BS IEC 62951-3:2018

BSI Standards Publication

Semiconductor devices - Flexible and stretchable semiconductor devices

Part 3: Evaluation of thin film transistor characteristics on flexible substrates under bulging

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee EPL/47, Semiconductors.

A list of organizations represented on this committee can be obtained on request to its secretary.

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms and definitions 6
4 Test piece 6
4.1 General 6
4.2 Size of a test piece 7
4.3 Measurement of dimensions 7
4.4 Storage prior to testing 7
5 Test apparatus and procedure 7
5.1 General 7
5.2 Test apparatus 7
5.2.1 General 7
5.2.2 Apparatus 8
5.3 Test procedure and analysis 12
5.3.1 Test procedure 12
5.3.2 Data analysis 14
6 Test report 17
Annex A (informative) Other types of electrical and mechanical test equipments 18
A.1 Absorption type electrical and mechanical test equipment with heating system 18
A.2 Bulging-type electrical and mechanical test equipment with halogen lamp heating system 18
Annex B (informative) Failure pressure estimation 20
Bibliography 22

Figure 1 – Pressure chamber open window shapes 9
Figure 2 – Typical example of bulging-type mechanical and electrical measurement test apparatus with heating system 11
Figure 3 – Exemplary schematics of pressure chamber, pressure chamber open window 11
Figure 4 – Exemplary schematic of wire bonding 12
Figure 5 – Exemplary DC characteristics for determining (a) μ_{lin} (b) μ_{sat} and (c) SS 16
Figure 6 – Representative bulge test data showing pressure-deflection relation for Ag-Pd/SiN_X 17
Figure A.1 – Exemplary schematic of absorption-type electrical and mechanical test equipment with heating system 18
Figure A.2 – Exemplary schematic of bulging-type electrical and mechanical test equipment with halogen lamp heating system 19
Figure B.1 – Schematic for failure pressure estimation for 100 µm-thick polyimide assuming yield and tensile strength of 69 MPa and 231 MPa 20

Table B.1 – Flexible substrate information (polyimide) 20
Table B.2 – Pressure calculation results 21

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Full document details: BS IEC 62951-3:2018

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SEMICONDUCTOR DEVICES – FLEXIBLE AND STRECHABLE SEMICONDUCTOR DEVICES –

Part 3: Evaluation of thin film transistor characteristics on flexible substrates under bulging

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The text of this International Standard is based on the following documents:

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47/2492/FDIS	47/2511/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62951 series, published under the general title *Semiconductor devices – Flexible and stretchable semiconductor devices*, can be found on the IEC website.

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INTRODUCTION

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SEMICONDUCTOR DEVICES – FLEXIBLE AND STRECHABLE SEMICONDUCTOR DEVICES –

Part 3: Evaluation of thin film transistor characteristics on flexible substrates under bulging

1 Scope

This part of IEC 62951 specifies the method for evaluating thin film transistor characteristics on flexible substrates under bulging. The thin film transistor is fabricated on flexible substrates, including polyethylene terephthalate (PET), polyimide (PI), elastomer and others. The stress is applied by applying a uniformly-distributed pressure to the flexible substrate using the equipment.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62047-17, *Semiconductor devices – Micro-electromechanical devices – Part 17: Bulge test method for measuring mechanical properties of thin films*

IEC 60747-8, *Semiconductor devices – Discrete devices – Part 8: Field-effect transistors*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62047-17, in IEC 60747-8 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
flexible substrate

substrate with flexibility onto which a thin film transistor is fabricated

4 Test piece

4.1 General

The test piece shall be prepared using the thin film transistor fabrication process on flexible substrates. The mechanical and electrical properties of thin film transistors may depend on the fabrication processes. Thin film transistors shall be prepared to prevent formation of cracks or flaws and delamination from the substrate.

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