SLOVENSKI STANDARD
SIST EN 61019-2:2002

01-september-2002

Surface acoustic wave (SAW) resonators - Part 2: Guide to the use (IEC 61019-2:1995

Surface acoustic wave (SAW) resonators -- Part 2: Guide to the use

Oberflächenwellen- (OFW-) Resonatoren -- Teil 2: Leitfaden für die Anwendung

Résonateurs à ondes acoustiques de surface (OAS) -- Partie 2: Guide d'emploi

Ta slovenski standard je istoveten z: **EN 61019-2:1997**

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31.140	Piezoelektriļ ne in dielektriļ ne naprave	Piezoelectric and dielectric devices

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EN 61019-2

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Descriptors: Surface acoustic wave (SAW) resonators, basic structure, principle of operation, characteristics, application guide

English version

Surface acoustic wave (SAW) resonators
Part 2: Guide to the use
(IEC 61019-2:1995)

Résonateurs à ondes acoustiques de surface (OAS)
Partie 2: Guide d'emploi
(CEI 61019-2:1995)

Oberflächenwellen- (OFW-) Resonatoren
Teil 2: Leitfaden für die Anwendung
(IEC 61019-2:1995)

This European Standard was approved by CENELEC on 1997-07-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 61019-2:1995, prepared by IEC TC 49, Piezoelectric and dielectric devices for frequency control and selection, was submitted to the formal vote and was approved by CENELEC as EN 61019-2 on 1997-07-01 without any modification.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-06-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61019-2:1995 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60068-1	1988	Environmental testing Part 1: General and guidance		
+ A1	1992		EN 60068-1[1]	1994
IEC 60068-2-1	1990	Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
IEC 60068-2-2	1974	Test B: Dry heat	EN 60068-2-2[2]	1993
A1	1993		A1	1993
IEC 60068-2-3	1969	Test Ca: Damp heat, steady state	HD 323.2.3 S2[3]	1987
IEC 60068-2-6	1982	Test Fc and guidance: Vibration (Sinusoidal)	HD 323.2.6 S2[4]	1988
IEC 60068-2-7	1983	Test Ga and guidance: Acceleration, steady state		
+ A1	1986		EN 60068-2-7	1993
IEC 60068-2-10	1988	Test J and guidance: Mould growth	HD 323.2.10 S3	1988
IEC 60068-2-13	1983	Test M: Low air pressure	HD 323.2.13 S1	1987
IEC 60068-2-14	1984	Test N: Change of temperature		
+ A1	1986		HD 323.2.14 S2	1987
IEC 60068-2-17	1978	Test Q: Sealing	HD 323.2.17 S4[5]	1990
A4	1991		-	-
IEC 60068-2-20	1979	Test T: Soldering		
+ A2	1987		HD 323.2.20 S3	1988

1) EN 60068-1 also includes corrigendum October 1988.

2) EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

3) HD 323.2.3 S2 includes A1:1984 to IEC 60068-2-3.

4) HD 323.2.6 S2 is superseded by EN 60068-2-6:1995, which is based on IEC 60068-2-6:1995.

5) HD 323.2.17 S4 is superseded by EN 60068-2-17:1994, which is based on IEC 60068-2-17:1994.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-21	1983	Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21[6]	1997
A2	1991		A2	1997
IEC 60068-2-27	1987	Test Ea and guidance: Shock	EN 60068-2-27	1993
IEC 60068-2-29	1987	Test Eb and guidance: Bump	EN 60068-2-29[7]	1993
IEC 60068-2-30	1980	Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)		
+ A1	1985		HD 323.2.30 S3	1988
IEC 61019-1-1	1990	Surface acoustic wave (SAW) resonators Part 1: General information, standard values and test conditions -- Section 1: General information and standard values	-	-
IEC 61019-1-2	1993	Section 2: Test conditions	-	-
IEC 61019-3	1991	Part 3: Standard outlines and lead connections	-	-

6) EN 60068-2-21 includes corrigendum November 1991 + A1:1985 to IEC 60068-2-21.
7) EN 60068-2-29 includes a corrigendum to IEC 60068-2-29.

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Résonateurs à ondes acoustiques de surface (OAS) –

Partie 2: Guide d'emploi

Surface acoustic wave (SAW) resonators –

Part 2: Guide to the use

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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SURFACE ACOUSTIC WAVE (SAW) RESONATORS –

Part 2: Guide to the use

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 1019-2 has been prepared by IEC technical committee 49: Piezoelectric and dielectric devices for frequency control and selection.

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

DIS	Report on voting
49/277/DIS	49/299/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.

IEC 1019 consists of the following parts, under the general title: *Surface acoustic wave (SAW) resonators*

- Part 1: General information, standard values and test conditions
- Part 2: Guide to the use
- Part 3: Standard outlines and lead connections

Annex A is for information only.

INTRODUCTION

This part of IEC 1019 gives practical guidance to the use of SAW resonators which are used in telecommunications, radio equipments and consumer products. Refer to IEC 1019-1-1 and IEC 1019-1-2 for general information, standard values and test conditions.

The features of these SAW resonators are small size, light weight, adjustment-free and high stability. In addition, the operating frequency of SAW resonators extends to the VHF and UHF ranges (30 MHz to 3 000 MHz).

This part has been compiled in response to a generally expressed desire on the part of both users and manufacturers for a guide to the use of SAW resonators, so that the resonators may be used to their best advantage. To this end, general and fundamental characteristics have been explained in this guide.

SURFACE ACOUSTIC WAVE (SAW) RESONATORS –

Part 2: Guide to the use

1 Scope

SAW resonators are now widely used in a variety of applications: VCR RF-converters, CATV local oscillators, measuring equipment, remote control and so on. While SAW resonators are also applied to narrow bandwidth filters, the scope of this guide is limited to SAW resonators for oscillator applications.

It is not the aim of this guide to explain theory, nor to attempt to cover all the eventualities which may arise in practical circumstances. This guide draws attention to some of the more fundamental questions, which should be considered by the user before he places an order for a SAW resonator for a new application. Such a procedure will be the user's insurance against unsatisfactory performance.

Standard specifications, such as those of the IEC of which this guide forms a part, and national specifications or detail specifications issued by manufacturers, will define the available combinations of resonance frequency, quality factor, motional resistance, parallel capacitance, etc. These specifications are compiled to include a wide range of SAW resonators with standardized performances. It cannot be over-emphasized that the user should, wherever possible, select his SAW resonators from these specifications, when available, even if it may lead to making small modifications to his circuit to enable the use of standard resonators. This applies particularly to the selection of the nominal frequency.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1019. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1019 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 68-1: 1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 68-2-1: 1990, *Environmental testing – Part 2: Tests – Test A: Cold*

IEC 68-2-2: 1974, *Environmental testing – Part 2: Tests – Test B: Dry heat*
Amendment 1 (1993)

IEC 68-2-3: 1969, *Environmental testing – Part 2: Tests – Test Ca: Damp heat, steady state*

IEC 68-2-6: 1982, *Environmental testing – Part 2: Tests – Test Fc and guidance: Vibration (sinusoidal)*

IEC 68-2-7: 1983, *Environmental testing – Part 2: Tests – Test Ga and guidance: Acceleration, steady state*
Amendment 1 (1986)

IEC 68-2-10: 1988, *Environmental testing – Part 2: Tests – Test J and guidance: Mould growth*

IEC 68-2-13: 1983, *Environmental testing – Part 2: Tests – Test M: Low air pressure*

IEC 68-2-14: 1984, *Environmental testing – Part 2: Tests – Test N: Change of temperature*
Amendment 1 (1986)

IEC 68-2-17: 1978, *Environmental testing – Part 2: Tests – Test Q: Sealing*
Amendment 4 (1991)

IEC 68-2-20: 1979, *Environmental testing – Part 2: Tests – Test T: Soldering*
Amendment 2 (1987)

IEC 68-2-21: 1983, *Environmental testing – Part 2: Tests – Test U: Robustness of terminations and integral mounting devices*
Amendment 2 (1991)

IEC 68-2-27: 1987, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 68-2-29: 1987, *Environmental testing – Part 2: Tests – Test Eb and guidance: Bump*

IEC 68-2-30: 1980, *Environmental testing – Part 2: Tests – Test Db and guidance: Damp heat, cyclic (12+12 hour cycle)*
Amendment 1 (1985)

IEC 1019-1-1: 1990, *Surface acoustic wave (SAW) resonators – Part 1: General information, standard values and test conditions – Section 1: General information and standard values*

IEC 1019-1-2: 1993, *Surface acoustic wave (SAW) resonators – Part 1: General information, standard values and test conditions – Section 2: Test conditions*

IEC 1019-3: 1991, *Surface acoustic wave (SAW) resonators – Part 3: Standard outlines and lead connections*