Parts Selection Tool TDK Meister

Tutorial

TDK Corporation
Electronic Components Business Company
Marketing Strategy Group
Products & Application Collaboration
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Contents

Note: The screenshots used in this document are ones in development. Those may differ from the actual ones.

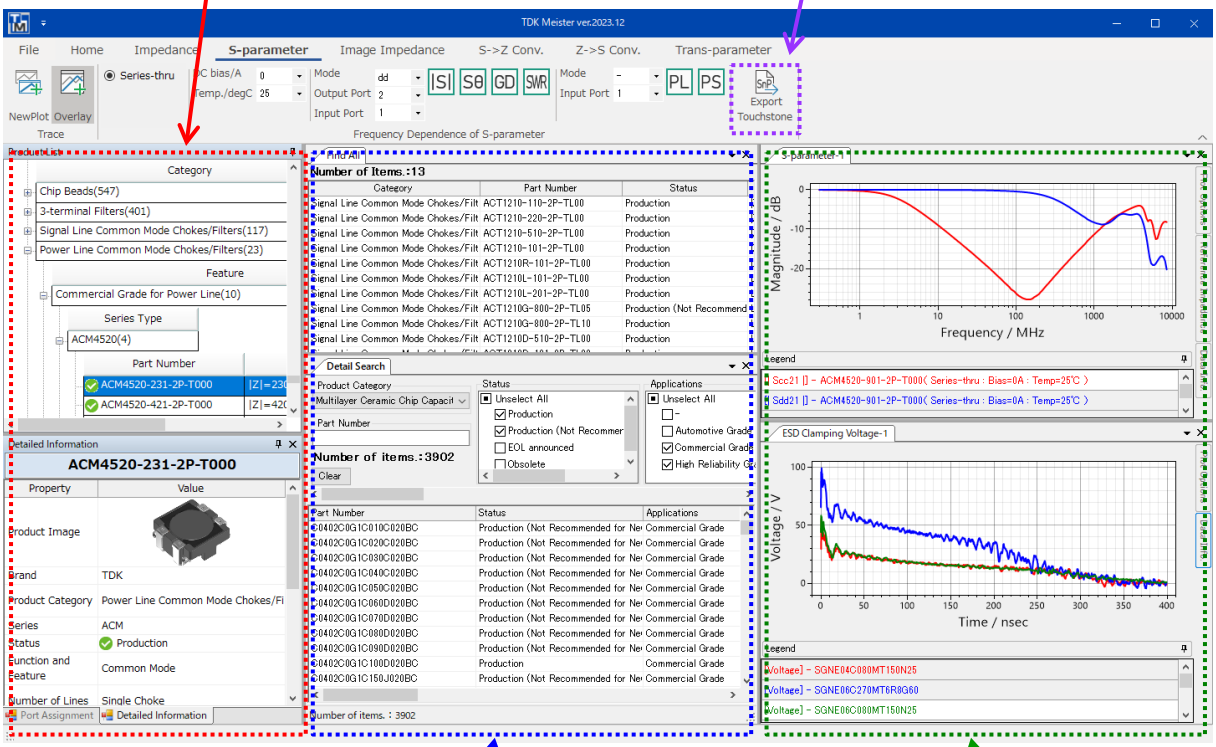
1 Overview of TDK Meister

Major Functions of TDK Meister

TDK Meister is a software tool that can search TDK's electronic components and display their characteristics.
TDK Meister has 4 major functions;
1 Display Information of Products,
2 Search,
3 Display Graphs for Characteristic Data, and
4 Output Data.

1 Display Information of Products
・Product List
・Detailed Information

4 Output Data
・Export Touchstone files



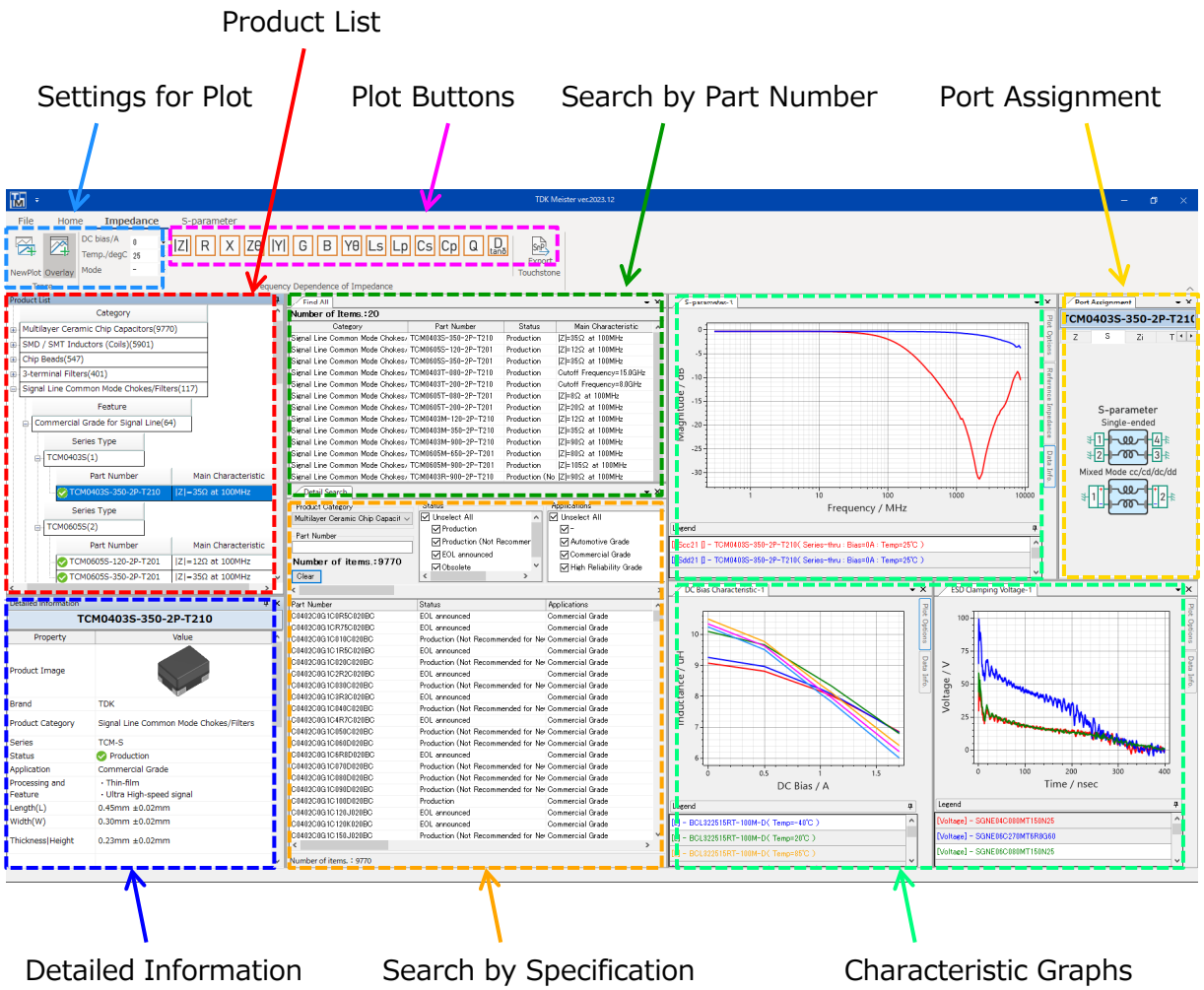
2 Search
・Search by Part Number
・Search by specification

3 Display Graphs for Characteristic Data
・Impedance data
・S-parameter data
・DC Bias property
・DC Superimposition property
・Current-Voltage property

1 Overview of TDK Meister

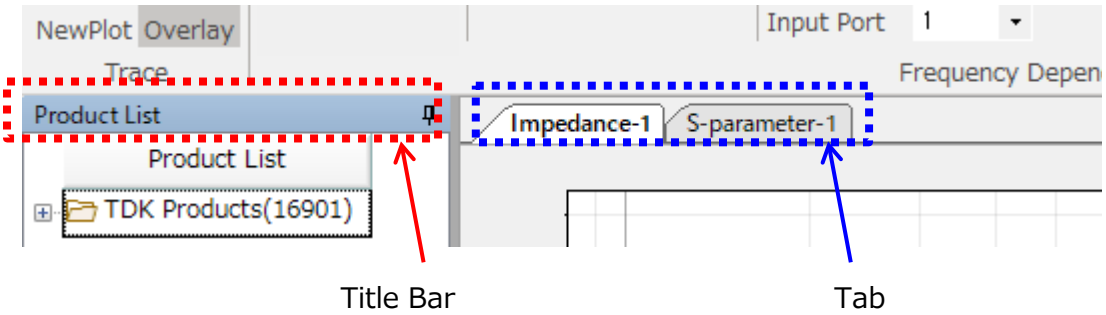
Window, Icons, Menu

The window of TDK Meister consists of Product List, Detailed Information, Search by Part Number, Search by Specification, Plot Buttons, Settings for Plot, Characteristic Graphs, Port Assignment, and so on.

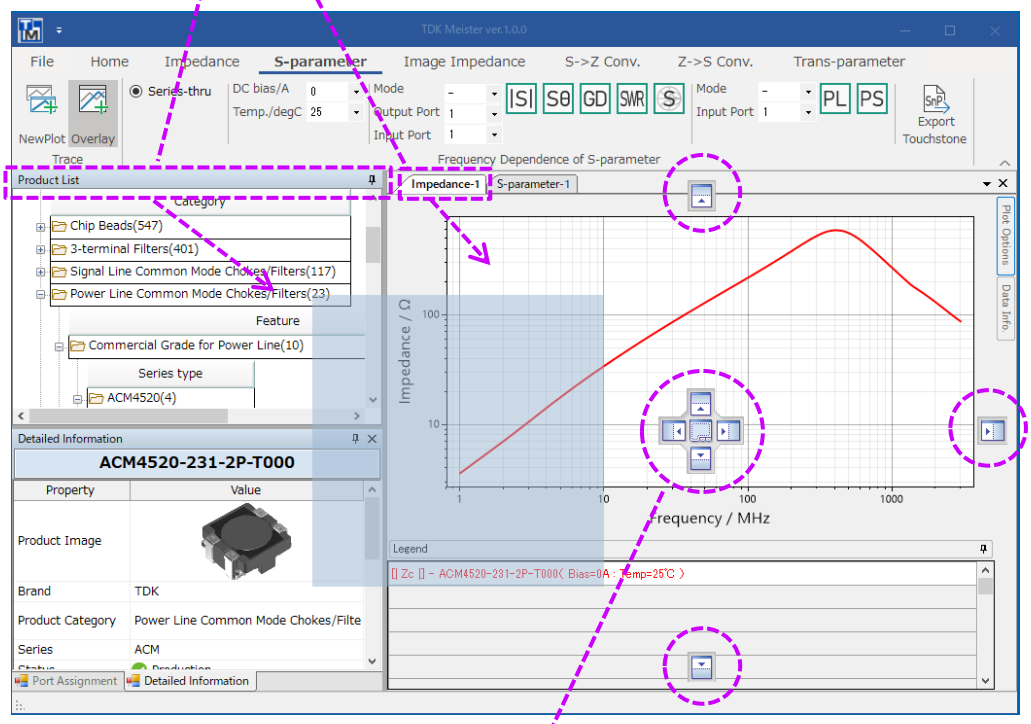


Floating, Docking

Each window can float and dock. To float and dock, drag and drop the title bar or tab at the upper part of each window.



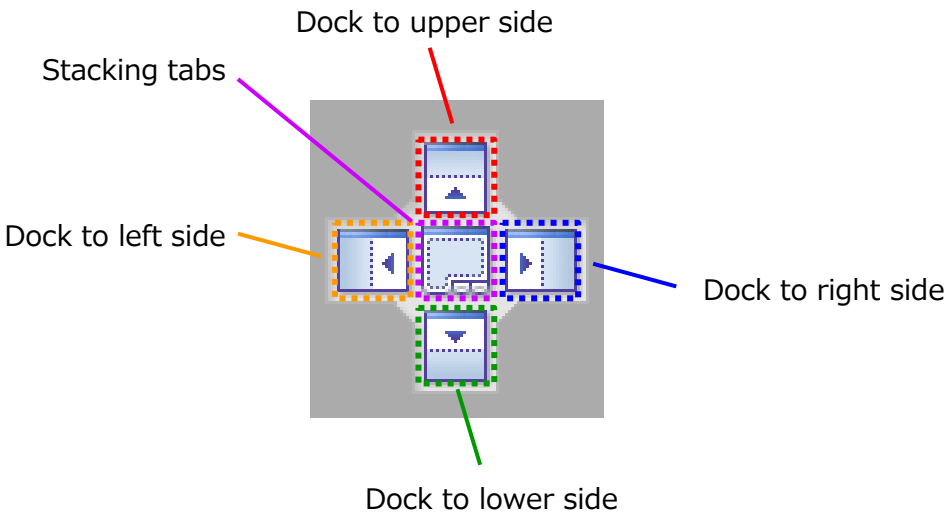
1) Drag and drop the title bar of the window you want to moved. (Move mouse pressing the mouse button).



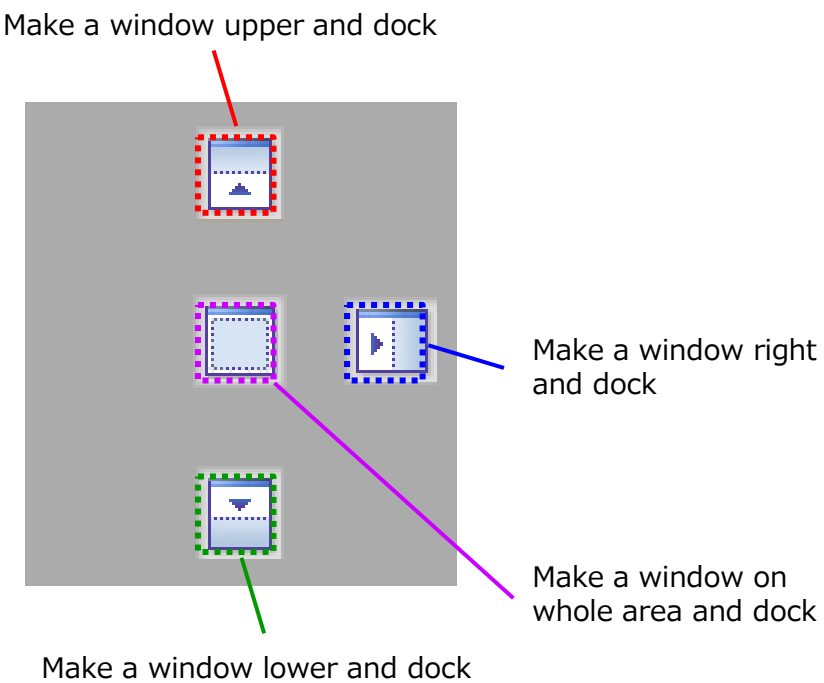
2) Icon showing the destination to dock is displayed, drop on the icon of your intent. (Release the mouse button)

Floating, Docking

In case to dock to an existing window



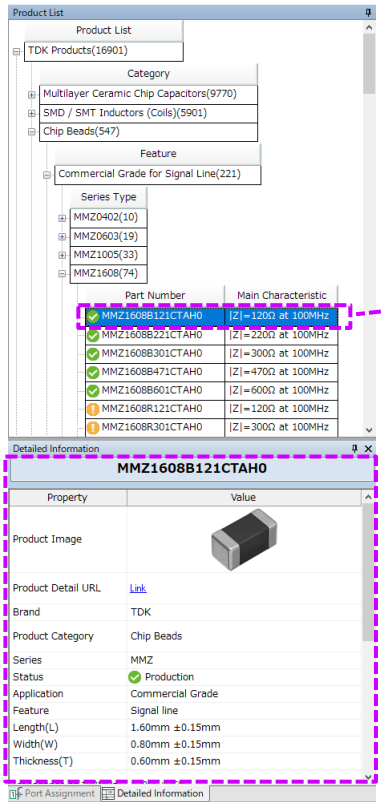
In case to make a new window and dock to it.



3 Display Information of Products, Search

Product List, Detailed Information

In Product List, part numbers of TDK electronic components are classified by product category, grade and feature, and series and displayed. Main characteristic and product status of each part number are also displayed. Once you click and select a part number in Product List, its product image, basic information, size, electronic characteristics, environment, and link to web page on TDK Product Center are displayed in Detailed Information.



1)Select part number in Product List

2)Detailed Information of the part number selected in Product List is displayed.

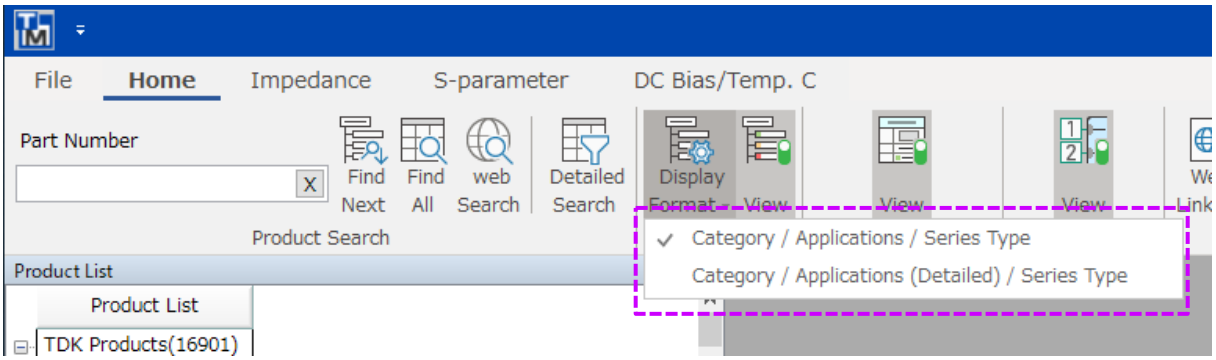
Icons at the left side of each part number mean their product status.

- Production
- Production (Not Recommended for New Design)
- EOL announced
- Obsolete
- In Development

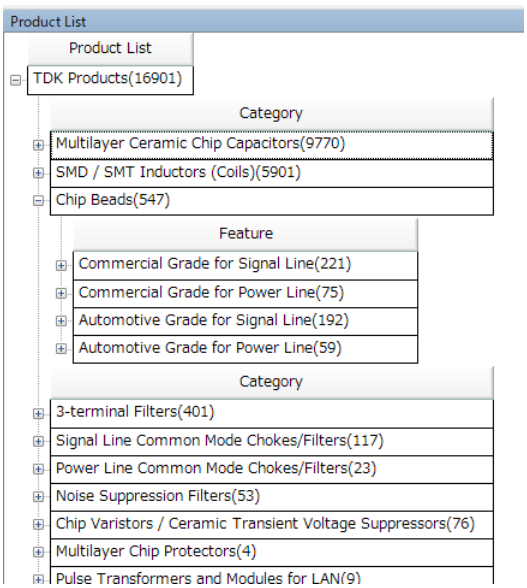
3 Display Information of Products, Search

Product List, Detailed Information

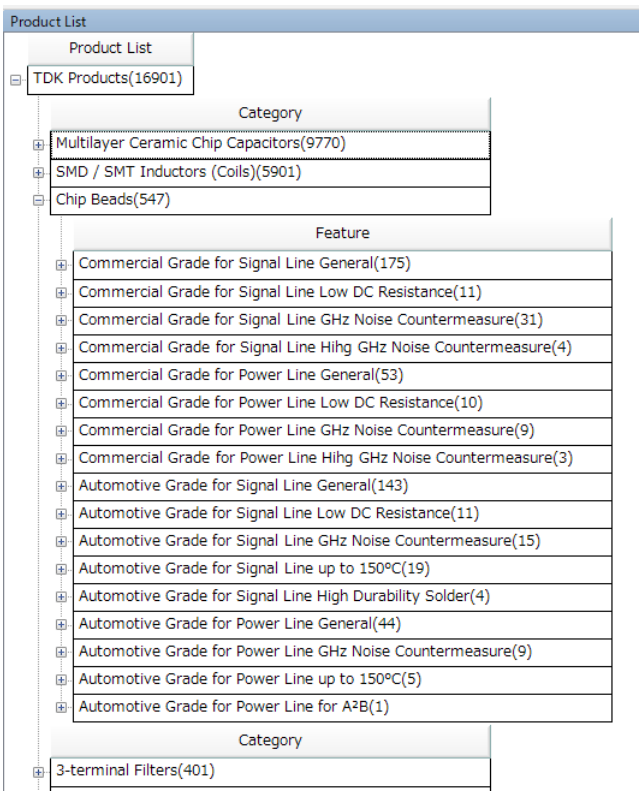
Product List can be displayed in 2 ways. Click Display Format to change the view.



In case “Category / Applications / Series Type” is selected.

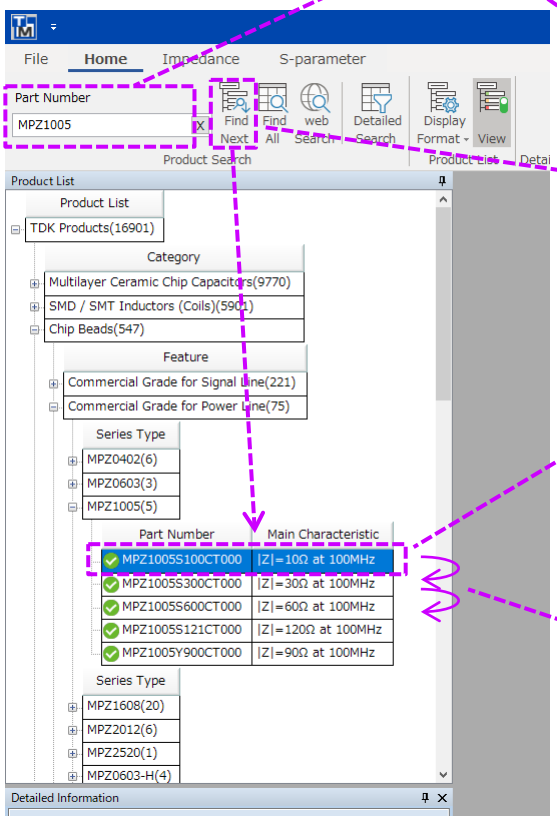


In case “Category / Applications (Detailed) / Series Type” is selected.



Search by Part Number, Find Next

Using search by part number, you can find the part number in Product List sequentially or can list all the part numbers that match the string input in the text box.



1) Input a string for search.

2) Click Find Next button or press Enter key.

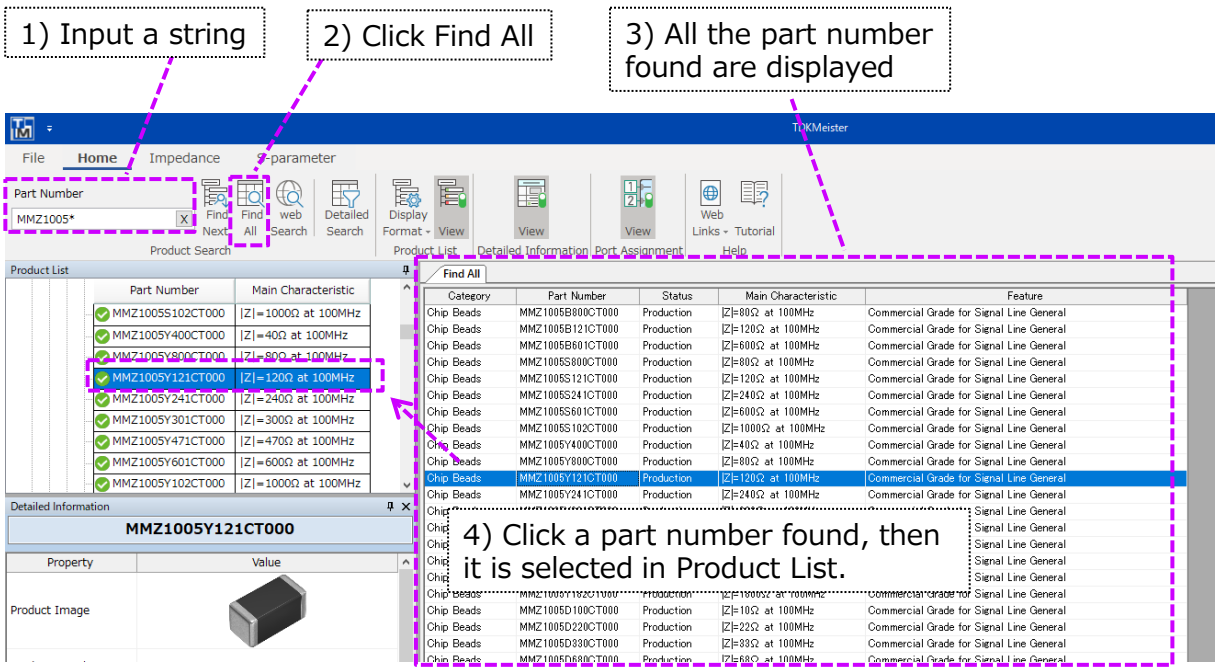
3) The part number that matches the string input is selected.

4) By clicking Find Next button, the part number is selected sequentially.

- Following the wild cards can be used.
  - ・The asterisk (*) matches any sequence of characters.
  - ・The question mark (?) matches any single character.

Search by Part Number, Find All

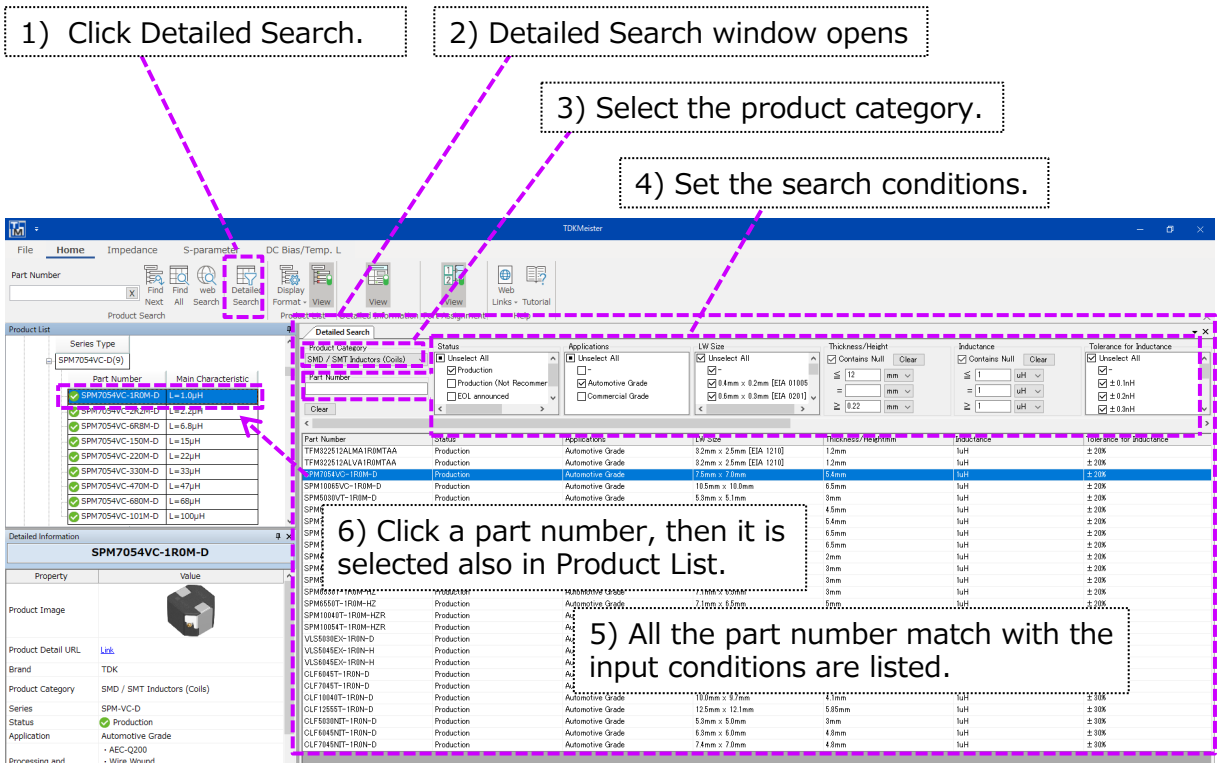
Using search by part number, you can find the part number in Product List sequentially or can list all the part numbers that match the string input in the text box.



- Find All goes in real time. With changing of the string input, the result changes immediately.
- Following the wild cards can be used.
  ・The asterisk (*) matches any sequence of characters.
  ・The question mark (?) matches any single character.

Search by Catalog Specification

Using search by catalog specification, you can search products combining multiple specifications. Since the search result is dynamically renewed with change of the search conditions, you can quickly and easily narrow down the part numbers that meet the specifications that you need.

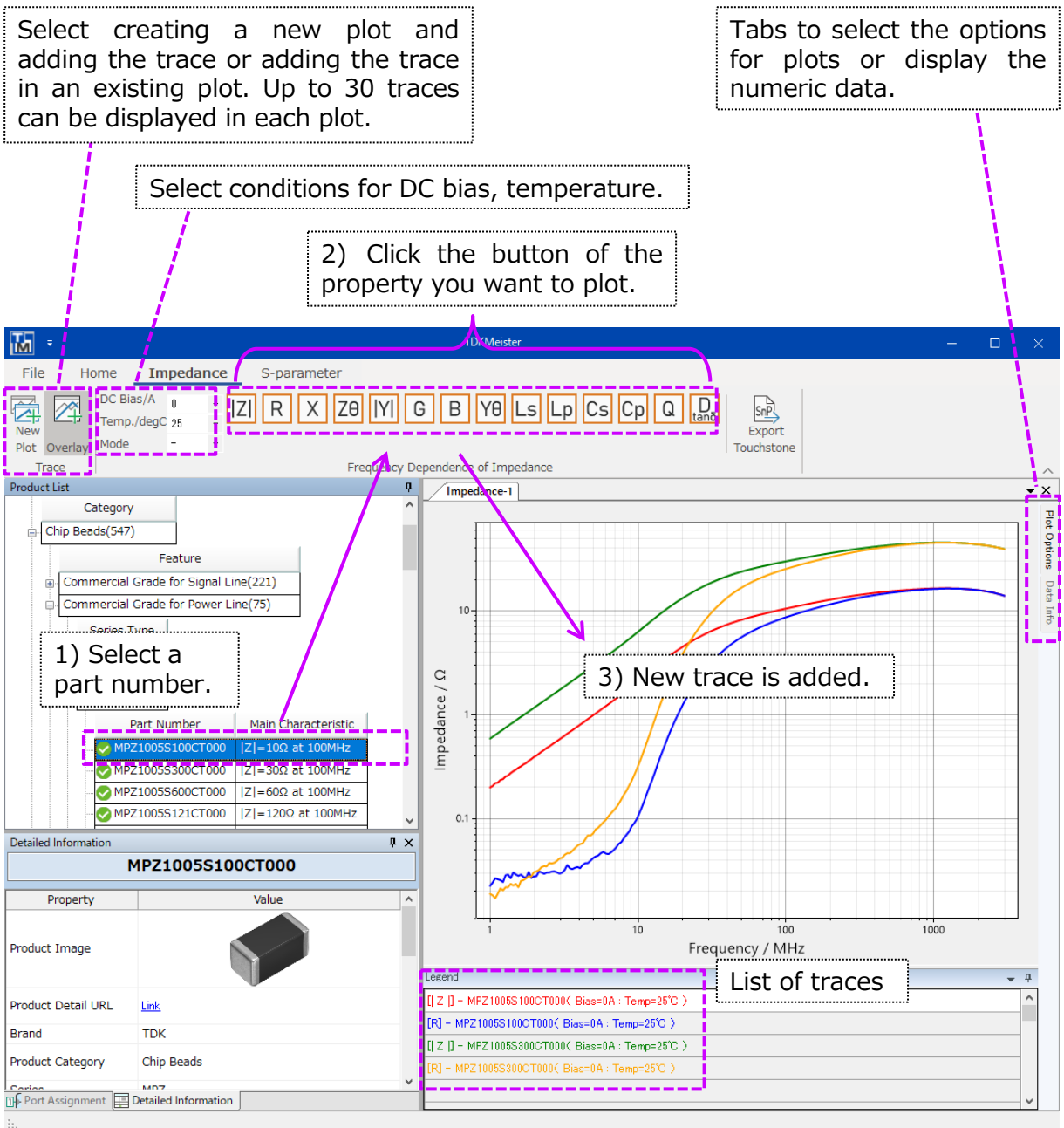


- Following the wild cards can be used in search condition by part number.
  - ・The asterisk (*) matches any sequence of characters.
  - ・The question mark (?) matches any single character.

4 Display Graphs for Characteristic Data

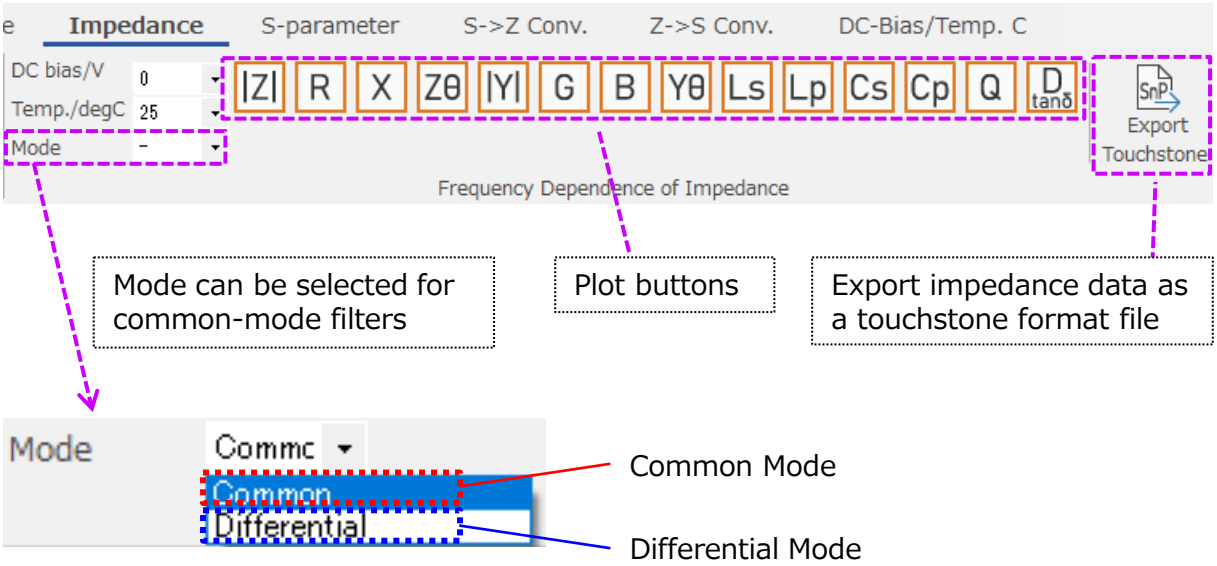
Basic Operation

Various characteristic data of TDK electronic components are registered in TDK Meister, and you can plot them on a graph. The frequency dependence of Impedance and S-parameter data can be plotted for almost all the products. The DC bias, DC superimposition, temperature, and voltage-current characteristics can also be plotted depending on product category.



Impedance

There are around a dozen plot buttons in the Impedance tab. For example, |Z| means the magnitude of impedance, and Ls means the equivalent series inductance. Once you click one of those buttons, the characteristic for the part number selected in Product List is plotted.

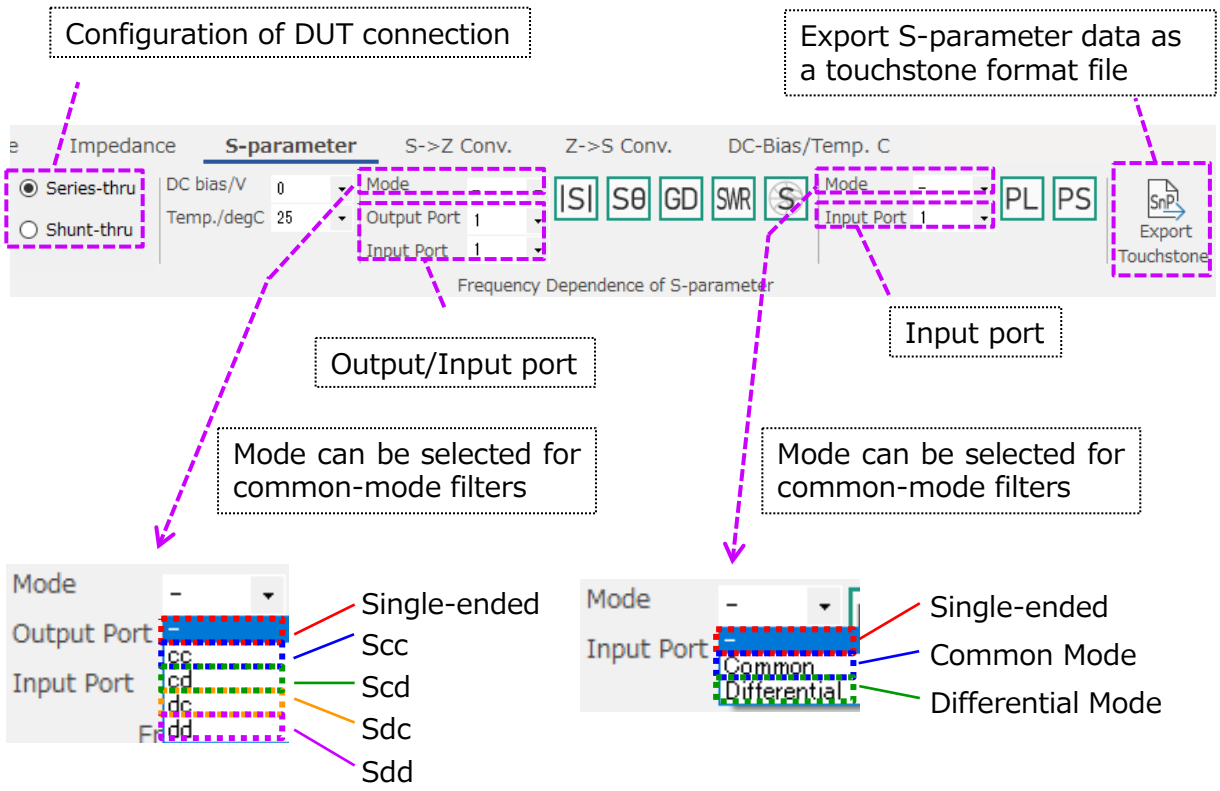


The meanings of each plot button are as follows,

- |Z| Magnitude of Z
- R Real part of Z
- X Imaginary part of Z
- Zθ Argument of Z
- |Y| Magnitude of Y
- G Real part of Y
- B Imaginary part of Y
- Yθ Argument of Y
- Ls Equivalent series inductance
- Lp Equivalent parallel inductance
- Cs Equivalent series capacitance
- Cp Equivalent parallel capacitance
- Q Quality factor
- D tanδ Loss coefficient

S-parameter

Open S-parameter tab to display S-parameter data. In order to plot it, you need to set some conditions. Mode is setting for single-ended or mixed-mode, Input Port and Output are setting for ports. For example, Mode is "dd", Output Port is "2", and Input Port is "1" then, it means the mixed-mode S-parameter Sdd21.

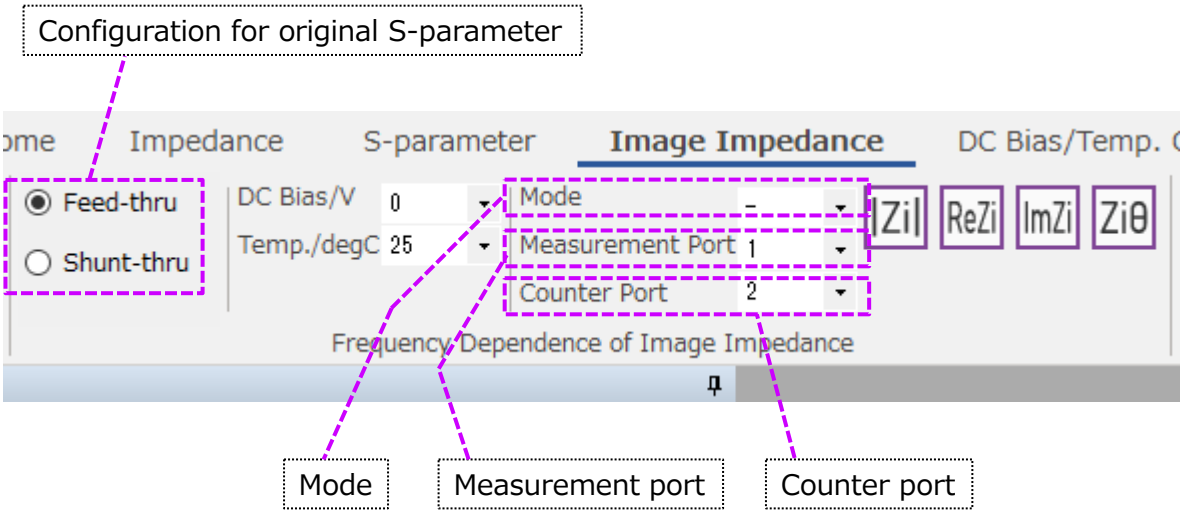


The meanings of each plot button are as follows,

- |S| Magnitude of S
- Sθ Argument of S
- GD Group delay
- SWR Standing wave ratio
- PL Power loss
- PS Power scattering

Image Impedance

Open Image Impedance tab to display Image Impedance. In order to plot it, you need to set some conditions. Mode is setting for single-ended or mixed-mode, Measurement Port is the subject port for displaying image impedance, and Counter Port it the port paired with Measurement Port. For example, Mode is “Differential", Measurement Port is “1", and Counter Port is “2" then, it means the image impedance for differential mode at port 1 between port 1 and 2.

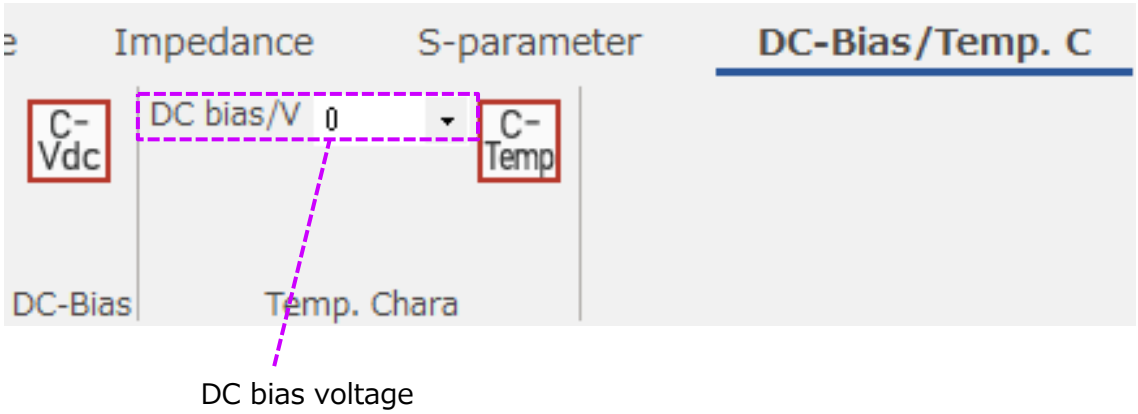


The meanings of each plot button are as follows,

- |Zi| Magnitude of Zi
- ReZi Real part of Zi
- ImZi Imaginary part of Zi
- Ziθ Argument of Zi

DC Bias, Temperature Characteristics

The DC bias characteristic and temperature characteristic can be displayed for multilayer ceramic chip capacitors.

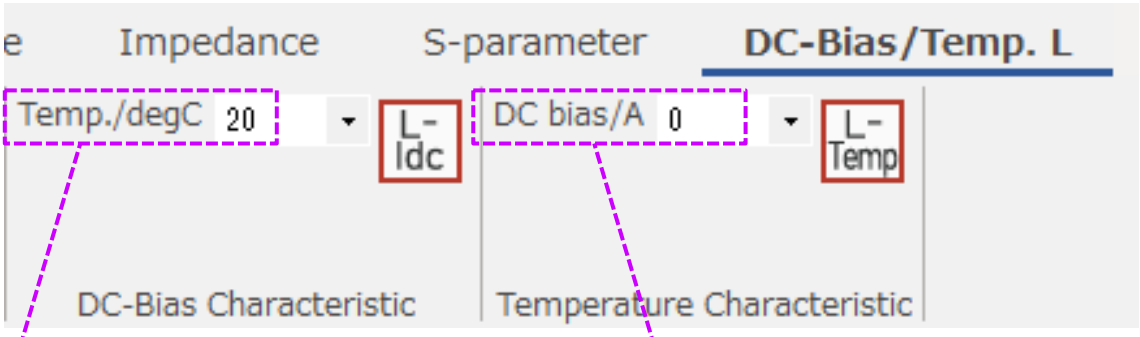


The meanings of each plot button are as follows,

- C-Vdc — DC bias property
- C-Temp — Temperature dependence

DC Superimposition, Temperature Characteristics

The DC superimposition characteristic and temperature characteristic can be displayed for inductors for power circuits.



The meanings of each plot button are as follows,

Superimposition property

Temperature dependence

4 Display Graphs for Characteristic Data

ESD Characteristics

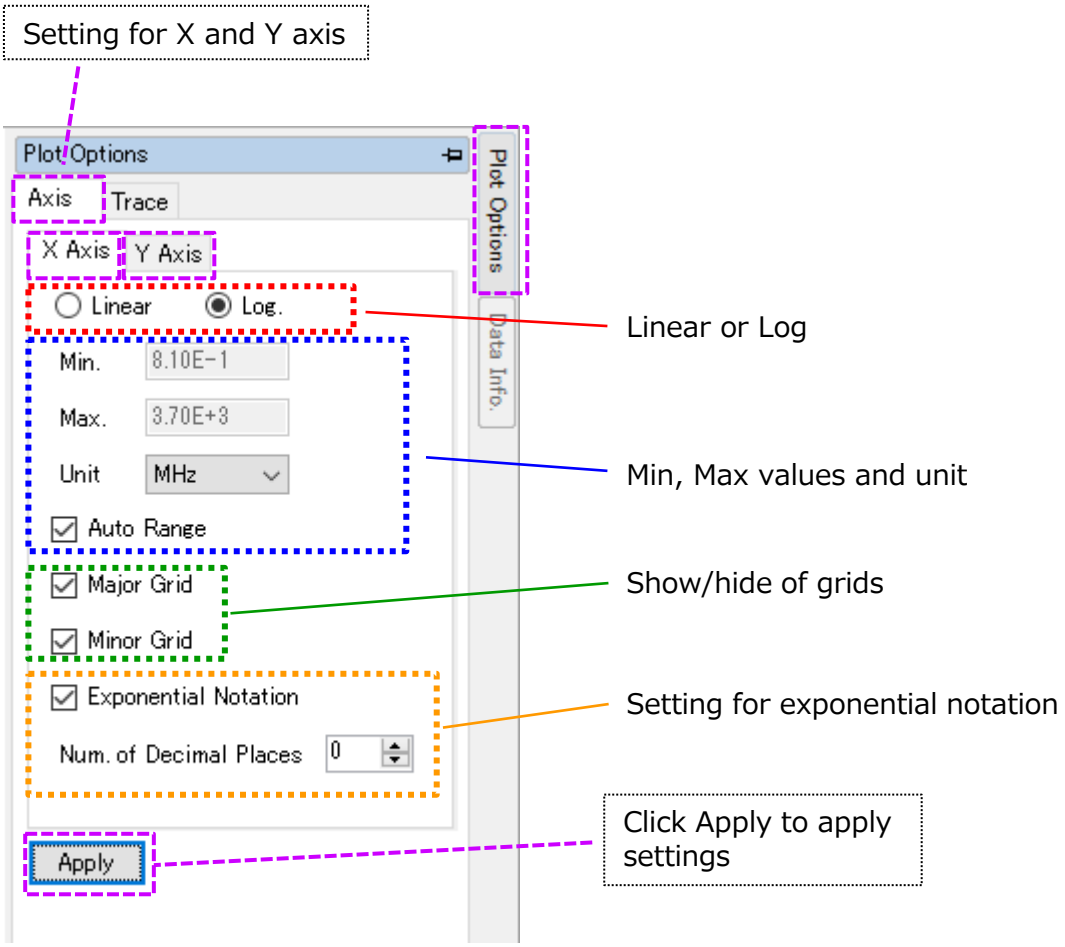
The current-voltage characteristic, ESD clamping voltage, etc. can be displayed for ESD protection devices.

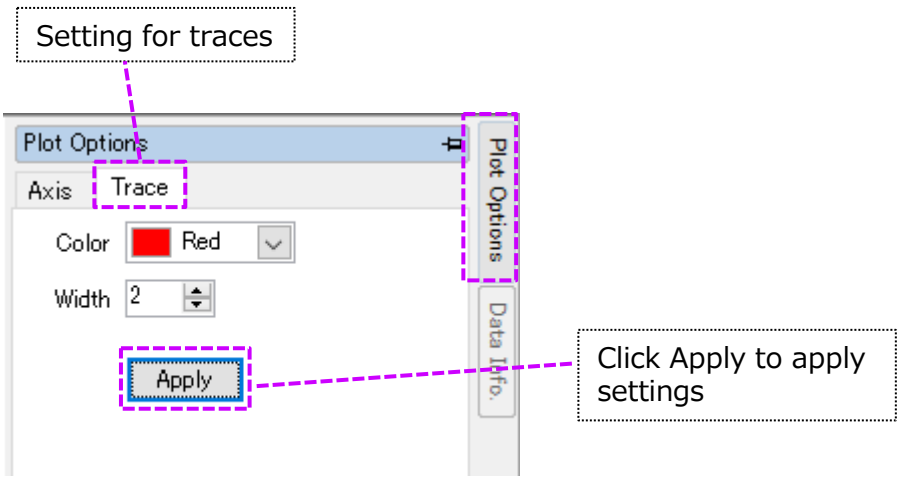
The meanings of each plot button are as follows,

- I-V — Current-volage property
- V-I — Voltage-current property
- TLP I-V — TLP current-voltage property
- V-Time — ESD cramp voltage property

Setting for Graphs

The format, scale, unit for graph axis, show or hide for grids, color and width for trace can be adjusted.

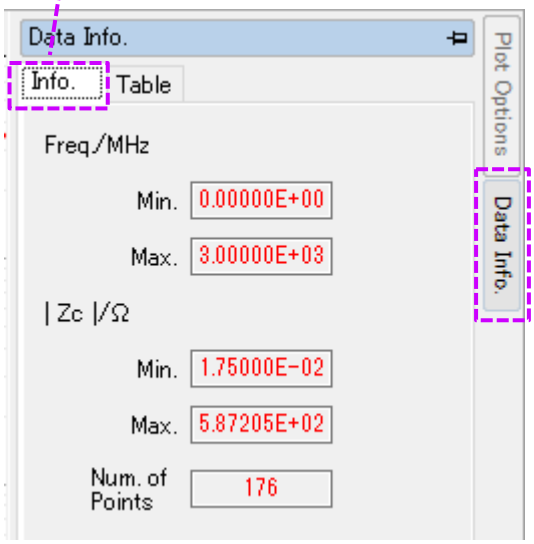




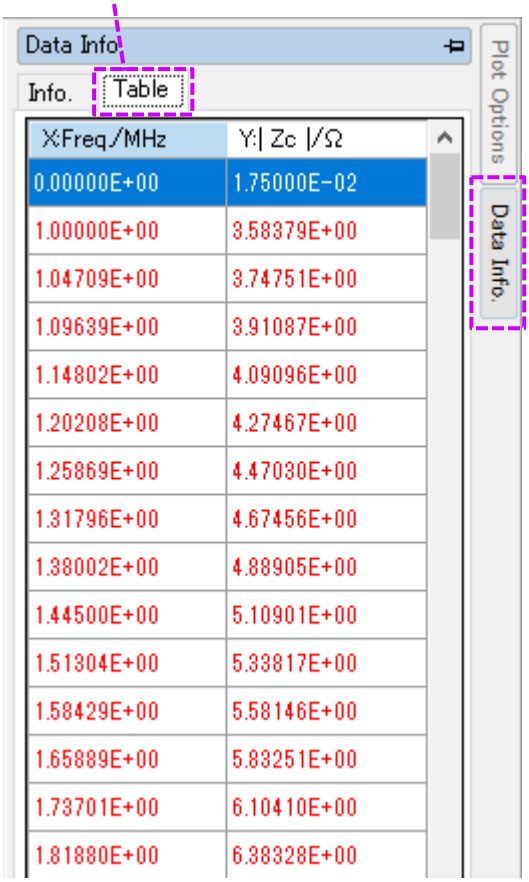
Data Information

For the trace data selected in Legend, minimum value, maximum value, number of points, and data table can be displayed.

Info.



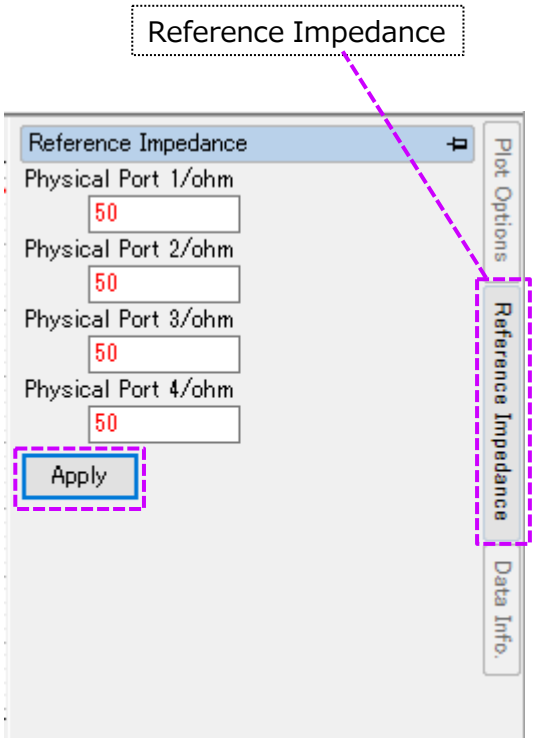
Table



Numeric data for the selected trace is displayed.

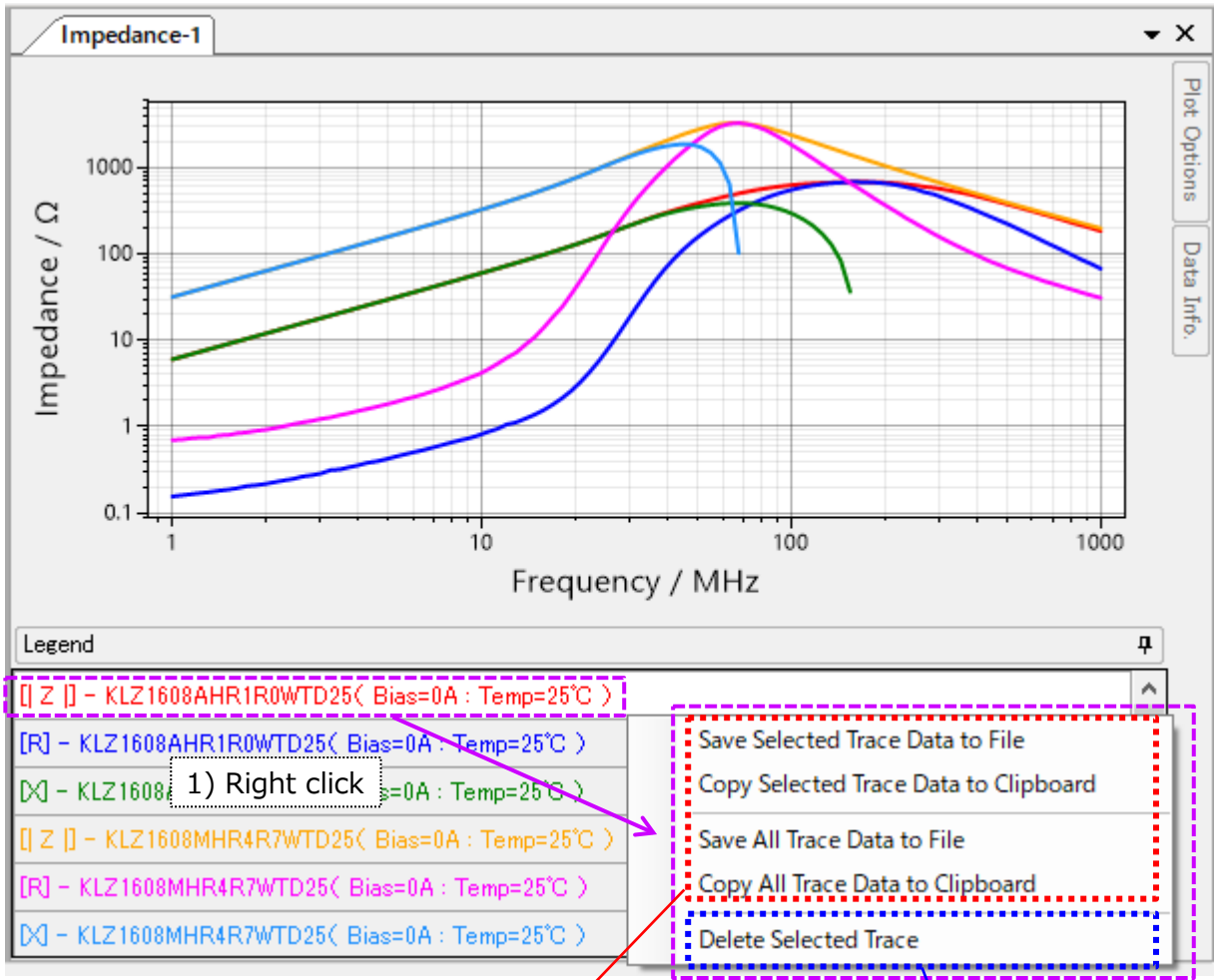
Reference Impedance

The reference impedance for S-parameter data can be changed. The reference impedance can be set for each port.



Legend

The numeric data, screen shot can be saved as a file or copied to clipboard from the right click menu in Legend.

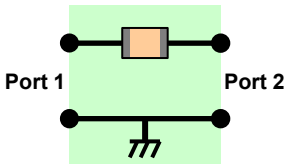
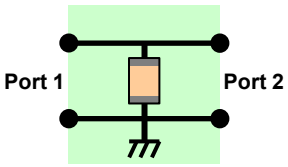
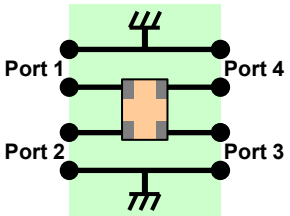


Numeric data of the traces can be saved as a file or copied to clipboard.

Select to delete the trace.

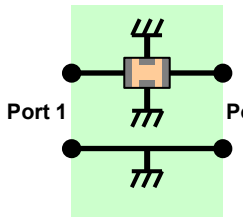
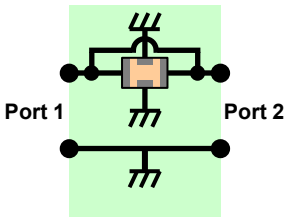
DUT Configurations to obtain S-parameter

Following the configurations are used to obtain S-parameter data for electronic components with 2 or 4 terminals.
- Series-thru
- Shunt-thru

Type of Component	2-terminal Components		4-terminal Components
Products	Inductor, Beads		CMFs
	MLCCs, Varistors		
Configuration	Series-thru	Shunt-thru	Series-thru
Circuit Diagram			

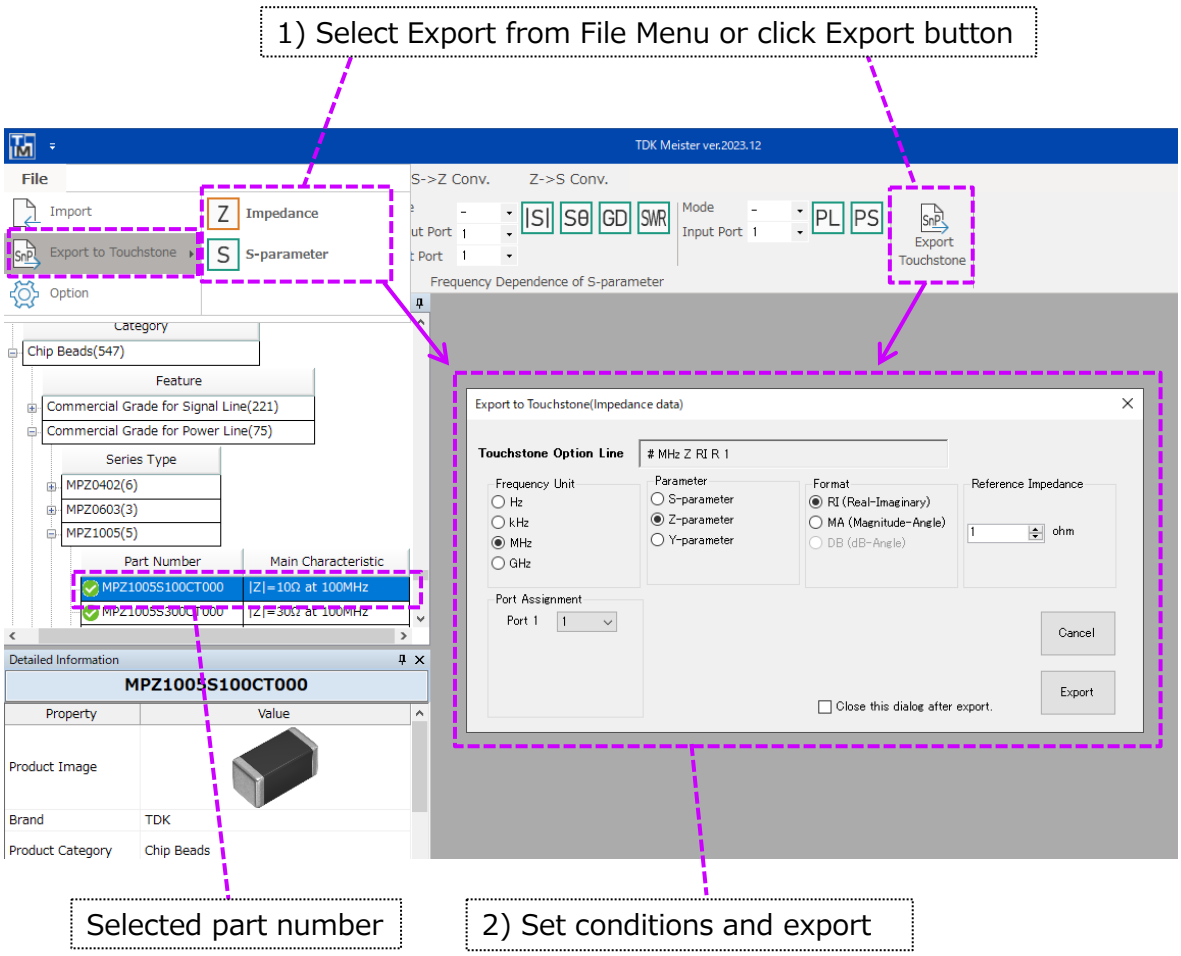
DUT Configurations to obtain S-parameter

Following the configurations are used to obtain S-parameter data for 3-terminal Filters.
- General / Feed-thru
- Shunt-thru

Type of Component	3-terminal Filters		
Products	MEM	YFF	
Configuration	None	Feed-thru	Shunt-thru
Circuit Diagram			
	GND pins of DUT connected to GND of substrate		

Export

Impedance or S-parameter data of the selected part can be export as a touchstone format file.




TDK