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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 22318.2-2023

Replacing GB/T 22318.2-2008

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

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is Part 2 of GB/T 22318 "Surface Acoustic Wave Resonators". GB/T 22318 has released the following parts.

---Part 1. General specifications;

---Part 2. User Guide.

This document replaces GB/T 22318.2-2008 "Surface Acoustic Wave Resonator Part 1-2. Test Conditions". With GB/T 22318.2-

Compared with 2008, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added "technical considerations" (see Chapter 4);
- b) Added "Basic Principles of Surface Acoustic Wave (SAW) Resonators" (see Chapter 5);
- c) Added "Surface Acoustic Wave (SAW) Resonator Characteristics" (see Chapter 6);
- d) Added "Application Guide" (see Chapter 7);

- e) Added "Surface Acoustic Wave (SAW) Resonator Parameter List" (see Chapter 8);
- f) "High temperature life" is deleted (see Chapter 9 of the.2008 edition);
- g) "Terminal strength" is deleted (see Chapter 10 of the.2008 edition);
- h) "Solderability" is deleted (see Chapter 11 of the.2008 edition);
- i) "Temperature change" is deleted (see Chapter 12 of the.2008 edition);
- j) "Collision" is deleted (see Chapter 13 of the.2008 edition);
- k) "Vibration" is deleted (see Chapter 14 of the.2008 edition);
- l) "Shock" was deleted (see Chapter 15 of the.2008 edition);
- m) "Steady-state acceleration" is deleted (see Chapter 16 of the.2008 edition);
- n) "Climate" is deleted (see Chapter 17 of the.2008 edition);
- o) "Constant warm" was deleted (see Chapter 18 of the.2008 edition);
- p) "Low pressure" is deleted (see Chapter 19 of the.2008 edition);
- q) "Growing mold" has been deleted (see Chapter 20 of the.2008 edition);
- r) Appendix A has been deleted (see Appendix A of the.2008 version).

This document is equivalent to IEC 61019-2:2005 "Surface Acoustic Wave Resonators Part 2: Guide to Use".

This document has a new chapter on Terms and Definitions.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

GB/T 22318 "Surface Acoustic Wave Resonators" aims to provide the general requirements, quality assessment procedures, appearance and design of surface acoustic wave resonators.

The exit pattern is intended to consist of three parts.

Part 1. General specifications. The purpose is to specify the terms and definitions, classification and characteristics of surface acoustic wave resonators, as well as quality assessment procedures.

Part 2. User Guide. The purpose is to give the basic structure and working principle of surface acoustic wave resonators, so as to provide users with reasonable choices.

Provide guidance on selecting resonators and meeting usage requirements.

Part 3. Standard shape and terminal connections. The purpose is to give the commonly used appearance diagrams and terminal functions of surface acoustic wave resonators. definition.

surface acoustic wave resonator

Part 2. User Guide

1 Scope

Surface acoustic wave (SAW) resonators are widely used in various fields. radio frequency (RF) converters for video cassette recorders (VCR),

Cable television (CATV) uses local oscillators, measuring equipment, remote controls, etc. At the same time, SAW resonators are also suitable for narrow bandwidth filters. This document

Limited to SAW resonators in oscillator applications.

The purpose of this document is neither to provide a theoretical explanation nor to attempt to cover all possible issues that may arise in practical situations.

The focus is on some more basic issues that users should consider before purchasing a SAW resonator for a new application to prevent SAW harmonics.

The performance of the vibrator is not ideal to protect the interests of users.

This document, together with national standards or detailed specifications issued by manufacturers, specifies resonant frequency, quality factor, dynamic resistance and parallel resistance.

An effective combination of capacity and so on. The above specifications cover a large portion of SAW resonators with standard performance. Don't overemphasize user presence

In any case, these specifications should be used to select a SAW resonator. If feasible, the user can slightly change the circuit to use standard

Resonators, especially in the choice of nominal frequency.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 22318.1-2023 Surface acoustic wave resonators Part 1.General specifications (IEC 61019-1.2004, IDT)

IEC 61019-3.1991 Surface acoustic wave resonators Part 3.Standard outline and terminal connections [Surfaceacousticwave

3 Terms and definitions

There are no terms or definitions to be defined in this document.

4 Technical considerations

The user's primary concern is that the SAW resonator performs to its specific specifications. Oscillation circuits and SAW resonators meeting these specifications

The choice should be negotiated between user and manufacturer.

The performance of a SAW resonator is usually determined by the resonant frequency, dynamic resistance, quality factor, parallel capacitance (single-ended type), center frequency, insertion loss

losses, loaded and unloaded quality factors, and input and output capacitance (double-ended type). The standard method for measuring SAW resonator performance is

Given in 8.5 and 8.6 of GB/T 22318.1-2023.This specification applies to the minimum and maximum temperatures of a specific operating temperature range and ambient

Before and after testing.