



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

GB/T 40853.1-2021

**High frequency inductive components - Electrical
characteristics and measuring method - Part 1: Nanohenry
range chip inductor**

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Inductance, quality factor and impedance	1
4.1 Inductance	1
4.1.1 Measurement method	1
4.1.2 Measuring circuit	1
4.1.3 Test the installation of the inductor	2
4.1.4 Measurement method and calculation formula	3
4.1.5 Precautions for measurement	4
4.2 Quality factor (Q value)	5
4.2.1 Measurement method	5
4.2.2 Measuring circuit	5
4.2.3 Test the installation of the inductor	5
4.2.4 Measurement method and calculation formula	5
4.2.5 Precautions for measurement	5
4.3 Impedance	6
4.3.1 Measurement method	6
4.3.2 Measuring circuit	6
4.3.3 Test the installation of the inductor	6
4.3.4 Measurement method and calculation formula	6
4.3.5 Precautions for measurement	6
5 Resonant frequency	6
5.1 Self-resonant frequency	6
5.2 Minimum output method	6
5.2.1 Overview	6
5.2.2 Measuring circuit	6
5.2.3 Test the installation of the inductor	7
5.2.4 Measurement method and calculation formula	8
5.2.5 Precautions for measurement	8
5.3 Reflection method	8
5.3.1 Overview	8

5.3.2 Measuring circuit	9
5.3.3 Test the installation of the inductor	9
5.3.4 Measurement method	10
5.3.5 Precautions for measurement	10
5.4 Analyzer measurement	10
5.4.1 Impedance analyzer measurement	10
5.4.2 Network analyzer measurement	10
6 DC resistance	11
6.1 Pressure drop method	11
6.1.1 Measuring circuit	11
6.1.2 Measurement method and calculation formula	11
6.2 Bridge method	13
6.2.1 Measuring circuit	13
6.2.2 Measurement method and calculation formula	13
6.3 Precautions for measurement	14
6.4 Measuring temperature	15
Appendix A (Normative) Installation method of surface mount coil	16
A.1 Overview	16
A.2 Printed circuit boards and pads for mounting	16
A.3 Solder	16
A.4 Preparation	16
A.5 Preheating	16
A.6 Welding	16
A.7 Cleaning	16
Figure 1 Vector voltage/current method circuit example	2
Figure 2 Fixture A	2
Figure 3 Fixture B	3
Figure 4 Shape of short circuit	4
Fig. 5 The measurement circuit example of the minimum output method	7
Figure 6 Self-resonant frequency test board (minimum output method)	8
Figure 7 Reflection method measurement circuit	9
Figure 8 Self-resonant frequency test board (reflection method)	10
Figure 9 Fixture for measuring self-resonance frequency	11
Figure 10 Simple voltammetry test circuit	12
Figure 11 Switching method to measure current	12

Figure 12 Forward and reverse current method measurement circuit	13
Figure 13 Wheatstone bridge	14
Figure 14 Kelvin double bridge	14
Table 1 Dimensions of l and d	3
Table 2 The size and inductance of the short-circuit piece	5

Foreword

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

This document is the first part of GB/T 40853 "Electrical characteristics of high-frequency inductive components and their measurement methods". GB/T 40853 has been issued

The following parts are distributed.

---Part 1. Nanohenry chip inductors.

This document is revised and adopted IEC 62024-1.2017 "Electrical characteristics and measurement methods of high-frequency inductive components Part 1. Nanohenry chip Sensory.

The technical differences between this document and IEC 62024-1.2017 and the reasons are as follows.

---Added the switching method (see 6.1.2.2), the forward and reverse current method (see 6.1.2.3), and the Kelvin double bridge method (see 6.2.2). These

The method has been adopted on a large scale in the industry;

--- Modify Figure 10, delete unnecessary graphical parameters RV.

The following editorial changes have been made to this document.

---Change the vector voltmeter "EV" to "U", and the vector voltage "E" to "U";

---According to my country's drawing standards, the third view in the original international standard is changed to the first angle view for drawing (see Figure 2, Figure 3, Figure 6, Figure 8);

--- Added the explanation of the meaning of the symbols in formula (13), and gave the unit.

Introduction

With the continuous development of electronic technology and communication technology, high-frequency inductors have been widely used, and their electrical characteristics and measurement methods have also become popular.

Use it all over. The high frequency, low power consumption, multi-function, light weight and thin profile of electronic and communication equipment put forward higher requirements for inductors, in addition to

In addition to the material properties and processing capabilities of inductors, it also includes testing and measurement methods. GB/T 40853 "Electrical characteristics of high-frequency inductive components and their

"Measurement Methods" is the standard for standardizing electrical characteristics and measurement methods. GB/T 40853 consists of two parts.

---Part 1. Nanohenry chip inductors. Specifies the electrical characteristics of high-frequency (above 100kHz) nanohenry chip inductive components

(Inductance, quality factor, impedance, resonance frequency, DC resistance, etc.) and its measurement methods.

---Part 2. Inductor rated current for DC-DC converters. Specifies the amount of high-frequency inductive components based on their own temperature rise

Constant current and rated current based on the rate of change of inductance value and its measurement method.

GB/T 40853 "Electrical characteristics of high-frequency inductive components and their measurement methods" aims to guide high-frequency inductive component enterprises to organize production and external

Trade to improve the technical level of the inductor industry.

The electrical characteristics of high-frequency inductive components and their measurement methods

Part 1. Nanohenry chip inductors

1 Scope

This document specifies the electrical characteristics and measurement methods of nanohenry chip inductors.

This document applies to nanohenry chip inductors used in the high frequency range (above 100kHz).

2 Normative references