

STN	Polovodičové súčiastky. Elektromechanické mikrosúčiastky. Časť 15: Skúšobná metóda šmykovej pevnosti medzi PDMS a sklom.	STN EN 62047-15 35 8792
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Semiconductor devices - Micro-electromechanical devices - Part 15: Test method of bonding strength between PDMS and glass

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/15

Obsahuje: EN 62047-15:2015, IEC 62047-15:2015

121887

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 62047-15

July 2015

ICS 31.080.99

English Version

**Semiconductor devices - Micro-electromechanical devices - Part
15: Test method of bonding strength between PDMS and glass
(IEC 62047-15:2015)**

Dispositifs à semiconducteurs - Dispositifs
microélectromécaniques - Partie 15: Méthode d'essai de la
résistance de collage entre PDMS et verre
(IEC 62047-15:2015)

Halbleiterbauelemente - Bauelemente der
Mikrosystemtechnik - Teil 15: Prüfverfahren zur
Bondqualität zwischen PDMS und Glas
(IEC 62047-15:2015)

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Europäisches Komitee für Elektrotechnische Normung

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European foreword

The text of document 47F/208/FDIS, future edition 1 of IEC 62047-15, prepared by SC 47F "Microelectromechanical systems" of IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62047-15:2015.

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62047-9	-	Semiconductor devices - Micro-electromechanical devices -- Part 9: Wafer to wafer bonding strength measurement for MEMS	EN 62047-9	-



IEC 62047-15

Edition 1.0 2015-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Semiconductor devices – Micro-electromechanical devices –
Part 15: Test method of bonding strength between PDMS and glass**

**Dispositifs à semiconducteurs – Dispositifs microélectromécaniques –
Partie 15: Méthode d'essai de la résistance de collage entre PDMS et verre**



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IEC 62047-15

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INTERNATIONAL STANDARD

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 31.080.99

ISBN 978-2-8322-2291-1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR DEVICES – MICRO-ELECTROMECHANICAL DEVICES –

Part 15: Test method of bonding strength between PDMS and glass

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International Standard IEC 62047-15 has been prepared by subcommittee 47F: Micro-electromechanical systems, of IEC technical committee 47: Semiconductor devices.

The text of this standard is based on the following documents:

FDIS	Report on voting
47F/208/FDIS	47F/213/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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SEMICONDUCTOR DEVICES – MICRO-ELECTROMECHANICAL DEVICES –

Part 15: Test method of bonding strength between PDMS and glass

1 Scope

This part of IEC 62047 describes test method for bonding strength between poly dimethyl siloxane (PDMS) and glass. Silicone-based rubber, PDMS, is used for building of chip-based microfluidic devices fabricated using lithography and replica moulding processes. The problem of bonding strength is mainly for high pressure applications as in the case of certain peristaltic pump designs where an off chip compressed air supply is used to drive the fluids in micro channels created by a twin layer, one formed by bondage between glass with replica moulded PDMS and another between PDMS and PDMS. Also, in case of systems having pneumatic microvalves, a relatively high level of bonding particularly between two replica moulded layers of PDMS becomes quite necessary. Usually there is a leakage and debonding phenomena between interface of bonded areas, which causes unstability and shortage of lifetime for MEMS devices. This standard specifies general procedures on bonding test of PDMS and glass chip.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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