

This document is a preview generated by EVS

Surface acoustic wave (SAW) and bulk acoustic wave (BAW) duplexers of assessed quality - Part 1: Generic specification

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 62604-1:2015 sisaldab Euroopa standardi EN 62604-1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 62604-1:2015 consists of the English text of the European standard EN 62604-1:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.09.2015.	Date of Availability of the European standard is 04.09.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 31.140

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

ICS 31.140

English Version

Surface acoustic wave (SAW) and bulk acoustic wave (BAW)
duplexers of assessed quality - Part 1: Generic specification
(IEC 62604-1:2015)

Duplexeurs à ondes acoustiques de surface (OAS) et à
ondes acoustiques de volume (OAV) sous assurance de la
qualité - Partie 1: Spécification générique
(IEC 62604-1:2015)

Oberflächenwellen-(OFW-) und Volumenwellen-(BAW-)
Duplexer mit bewerteter Qualität - Teil 1:
Fachgrundspezifikation
(IEC 62604-1:2015)

This European Standard was approved by CENELEC on 2015-08-20. 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, 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

European foreword

The text of document 49/1143/FDIS, future edition 1 of IEC 62604-1, 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 62604-1:2015.

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) 2016-05-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-08-20

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 62604-1:2015 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:

IEC 60068-2-10:2005	NOTE	Harmonized as EN 60068-2-10:2005 (not modified).
IEC 60862-1:2003	NOTE	Harmonized as EN 60862-1:2003 (not modified).
IEC 60862-2:2012	NOTE	Harmonized as EN 60862-2:2012 (not modified).
IEC 61019-1:2004	NOTE	Harmonized as EN 61019-1:2005 (not modified).
IEC 62047-7:2011	NOTE	Harmonized as EN 62047-7:2011 (not modified).
IEC 62604-2:2011	NOTE	Harmonized as EN 62604-2:2012 (not modified).

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60027	series	Letter symbols to be used in electrical technology	-	-
IEC 60050	series	International Electrotechnical Vocabulary	-	-
IEC 60068-1	2013	Environmental testing - Part 1: General and guidance	EN 60068-1	2014
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-7	-	Basic environmental testing procedures - Part 2-7: Tests - Test Ga and guidance: Acceleration, steady state	EN 60068-2-7	-
IEC 60068-2-13	-	Basic environmental testing procedures - Part 2-13: Tests - Test M: Low air pressure	EN 60068-2-13	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-17	1994	Basic environmental testing procedures - Part 2-17: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-30	-	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60068-2-45	-	Basic environmental testing procedures - Part 2-45: Tests - Test XA and guidance: Immersion in cleaning solvents	EN 60068-2-45	-
IEC 60068-2-52	-	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	-
IEC 60068-2-58	-	Environmental testing - Part 2-58: Tests - Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58	-
IEC 60068-2-64	-	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance	EN 60068-2-64	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60122-1	-	Quartz crystal units of assessed quality - Part 1: Generic specification	EN 60122-1	-
IEC 60617-DB	-	Graphical symbols for diagrams	-	-
IEC 60642	-	Piezoelectric ceramic resonators and resonator units for frequency control and selection - Chapter I: Standard values and conditions - Chapter II: Measuring and test conditions	-	-
IEC 60695-11-5	-	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	-
IEC 60749-28	- ¹⁾	Semiconductor devices - Mechanical and climatic test methods - Part 28: Electrostatic Discharge (ESD) Sensitivity Testing Direct contact charged device model (DC-CDM)	FprEN 60749-28	- ¹⁾
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61340-3-1	-	Electrostatics - Part 3-1: Methods for simulation of electrostatic effects - Human body model (HBM) electrostatic discharge test waveforms	EN 61340-3-1	-

1) At draft stage.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61340-3-2	-	Electrostatics - Part 3-2: Methods for simulation of electrostatic effects - Machine model (MM) electrostatic discharge test waveforms	EN 61340-3-2	-
IEC 62761	-	Guidelines for the measurement method of nonlinearity for surface acoustic wave (SAW) and bulk acoustic wave (BAW) devices in radio frequency (RF)	EN 62761	-
IEC 80000	series	Quantities and units	EN 80000	series
ISO 80000	series	Quantities and units -	EN ISO 80000	series

This document is a preview generated by EVS

CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms, definitions, units and symbols	8
3.1 Terms and definitions.....	8
3.1.1 General terms.....	9
3.1.2 Response characteristics related terms	10
3.1.3 SAW and BAW duplexers related terms	14
3.2 Units and graphical symbols	16
4 Order of precedence of documents.....	16
5 Preferred values for ratings and characteristics	16
5.1 General.....	16
5.2 Nominal frequency bands.....	16
5.3 Operating temperature ranges, in degrees Celsius (°C)	16
5.4 Climatic category	17
5.5 Bump severity	17
5.6 Vibration severity	17
5.7 Shock severity	18
5.8 Fine leak rate.....	18
6 Marking	18
6.1 Duplexer marking.....	18
6.2 Package marking	18
7 Quality assessment procedures	19
7.1 General.....	19
7.2 Primary stage of manufacture	19
7.3 Structurally similar components	19
7.4 Subcontracting.....	19
7.5 Incorporated components.....	19
7.6 Manufacturer's approval.....	19
7.7 Approval procedures.....	19
7.7.1 General	19
7.7.2 Capability approval	19
7.7.3 Qualification approval	20
7.8 Procedures for capability approval	20
7.8.1 General	20
7.8.2 Eligibility for capability approval.....	20
7.8.3 Application for capability approval	20
7.8.4 Granting of capability approval	20
7.8.5 Capability manual	20
7.9 Procedures for qualification approval	20
7.9.1 General	20
7.9.2 Eligibility for qualification approval.....	20
7.9.3 Application for qualification approval	21
7.9.4 Granting of qualification approval	21
7.9.5 Quality conformance inspection	21
7.10 Test procedures.....	21

7.11	Screening requirements	21
7.12	Rework and repair work	21
7.12.1	Rework	21
7.12.2	Repair work	21
7.13	Certified records of released lots	21
7.14	Validity of release	21
7.15	Release for delivery	21
7.16	Unchecked parameters	21
8	Test and measurement procedures	22
8.1	General	22
8.2	Test and measurement conditions	22
8.2.1	Standard conditions for testing	22
8.2.2	Precision of measurement	22
8.2.3	Precautions	22
8.2.4	Alternative test methods	23
8.3	Visual inspection	23
8.3.1	General	23
8.3.2	Visual test A	23
8.3.3	Visual test B	23
8.4	Dimensions test	23
8.5	Electrical test procedures	23
8.5.1	S parameters measurement	23
8.5.2	Intermodulation distortion measurement	25
8.5.3	Insulation resistance	25
8.5.4	Voltage proof	25
8.6	Mechanical and environmental test procedures	25
8.6.1	Sealing tests (non-destructive)	25
8.6.2	Soldering (solderability and resistance to soldering heat) (destructive)	26
8.6.3	Rapid change of temperature: severe shock by liquid immersion (non-destructive)	26
8.6.4	Rapid change of temperature with prescribed time of transition (non-destructive)	26
8.6.5	Bump (destructive)	26
8.6.6	Vibration (destructive)	27
8.6.7	Shock (destructive)	27
8.6.8	Free fall (destructive)	27
8.6.9	Acceleration, steady state (non-destructive)	28
8.6.10	Low air pressure (non-destructive)	28
8.6.11	Dry heat (non-destructive)	28
8.6.12	Damp heat, cyclic (destructive)	28
8.6.13	Cold (non-destructive)	28
8.6.14	Climatic sequence (destructive)	28
8.6.15	Damp heat, steady state (destructive)	29
8.6.16	Salt mist cyclic (destructive)	29
8.6.17	Immersion in cleaning solvents (non-destructive)	29
8.6.18	Flammability test (destructive)	29
8.6.19	Electrostatic discharge (ESD) sensitivity test (destructive)	29
8.7	Endurance test procedure	30
	Bibliography	31