Irish Standard
I.S. EN 61240:2017

Piezoelectric devices - Preparation of outline drawings of surface-mounted devices (SMD) for frequency control and selection - General rules

I.S. EN 61240:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

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National Foreword

I.S. EN 61240:2017 is the adopted Irish version of the European Document EN 61240:2017, Piezoelectric devices - Preparation of outline drawings of surface-mounted devices (SMD) for frequency control and selection - General rules

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61240

January 2017

ICS 31.140

Supersedes EN 61240:2012

English Version

Piezoelectric devices - Preparation of outline drawings of surface-mounted devices (SMD) for frequency control and selection - General rules (IEC 61240:2016)

Dispositifs piézoélectriques - Préparation des dessins d'encombrement des dispositifs à montage en surface pour la commande et le choix de la fréquence - Règles générales (IEC 61240:2016)

Piezoelektrische Bauelemente - Anfertigung von Gehäusezeichnungen von oberflächenmontierbaren Bauelementen (SMD) zur Frequenz-Stabilisierung und -Selektion - Allgemeine Regeln (IEC 61240:2016)

This European Standard was approved by CENELEC on 2016-11-28. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61240:2017 E

European foreword

The text of document 49/1172/CDV, future edition 3 of IEC 61240, prepared by IEC/TC 49 "Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61240:2017.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2017-08-28
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-11-28

This document supersedes EN 61240:2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61240:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

ISO 1101	NOTE	Harmonized as EN ISO 1101.
ISO 5456-2	NOTE	Harmonized as EN ISO 5456-2.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
IEC 60191-6	-	Mechanical standardization of semiconductor devices - Part 6: General rules for the preparation of outline drawings of surface mounted semiconductor device packages	EN 60191-6	-

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IEC 61240

Edition 3.0 2016-10

INTERNATIONAL STANDARD

Piezoelectric devices – Preparation of outline drawings of surface-mounted devices (SMD) for frequency control and selection – General rules

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COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PIEZOELECTRIC DEVICES – PREPARATION OF OUTLINE DRAWINGS OF SURFACE-MOUNTED DEVICES (SMD) FOR FREQUENCY CONTROL AND SELECTION – GENERAL RULES

FOREWORD

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International Standard IEC 61240 has been prepared by IEC technical committee 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection.

This third edition cancels and replaces the second edition published in 2012. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- outline drawings have been changed from three views (top, front and bottom) to that based on ISO layout in the third-angle projection, in which the view from the right has been added to the top, front and bottom views;
- reference line and geometrical dimensions of the package for enclosures have been changed for practical use;
- information on miniaturized leadless ceramic enclosures of piezoelectric devices (SMD) for frequency control and selection has been included in an annex.

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

CDV	Report on voting
49/1172/CDV	49/1188/RVC

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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

The enclosures of quartz crystal resonators and oscillators are unified in this third edition of IEC 61240.

Regarding the current situation of many quartz crystal device suppliers, many of them use their own enclosure layouts in their catalogues. For the convenience of consumers, general rules of enclosure layout and definition of size need to be unified.

The reasons prompting the revision of IEC 61240:2012 are as follows:

a) The height of packages should not be included in a drawing. Only the total height of enclosures should be expressed.
b) In small enclosure types, the size tolerance in smaller enclosures will not meet the conditions defined in Table A.3 (Annex A).

In newly proposed general rules of outline drawings, only the total height of enclosures should be expressed and the size tolerance in smaller enclosures is revised.

PIEZOELECTRIC DEVICES – PREPARATION OF OUTLINE DRAWINGS OF SURFACE-MOUNTED DEVICES (SMD) FOR FREQUENCY CONTROL AND SELECTION – GENERAL RULES

1 Scope

This International Standard sets out general rules for drawing all dimensional and geometrical characteristics of a surface-mounted piezoelectric device package (referred to in this document as SMD) in order to ensure mechanical inter-changeability of all outline drawings of the SMDs for frequency control and selection.

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 60191-6, *Mechanical standardization of semiconductor devices – Part 6: General rules for the preparation of outline drawings of surface mounted semiconductor device packages*

3 Classification of SMD

The SMD piezoelectric devices are classified into three types of packages depending on the structure of the terminal leads.

a) Leaded type: the folded ends of the terminal leads are turned away from the body.

NOTE 1 The package of the pin lead type is compatible with the socket. This is defined in the description of the leaded type.

b) Folded-leads type: the folded ends of the terminal lead are turned towards the body.

NOTE 2 The supporter with a board is defined in the description of this folded lead type.

c) Leadless type: terminal pads only are present on the body instead of terminal leads.

A proper combination of these options should be selected.

4 Title of the outline drawing

The title of the outline drawing shall imply the main package material (e.g. metal, plastic, glass, ceramic), the sealing procedure, number of terminals and the type of SMD, as shown in Examples 1, 2 and 3[1].

5 Composition of the outline drawing

5.1 Elements of outline drawings

The outline drawing of an SMD shall be composed of five elements: the drawings from four views in the third-angle projection, the table of detailed dimensions, the actual size sketch, the

[1] Examples 1, 2 and 3 refer to the sheets provided after Clause 9 of this document.