

TDK's Component Modeling Tools

What are the differences between TDK's component modeling tools, SEATS and CCV?

Frequently asked questions regarding the difference between TDK's software design tools, Seats (Selection Assistant of TDK components) and CCV (Components Characteristic Viewer)

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Abstract

TDK has created both SEATs and CCV as tools for design engineers to model and analyze components in different operating conditions. Measurements such as ESR, impedance, and DC Bias are some of the few test results that many design engineers are interested in when it comes to the capacitor products. Both SEATs and CCV have the capability of modeling such data and more, but these tools have differences in features and advantages when compared side by side.

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Q1. What component modeling data does TDK offer online?

A1. TDK offers a variety of component modeling tools online for modeling the characteristics of its components. From the TDK website, the modeling software can be downloaded which includes S-parameter data and component simulated characteristic data.

Q2. Where on the TDK website can the performance data be found? Can the data be downloaded?

A2. TDK's component modeling tools can be found at www.tdk.com on the "Technical Support Tools" webpage. The Selection Assistant of TDK components (SEATs) and the Components Characteristic Viewer (CCV) are the two (2) main component modeling tools that are shown. CCV allows users to simulate component characteristics through a web based modeling tool. SEATs can be downloaded onto a user's computer and simulation data can be generated through the installed program. The TDK Virtual Component Library is an online area under Technical Support Tools offers an array of component simulation data that can be downloaded and used in three party modeling tools from Cadence, Agilent, and many other component modeling software manufacturers.

Q3. What types of components have component modeling data available in CCV and SEATs, and how many items are available?

A3. Both SEATs and CCV have data for MLCCs, inductors, ferrite beads, common mode filters, 3-terminal filters, varistors, and

NTC thermistors. Within each of these product groups, there are a wide range of case size and values offered. As of Aug 2008, SEATs contained data for over 3,800 items and CCV has over 3,100 items.

Q4. What are the differences between TDK's two main component modeling tools, CCV and SEATs?

A4. Both CCV and SEATs offer a wide array of data available that can be modeled either online, but SEATs can be downloaded as a useful desktop application program. This is one of the main differences between CCV and SEATs. CCV is a web-based tool that can only be used with available access to the internet. SEATs can be downloaded directly onto the user's computer as a useful desktop application. Table 1 gives a breakdown of some of the specific features and advances that can be found in CCV and SEATs.

Q5. When should I choose to use CCV over SEATs?

A5. Both CCV and SEATs contain much of the same data, but SEATs contains more products and can be downloaded for later use offline. CCV is web-based, which requires the user to have an active internet connection, but it is typically most current. Selecting which tool to use can be based on user's specific needs.

Q6. What frequency characteristic data is available in TDK's performance tools?

A6. Frequency characteristics data is very important in knowing how a circuit will perform in actual operation. For capacitors,

frequency affects the reactance value seen by the circuit, thereby affecting the impedance. Impedance and ESR are among the available frequency characteristic data that can be found in the CCV and SEATs tools. The frequency characteristics of a specific application can be adjusted according with in the specifications of each item included in both CCV and SEATs. SRF (Self Resonance Frequency) and Q (Quality Factor) can also be displayed in both component modeling tools.

Q7. Can DC Bias and ripple current performance data be generated easily?

A7. Both DC Bias and ripple current data can be viewed through CCV online using a parametric search. In SEATs, a drop-down search menu approach is used to find DC Bias and ripple current data. For newer items that may not have DC bias data in these tools, TDK can provide the data directly per customer request.

Q8. Can the performance data of multiple parts be compared with each other?

A8. Yes, CCV and SEATs allow the user to display data for multiple items on one plot for comparison. CCV will allow the user to plot up to 4 different TDK items on one plot. SEATs can display data for over 10 different TDK items on one plot. This is a good feature when many different items need to be compared for their performance.

Q9. Finding specific data on the web can be aggravating, what is the easiest way to search for data?

A9. The quickest way to find data online for TDK is through the "[Technical Support Tools](http://www.tdk.com/tst.php)" webpage (<http://www.tdk.com/tst.php>). On this page, you can find CCV and SEATs webpages. Also you can find other tools such as the TDK Virtual Component Library.

Q10. Your web site says the data is "JEITA compliant", what does that mean?

Q10. JEITA stands for **Japan Electronics and Information Technology Industries Association**. It is a governing body which establishes industry standards for Japanese member companies. More information about JEITA, please visit the following website, (<http://www.jeita.or.jp/english/about/profile.pdf>)

Q11. What should I do if I can not find the data I need?

A11. Contact TDK through one of the locations listed at the following webpage, (http://www.tdk.com/americas_contact.php) or listed at the end of this FAQ.

Table 1 : Comparison between TDK Component Modeling Tools

Features and Advantages	CCV	SEATs
Component Types		
Ferrite Beads	yes	yes
Inductors	yes	yes
Capacitors	yes	yes
3-Terminal Filters	yes	yes
Common Mode Filters	yes	yes
Varistors	yes	yes
NTC Thermistors	no	yes
Baluns	no	yes
Data Available		
DC Bias	yes	yes
Ripple Current	yes	yes
Impedance	yes	yes
ESR	yes	yes
ESL	yes	yes
Temperature Characteristics	yes	yes
Reactance	yes	yes
Admittance	yes	yes
Conductance	yes	yes
Susceptance	yes	yes
Loss Factor	yes	yes
Q Factor	yes	yes
Power Scattering Ratio	yes	yes
Group Delay	yes	yes
Equiv. Parallel Inductance	yes	yes
Equiv. Series Capacitance	yes	yes
Equiv. Parallel Capacitance	no	yes
S-Parameter Data (S11, S12, S21, S22)	yes	yes
Features		
Downloadable Software Package, Web-based Simulation	Web-based	Software Download
Plot Overlay	yes	yes
Product Data Selection by Part Number and Characteristics	yes	yes
S-Parameters Export	no	yes
Touchstone Data Export	no	yes
Pulse Response Simulation (Single) Tool	no	yes
Pulse Response Simulation (Differential) Tool	no	yes
Inductor Simulation Tool	no	yes
Capacitor Simulation Tool	no	yes
TDR Plots	no	yes
NTC Thermistor Simulation Tool	yes	yes
User Defined Components Options	no	yes
Details		
Number of Components	>3,100 items	>3,800 items

End of Report

Contact one of the following TDK sales offices for further information or visit our website @ www.component.tdk.com, or www.tdk.com.

TDK CORPORATION OF AMERICA.

1221 Business Center Drive,
Mount Prospect, IL 60056
Phone: 847-803-6100
Fax: 847-803-6296

ATLANTA Sales Office

3235 Satellite Boulevard,
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Suite 300
Duluth, GA 30096
Phone: 678-584-2275
Fax: 678-584-2276

AUSTIN Sales Office

7000 N. Mopac
Expressway, 2nd Floor
Austin, TX 78731
Phone: 512-514-6308
Fax: 413-541-8329

CHICAGO District Office

1221 Business Center Drive,
Mount Prospect, IL 60056
Phone: 847-803-6100
Fax: 847-803-6296

DALLAS District Office

511 E. Carpenter Freeway,
Suite 690
Irving, TX 75062
Phone: 972-506-9800
Fax: 972-869-3353

DENVER Sales Office

357 South McCaslin Blvd,
Suite 200
Louisville, CO 80027
Phone: 303-926-4996
Fax: 303-926-4997

DETROIT District Office

38701 Seven Mill Road,
Suite 250
Livonia, MI 48152
Phone: 734-462-1210
Fax: 734-462-1193

FLORIDA**District Office**

800 Fairway Drive,
Suite 291
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Phone: 954-425-0095
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GREENSBORO**District Office**

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Phone: 336-292-0012
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HUNTSVILLE**District Office**

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INDIANAPOLIS**District Office**

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LOS ANGELES Office

11137 Warland Drive,
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NEW ENGLAND**District Office**

264 S. River Road.,
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NEW JERSEY**District Office**

99 Wood Ave.,
South 3rd Floor
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SAN DIEGO**District Office**

9350 Waxie Way.,
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SAN JOSE**District Office**

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Suite 510
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