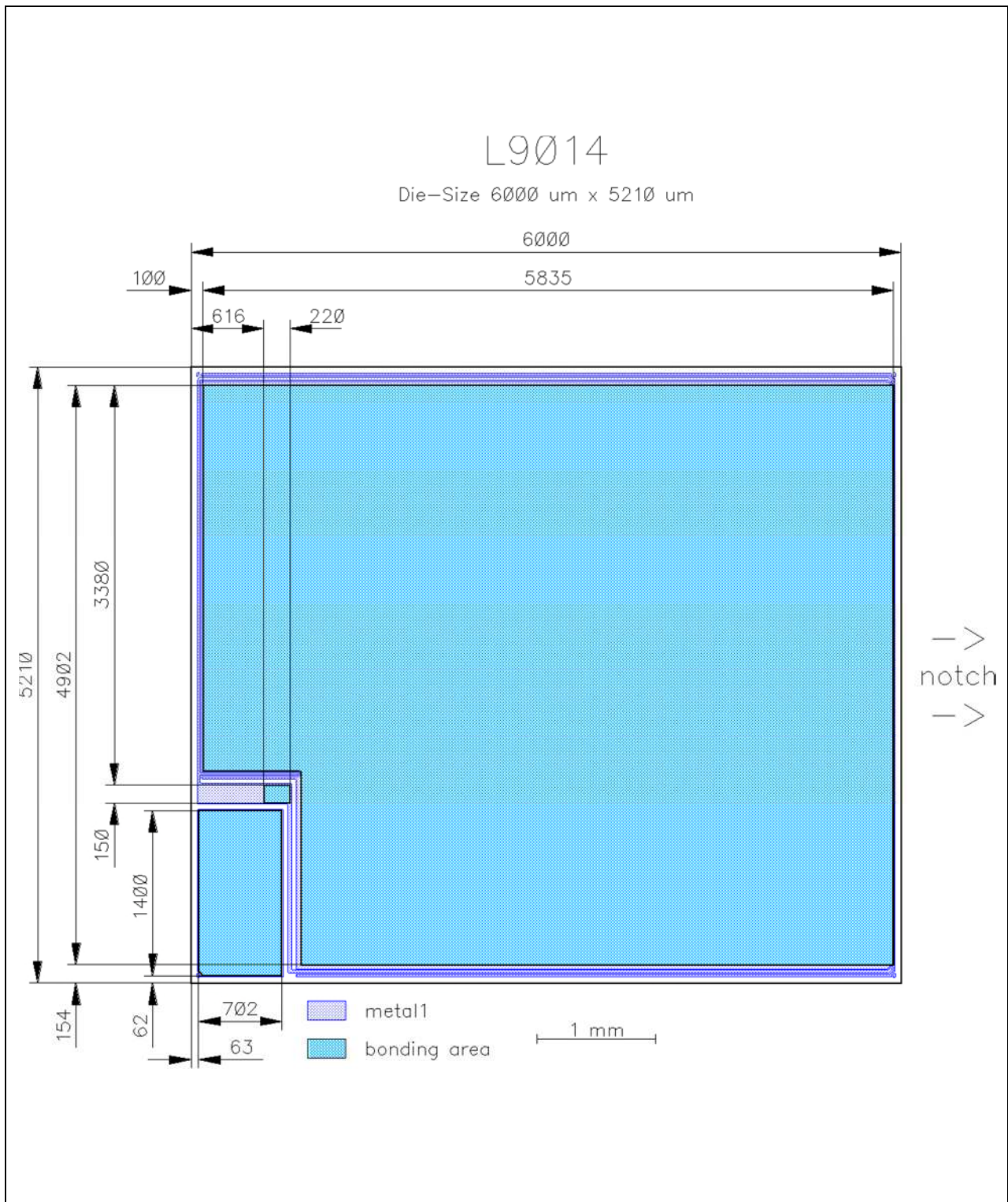
- N-channel enhancement mode
- For dynamic characterization refer to the datasheet of IPB027N10N3 G<sup>2)</sup>
- AQL 0.65 for visual inspection according to failure catalogue
- Electrostatic Discharge Sensitive Device according to JEDEC
- Die bond: soldered or glued
- Backside metallization: NiV system
- Frontside metallization: AlCu system
- Passivation: nitride (only on edge structure)

**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	$V_{(BR)DSS}$	100	-	-	V	$V_{GS} = 0\text{ V}$ $I_D = 1\text{ mA}$
Gate threshold voltage	$V_{GS(th)}$	2	2.7	3.5	V	$V_{DS} = V_{GS}$ $I_D = 275\text{ μA}$
Zero gate voltage drain current	$I_{DSS}$	-	0.1	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	$R_{DS(on)}$	-	1.9 <sup>3)</sup>	100 <sup>4)</sup>	mΩ	$V_{GS} = 10\text{ V}$ $I_D = 2.0\text{ A}$
Reverse diode forward on-voltage	$V_{SD}$	-	1.0	1.2	V	$V_{GS} = 0\text{ V}$ $I_F = 1\text{ A}$
Internal gate resistance	$R_G$	-	8	-	Ω	
Avalanche energy, single pulse	$E_{AS}$	-	45 <sup>5)</sup>	-	mJ	$I_D = 30\text{ A}$ , $R_{GS} = 25\text{ Ω}$

Chip-Layout:



<sup>1)</sup> packaged in a P-TO263-3 (see ref. product)

<sup>2)</sup> IPB027N10N3 G dynamic characterization does not include the internal added  $R_G$

<sup>3)</sup> typical bare die  $R_{DS(on)}$ ;  $V_{GS}=10V$

<sup>4)</sup> limited by wafer test-equipment

<sup>5)</sup> Wafer tested. For general avalanche capability refer to the datasheet of IPB027N10N3 G



## IPC313N10N3R

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