SLOVENSKI STANDARD

SIST EN 61019-1:2005

december 2005

Resonatorji za površinske akustične valove – 1. del: Generična specifikacija (IEC 61019-1:2004)

Surface acoustic wave (SAW) resonators – Part 1: Generic specification (IEC 61019-1:2004)

ICS 31.140

Referenčna številka
SIST EN 61019-1:2005(en)

EUROPEAN STANDARD **EN 61019-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM June 2005

ICS 31.140 Supersedes EN 61019-2:1997

English version

Surface acoustic wave (SAW) resonators
Part 2: Guide to the use
(IEC 61019-2:2005)

Résonateurs à ondes acoustiques de surface (OAS)
Partie 2: Guide d'emploi
(CEI 61019-2:2005)

Oberflächenwellenresonatoren (OFW-Resonatoren)
Teil 2: Leitfaden für die Anwendung
(IEC 61019-2:2005)

This European Standard was approved by CENELEC on 2005-06-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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

Ref. No. EN 61019-2:2005 E

Foreword

The text of document 49/714/FDIS, future edition 2 of IEC 61019-2, prepared by IEC TC 49, Piezoelectric and dielectric devices for frequency control and selection, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61019-2 on 2005-06-01.

This European Standard supersedes EN 61019-2:1997.

The main changes with respect to EN 61019-2:1997 are listed below:

– at the end of 5.1, the edge reflector has been added. Its reference literature has been inserted in the bibliography;

– in Table 1, the propagation properties of LiNbO3 (64° Y) have been added;

– in Table 3, the clause and subclause numbers have been corrected in order to be consistent with EN 61019-1:2005.

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) 2006-03-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2008-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61019-2:2005 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

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

Publication	Year	Title	EN/HD	Year
IEC 61019-1	2004	Surface acoustic wave (SAW) resonators Part 1: Generic specification	EN 61019-1	2005
IEC 61019-3	1991	Part 3: Standard outlines and lead connections	-	-

INTERNATIONAL STANDARD

IEC 61019-2

Second edition
2005-05

Surface acoustic wave (SAW) resonators –

Part 2:
Guide to the use

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Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SURFACE ACOUSTIC WAVE (SAW) RESONATORS –

Part 2: Guide to the use

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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International Standard IEC 61019-2 has been prepared by IEC technical committee 49: Piezoelectric and dielectric devices for frequency control and selection.

This second edition cancels and replaces the first edition published in 1995. This edition constitutes a technical revision.

The main changes with respect to the previous editon are listed below:

- at the end of 5.1, the edge reflector has been added. Its reference literature has been inserted in the bibliography;
- in Table 1, the propagation properties of $LiNbO_3$ (64° Y) have been added;
- in Table 3, the clause and subclause numbers have been corrected in order to be consistent with IEC 61019-1 (2004) which has replaced IEC 61019-1-1 (1990) and IEC 61019-1-2 (1993).

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

FDIS	Report on voting
49/714/FDIS	49/723/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 61019 consists of the following parts, under the general title *Surface acoustic wave (SAW) resonators*

Part 1: Generic information

Part 2: Guide to the use

Part 3: Standard outlines and lead connections

This publication 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 maintenance result date indicated on the IEC web site 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

This part of IEC 61019 gives practical guidance to the use of SAW resonators which are used in telecommunications, radio equipments and consumer products. IEC 61019-1 can be referred to 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.

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 part of IEC 61019 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 referenced documents are indispensable for the application 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 61019-1:2004, *Surface acoustic wave (SAW) resonators – Part 1: Generic specification*

IEC 61019-3:1991, *Surface acoustic wave (SAW) resonators – Part 3: Standard outlines and lead connections*

3 Technical considerations

It is of prime interest to a user that the resonator characteristics should satisfy particular specifications. The selection of oscillating circuits and SAW resonators to meet such specifications should be a matter of agreement between user and manufacturer.

Resonator characteristics are usually expressed in terms of resonance frequency, motional resistance, quality factor and parallel capacitance (for the one-port type) and centre frequency, insertion attenuation, loaded and unloaded quality factor, input capacitance and output capacitance (for the two-port type). A standard method for measuring resonator characteristics is described in 8.5 and 8.6 of IEC 61019-1. The specifications are to be satisfied between the lowest and highest temperatures of the specified operating temperature range and before and after environmental tests.