JEITA

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Safety application guide for inductors for use in electronic and electrical equipment

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INTRODUCTION

This Technical Report is published by High Frequency coil Group of Subcommittee on Passive Components, Electronic Components Division, in **JEITA**, based on **JEITA RCR-1001B** (Safely application guide for components for use in electronic and electrical equipment), in order to aim at the safety improvement of the electronic components, and for the electric device industries.

This Technical Report **JEITA RCR-2501C** replaces **JEITA RCR-2501A** which was published in 2006.
In addition to general cautions for use, the general information, such as a principle, the feature, a basic performance, the selection methods and the failure mode are shown in this document in order to help you to understand the high frequency coil well.
This document was prepared based on the component manufacturer's individual understandings, as well as cooperation from the electric equipment manufacturers.

It is expected that the electronic and electrical equipment manufacturers can secure the safety in the equipment designing process, the mounting process, and use of the equipment or others. It is also expected that the component manufacturers can utilize in the case of creating the matter about the safety of specifications.
Fundamental contents over the safety of electronic components are stated in **JEITA RCR-1001B** that is recommended to be used with this guide.

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Safety application guide for inductors for use in electronic and electrical equipment

1 Scope

This guide is applied to the following high frequency coils (HF coils) for use in electronic and electrical equipment.

– Radial leaded type and axial leaded type inductors (2-terminal type HF fixed coils)
– Chip inductors (2-terminal type HF fixed coils)
– Multi-terminal type fixed inductors (multi-terminal type HF fixed coils)

This guide only provides the information of approaches to the safety of electronic components, better ways and recommended points on the use of electronic components for the purpose of improving safety of the electronic and electrical equipment.
This guide, therefore, shall not assure the product safety of applied electronic components and electronic and electrical equipment even when applications comply fully with this guide.

2 Basic concepts of safety

In order to secure safety of HF coils and prevent them from an accident, safety needs to be secured by a proper use together with safety security and development of HF coil itself by adequate designs and manufactures.
For this, it is essential that “a proper way of use” to secure safety of HF coils be precisely informed to users (Assembly manufacturers) by HF coil manufacturers and suppliers.
According to the above-mentioned basic concepts, the main items HF coil manufacturers should consider are as follows:

a) Consideration for safety design of HF coils from a development stage;
b) Method of use for safety security;
c) Support for safety security of HF coils:
HF coils are used for a wide range of electronic equipment, and the users have a wide variety of knowledge and customs on ways of uses of HF coils.
Attention shall be paid to have their full understandings in consideration of these facts;
d) Verification and evaluation of safety;
e) Consideration to failure mechanism:
– FTA (Fault Tree Analysis)
– FMEA (Failure Mode and Effect Analysis)

3 Use of this guide

In order to safely use HF coils for electronic equipment, this guide describes items common to safety and