OptiMOS® Chip data sheet

Feature

- N-Channel
- Enhancement mode
- 175°C operating temperature
- Avalanche rated
- d*v*/d*t* rated
- Integrated gate resistance

for easy parallel connection

V_{DS}	75	V
$R_{DS(on)}$	4.2	mΩ
Die size	7 x 6	mm^2
Thickness	175	µm

Ordering Code

unsawn wafer on foil	on request
sawn wafer on foil	Q67061-S7146
surf tape	on request

DESCRIPTION

- Assembly by epoxy die bonding or soldering
- AQL 1.5 for visual inspection according to failure catalog A67207-A7001-A001 issue C on 100% measured wafer
- Storage of chips and wafer according technical guideline 14 Doc. No. A66003-R14-T1-B-35

Maximum Ratings, at T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Continuous drain current [1)2)] T_C=25°C	I_D	227	A
Avalanche energy, single pulse[1)] I_D=80A, V_{DD}=25V, R_{GS}=25Ω	E_{AS}	1070	mJ
Repetitive avalanche energy, limited by T_{jmax} [1)2)]	E_{AR}	50	mJ
Gate source voltage	V_{GS}	±20	V
Additional gate resistance	R_G	5 ±20%	Ω
Operating and storage temperature	T_j , T_{stg}	-55... +175	°C

[1] Defined by design. Not subject to production test.

[2] Calculated with R_{thJC} = 0.3 K/W

Electrical Characteristics, at T_j = 25 °C, unless otherwise specified

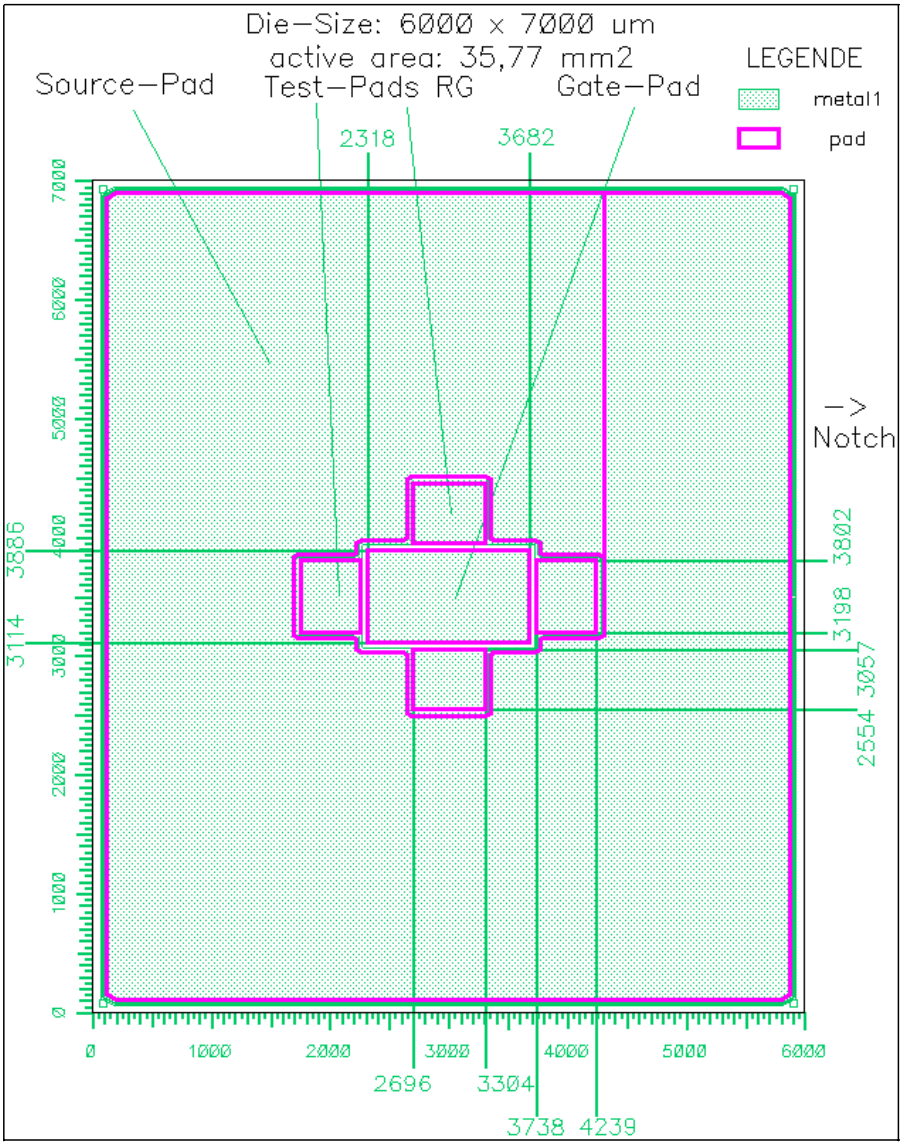
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage V_{GS}=0V, I_D=1mA	$V_{(BR)DSS}$	75	-	-	V
Gate threshold voltage, V_{GS} = V_{DS} I_D = 250 µA	$V_{GS(th)}$	2.1	3	4	
Zero gate voltage drain current	I_{DSS}				µA
V_{DS}=75V, V_{GS}=0V, T_j=25°C		-	0.01	1	
V_{DS}=75V, V_{GS}=0V, 125°C, 1)		-	1	100	
Gate-source leakage current V_{GS}=20V, V_{DS}=0V	I_{GSS}	-	1	100	nA
On-state resistance1) V_{GS}=10V, I_D=134A	$R_{DS(on)}$	-	3.7	4.2	mΩ
Dynamic Characteristics1)					
Gate to source charge V_{DD}=60V, I_D=80A	Q_{gs}	-	27	36	nC
Gate to drain charge V_{DD}=60V, I_D=80A	Q_{gd}	-	82	123	
Gate charge total V_{DD}=60V, I_D=80A, V_{GS}=0 to 10V	Q_g	-	189	251	
Reverse Diode1)					
Inverse diode forward voltage V_{GS}=0V, I_F=80A	V_{SD}	-	0.9	1.3	V

1Defined by design. Not subject to production test.

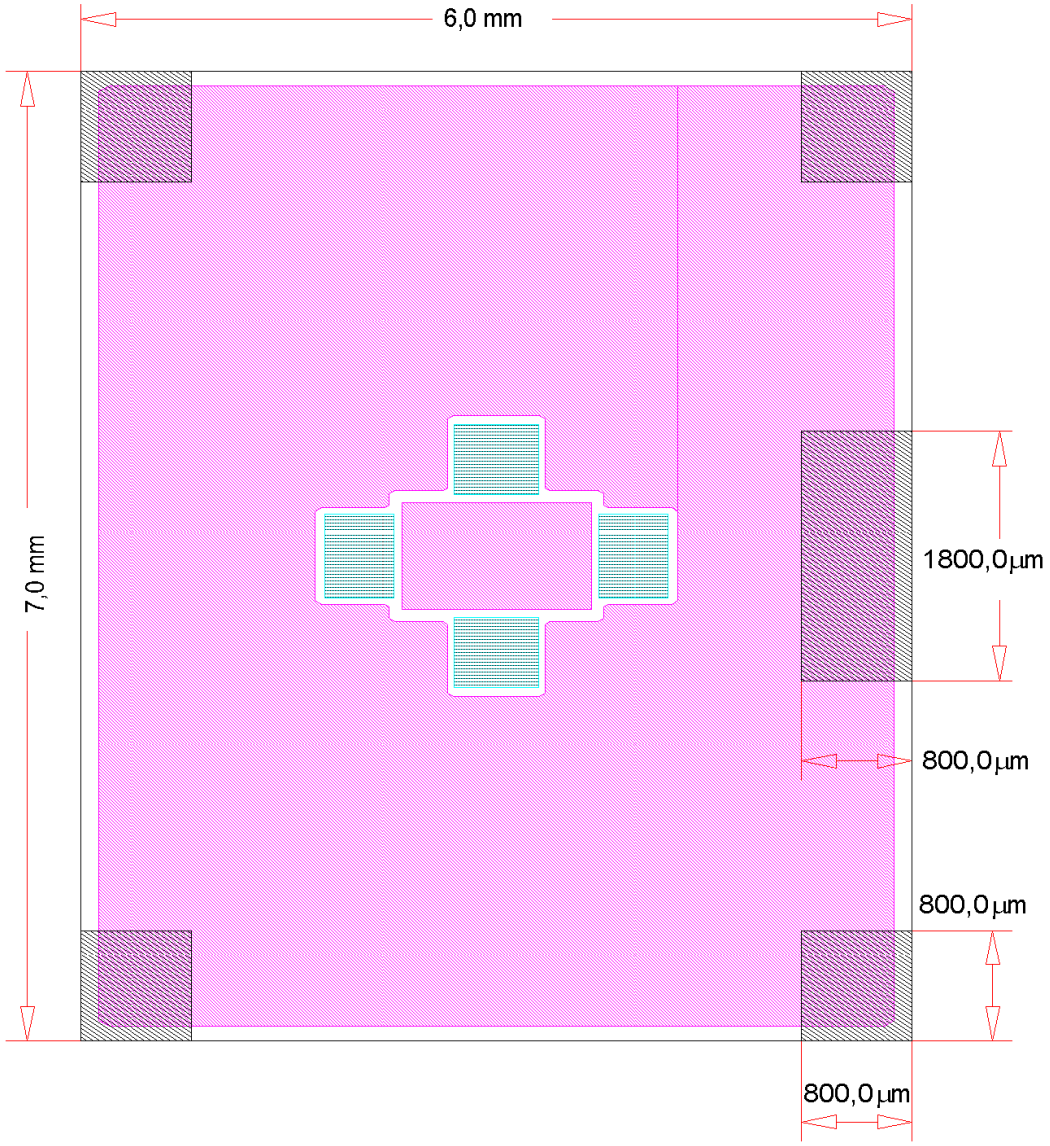
CHIP Parameters

Saw street width	-
Passivation frontside	Nitride
Metalization frontside	5µ AlSiCu
Metalization gate pad	AlSiCu
Metalization backside	Ni-Ag System
Die bond	applicable: soft or glue
Wire bond	Al wedge-wedge

Chip - Layout:



Additional information for bonding:



Area for testing purposes: bonding here is not recommended

Area of integrated gate resistance covered with Al metallization: no contact with gate bond wires allowed in order to prevent short circuit of gate resistance

Published by
Infineon Technologies AG,
Bereichs Kommunikation
St.-Martin-Strasse 53,
D-81541 München
© Infineon Technologies AG 1999
All Rights Reserved.

Attention please!
The information herein is given to describe certain components and shall not be considered as warranted characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Infineon Technologies is an approved CECC manufacturer.

Information
For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Reprensatives worldwide (see address list).

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

Infineon Technologies Components may only be used in life-support devices or systems 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 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.

Further information
Please notice that the part number is BSIPC42S2N08, for simplicity the device is referred to by the term SIPC42S2N08 throughout this documentation.