

TDK Component Library For AWR[®] Microwave Office[®]

TDK Corporation

January, 2011 (ver. 3.1)

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< Preface >

"TDK Component Library For AWR[®] Microwave Office[®]" is a simulation model library containing equivalent circuit models of TDK electronic components. This library contains models of capacitors, chip beads, inductors, common-mode filters, 3-terminal filters, pulse transformers, and varistors. Using this library, the actual property of electronic components can be considered in circuit simulation.

Attention regarding this library, update information, how to install and use the library, and comparison results between equivalent circuit models and measured data are written in this file. Please read them before using the library.

< Applicable condition >

The parameters in this library are obtained under the condition of 25°C, no DC bias, and small signal operation. Proper result might not be obtained if your condition is different from the above one.

< Attention >

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The data of this library is the one as of January, 2011. The content of this library is subject to changed without notice.

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< Feature of this library >

- The actual property of components can be taken into your circuit simulation because equivalent circuit model that considers inner structure of a part and material property is used.
- Artwork data (recommended pcb pattern) of parts are included
- Easy operation like standard Microwave Office's components.
- Links to PDF catalog and detailed information of products are available.

< Supported versions >

This library has been built by Microwave Office version 9.03. If you are using Microwave Office less than version 9, the library might not work properly. Please acknowledge it beforehand.

< Contents in this document >

This document is described assuming the following environment.

OS: Windows XP

Microwave Office: version 9.03

On different OS, or versions of Microwave Office, screen display and/or operation procedure may not correspond to the contents of this document. Please acknowledge it beforehand.

< Inquiries about Microwave Office >

For inquiries about Microwave Office, please contact:

AWR Corp. : <http://web.awrcorp.com/Usa/Support/General-Info/>

< Summary of updates in version 3.1 >

- The product list has been renewed.

< Summary of updates in version 3.0 >

Contents of the library have been updated overall.

- Equivalent circuit models of capacitors, inductors, and chip beads are renewed to show better matching with measured results.
- The models of 3-terminal filters and pulse transformer have been newly added.
- The models of other products also have been added or renewed.
- Links to PDF catalog and detailed information of products are available.

Note: S parameter data was deleted from version 3.0.

< Contained products in version 3.1 >

- Chip Beads (229 parts)
- Inductors (1507 parts)
- Capacitors (822 parts)
- Common Mode Filters (30 parts)
- 3-Terminal Filters (131 parts)
- Pulse Transformers (5 parts)
- Varistors (34 parts)

Total: 2758 parts

How to install the library (1)

< Install the library >

- 1) Quit Microwave Office if it runs.
- 2) Expand the zip file.
- 3) Move the expanded folders and files into the install folder of Microwave Office(<MWO install dir>) as follows:

“TDK” folder: move to <MWO install dir>/Library

“TDK.dll” file: move to <MWO install dir>/models

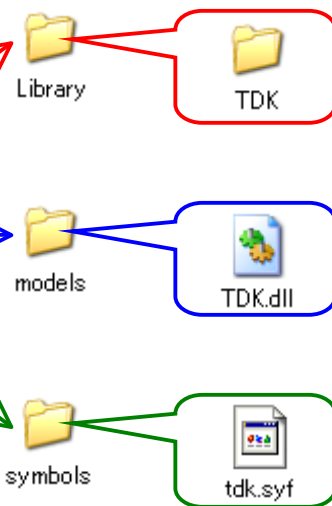
“tdk.syf” file: move to <MWO install dir>/symbols

If old version of the library is installed, overwrite the old folders and files.

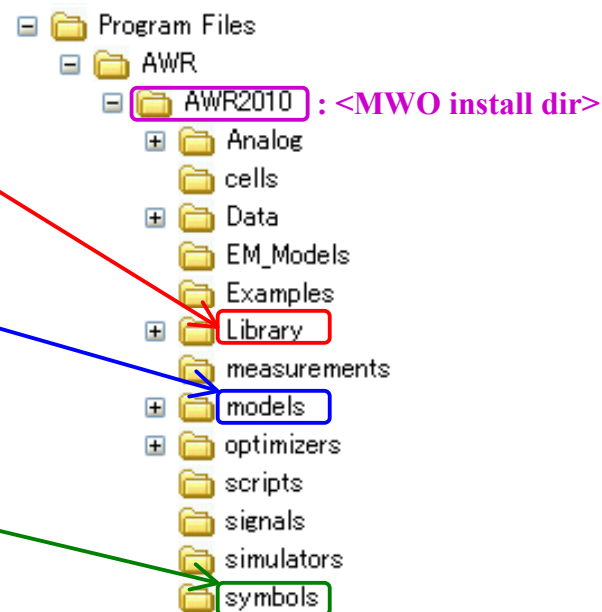
1) Quit MWO.



2) Expand the zip file.



3) Move into <MWO install dir> folder.



How to install the library (2)

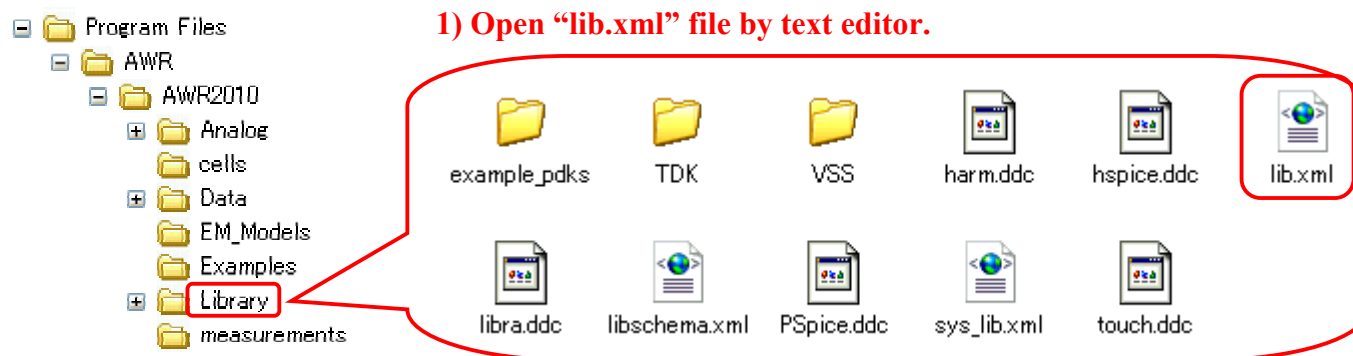
< Edit the “lib.xml” file >

This procedure is not necessary if TDK library has been already installed on the PC.

- 1) Open the “lib.xml” file that is in <MWO install dir>/Library by text editor.
- 2) Insert the line shown below in the file and save it.

```
<FILE Name="TDK" Icon="folder">TDK/TDK_Root.xml</FILE>
```

- 3) Restart Microwave Office



2) Edit the “lib.xml” file and save.

```
<?xml version="1.0"?>
<XML_COMPONENT_DATA xmlns="urn:awr-lib-data">

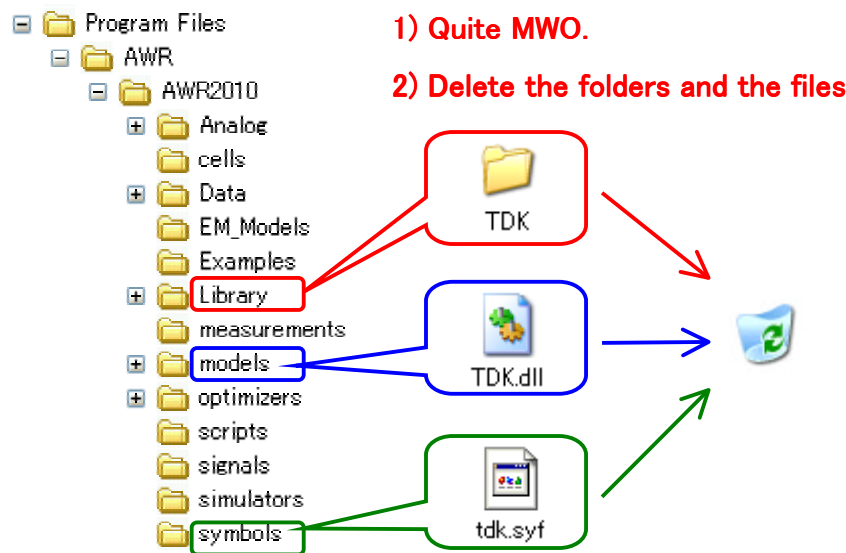
  <COPYRIGHT>AWR</COPYRIGHT>
  <SUMMARY>Entry point XML file for circuit libraries</SUMMARY>
  <FILE Name="* AWR web site">http://www.awrcorp.com/weblibs/9_0/top_v9.xml</FILE>

  <FILE Name="TDK" Icon="folder">TDK/TDK_Root.xml</FILE>

</XML_COMPONENT_DATA>
```

< Uninstall of the library >

- 1) Quit Microwave Office if it runs.
- 2) Delete the folders and the files shown below.
 - <MWO install dir>/Library/TDK
 - <MWO install dir>/models/TDK.dll
 - <MWO install dir>/symbols/tdk.syf
- 3) Delete the line regarding TDK library from “lib.xml” file and save.

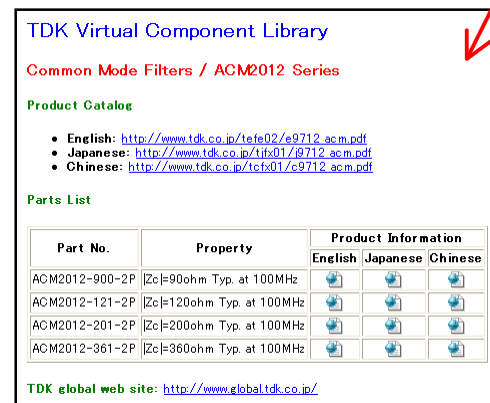
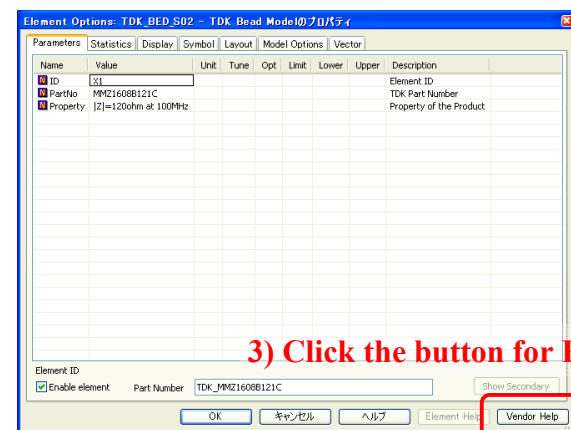
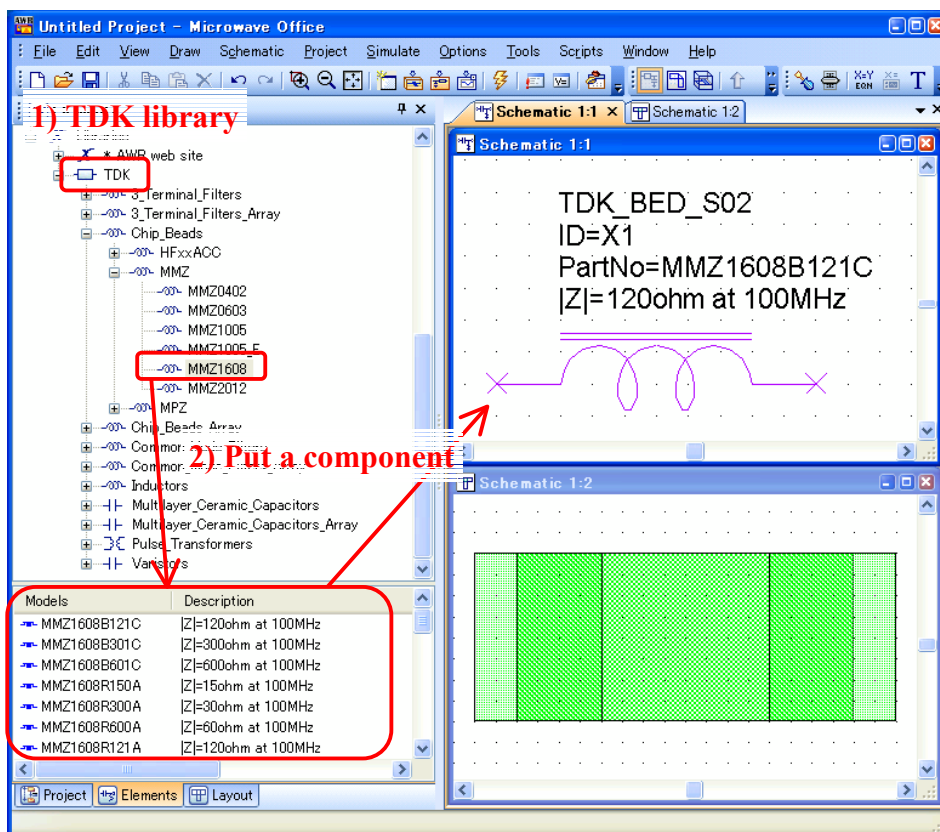


```
<?xml version="1.0"?>
<XML_COMPONENT_DATA xmlns="urn:awr-lib-data">
  <COPYRIGHT>AWR</COPYRIGHT>
  <SUMMARY>Entry point XML file for circuit libraries</SUMMARY>
  <FILE Name="* AWR web site">http://www.awrcorp.com/weblibs/9_0/top_v9.xml</FILE>
  <FILE Name="TDK" Icon="folder">TDK/TDK Root.xml</FILE>
</XML_COMPONENT_DATA>
```

3) Edit the “lib.xml” file and save.

< Putting a component and selecting a part >

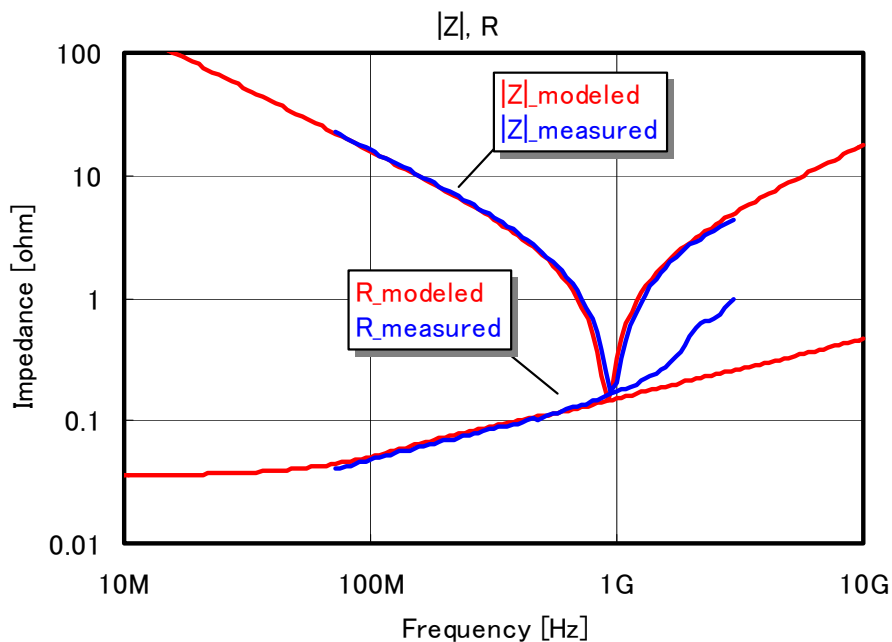
- 1) After installing the library, the icon of TDK library will be added in the Element Browser.
- 2) Drag and drop a component and put a symbol onto the schematic window.
- 3) By clicking the Vendor Help button in the property window, links to PDF catalog and detailed information are shown. Internet connection is necessary to see the contents of those links.



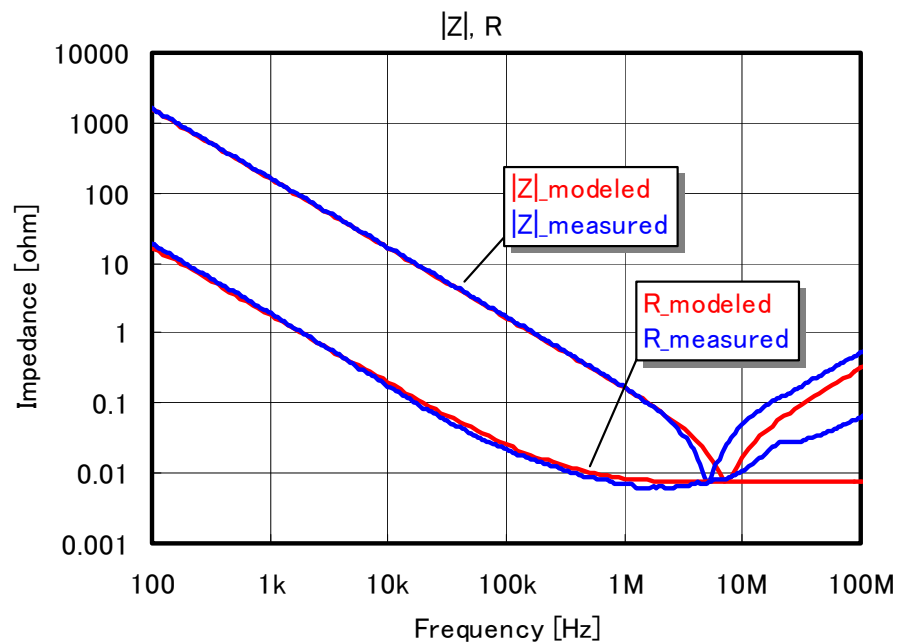
< Comparison between equivalent circuit models and measured data >

Comparison between the equivalent circuit models and measured data are shown in the following. Since the equivalent circuit models well match to measured results as shown in the following pages, simulation result that matches to actual property can be obtained.

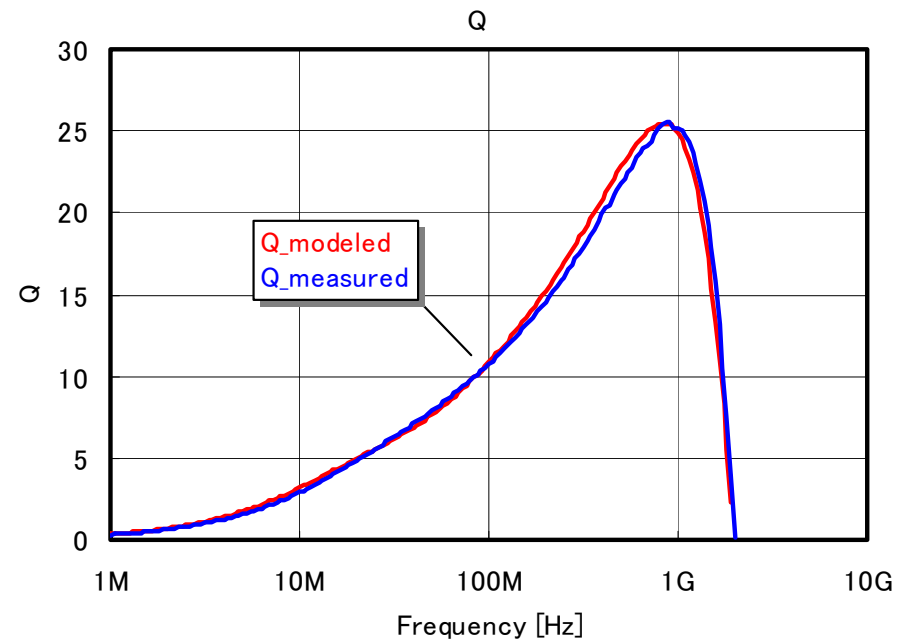
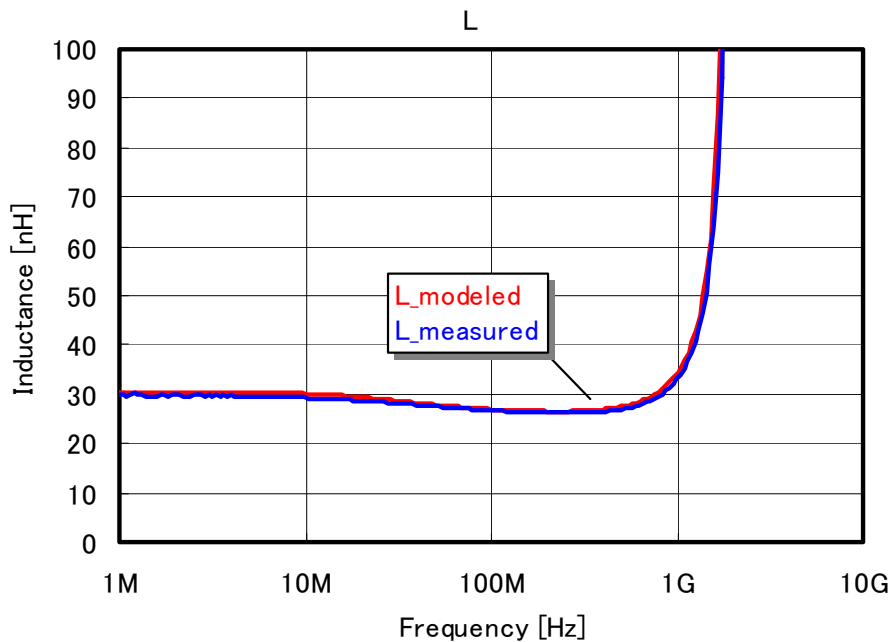
Capacitor "C0603CH1H101J"



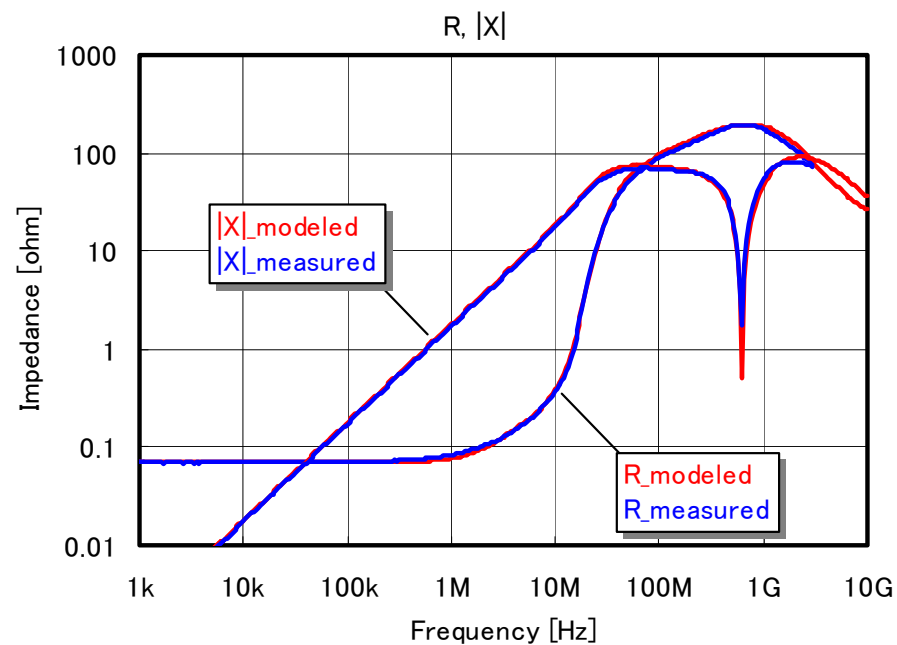
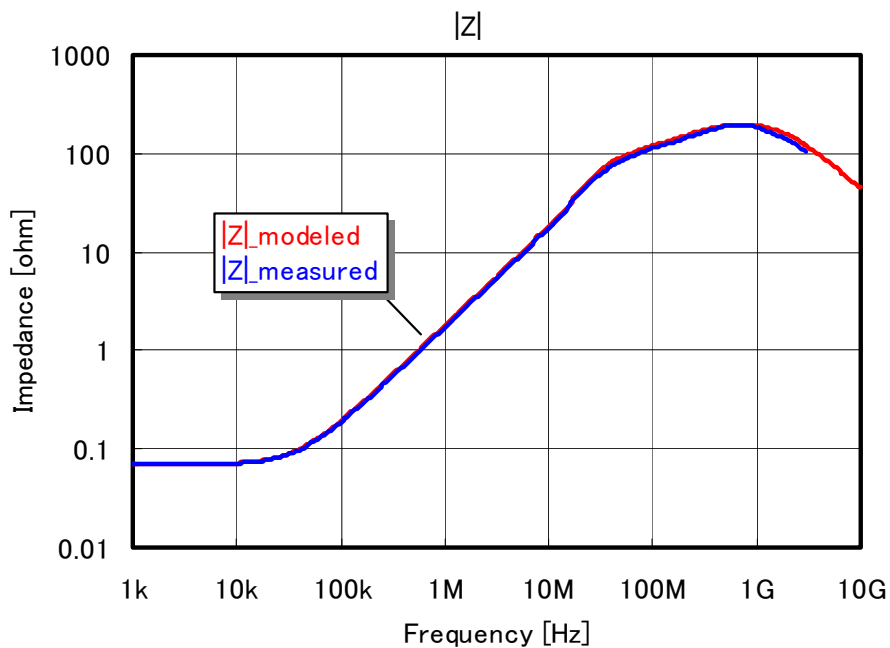
Capacitor "C2012X5R1A105K"



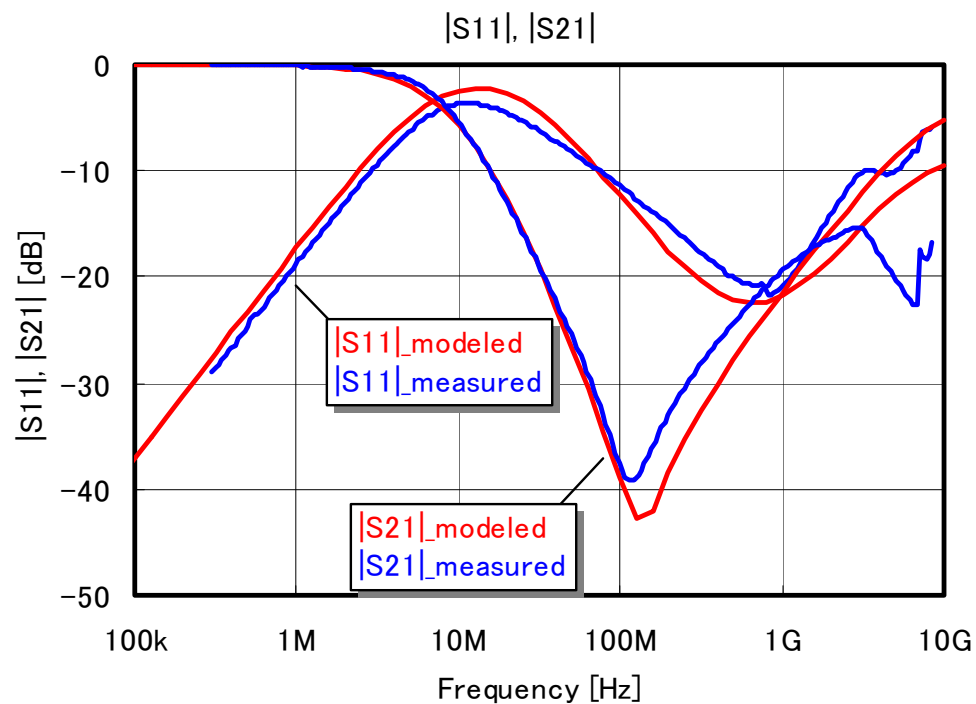
Inductor "MLG1005S27NJ"



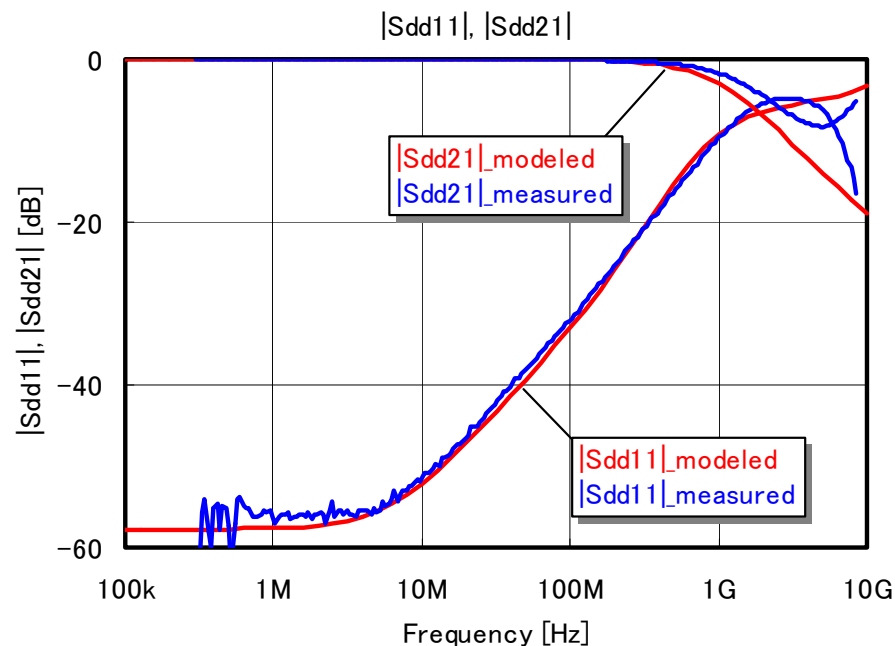
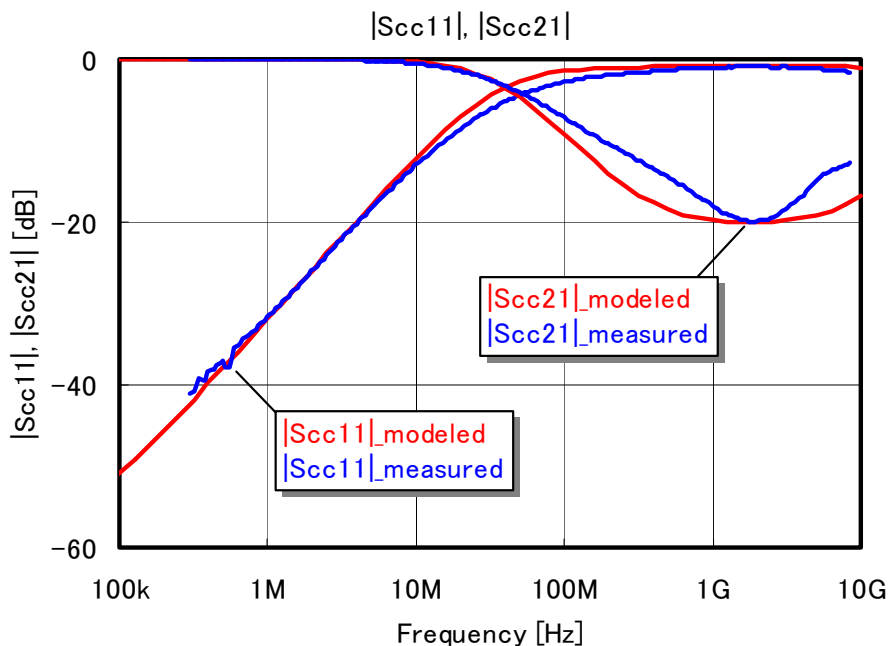
Chip Bead "MMZ1608Y121C"



3-Terminal Filter “ACF321825-102”

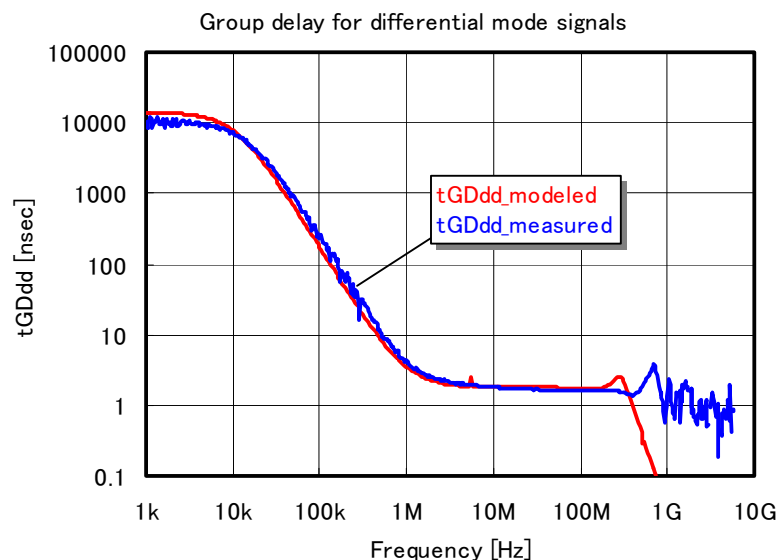
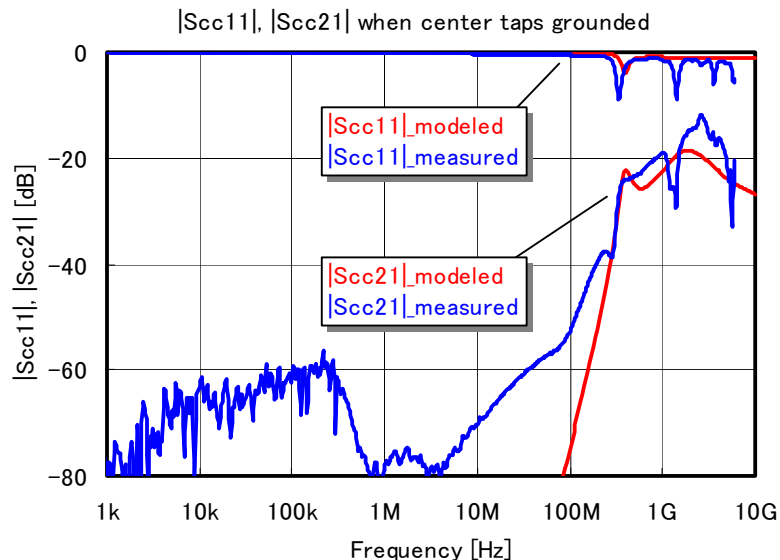
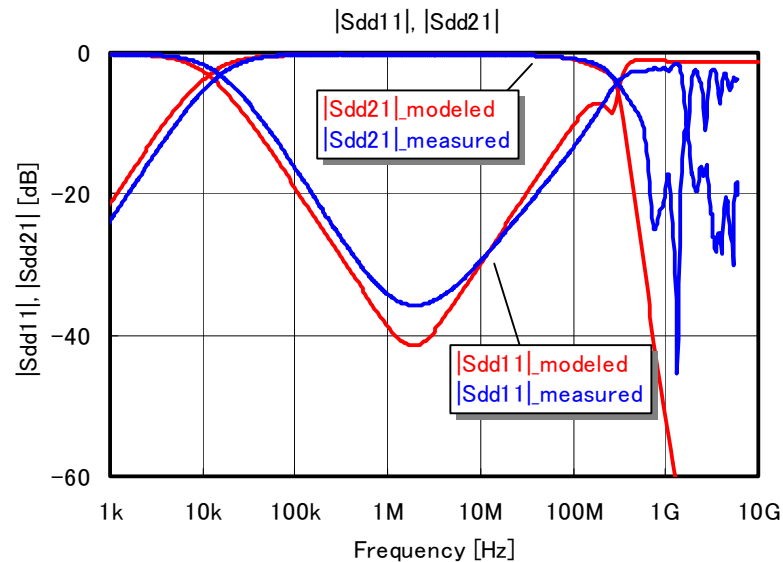
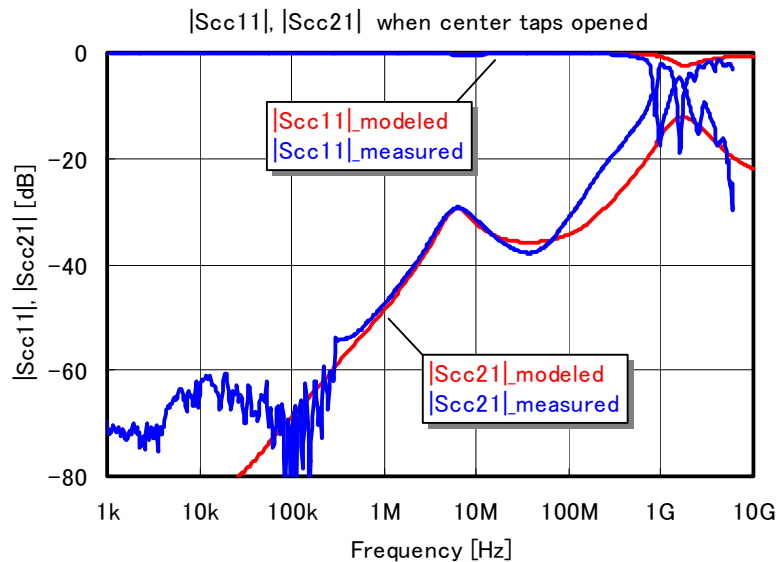


Common-Mode Filter "ACM2012-900-2P"

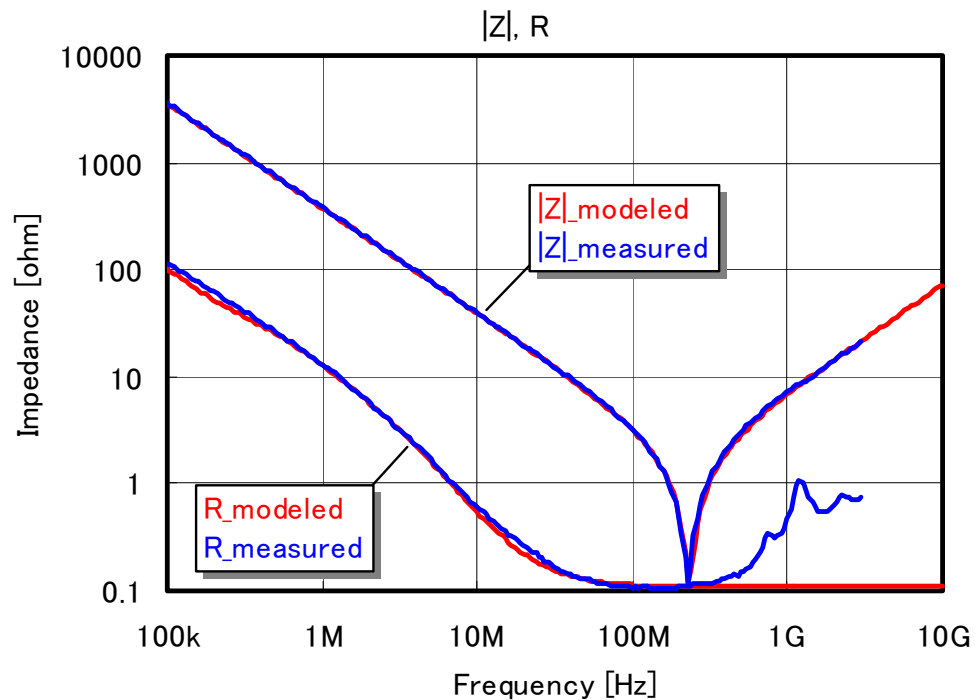


Comparison of modeled and measured property (6)

Pulse Transformer “TLA-6T118LF”



Varistor “AVR-M2012C390KT6AB”



END