Amplifiers Product Selector Guide Software Instructions & Tips

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General Instructions and Tips:

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Getting Started:

Click on the "Selguide" icon on your desktop. After a few seconds, Selguide should appear full-screen.

Searching Basics:

To start a search, click on the "Search" button on the menu bar in the upper left hand corner.

> NOTE: Please pay particular attention to the entry specifications - particularly the difference between "Typicals" and "Maximums". Be careful comparing front-page datasheet numbers to what is listed in the Selguide entries. Be aware that Datasheet front pages generally contain a mix of "Typicals" that look better than the actual limits contained in the datasheet specification tables or graphs.

You will then be presented with a window containing several tabs and entry boxes.

Select the type of device you wish to search for (Op Amp, Comparator or Buffer) with the pull-down box in the upper "Component Type" frame.

Click on the various tabs to select the various properties to include in your search.

Find Components

Component type to find: Operational Amplifiers   New Search

OpAmp Type | Properties | AC Parameters | DC Parameters

OpAmp Type
☑ Voltage Feedback   ☐ Rail to Rail Input
☑ Current Feedback   ☐ Rail to Rail Output
☑ Other

Number of parts found: 539   Show Results   Cancel
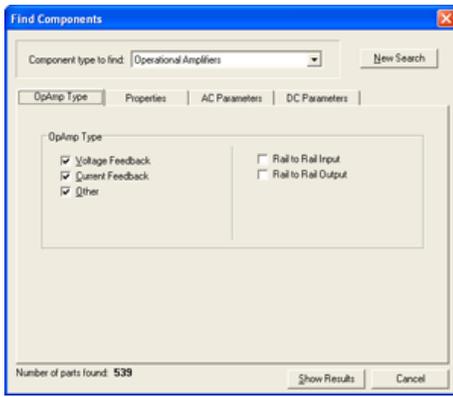
Important! Filling in a field or checking a box will narrow down the search to the property(s) you have selected under all the tabs.

Note that the "Items Found" number (in lower-left corner of search box) will change as you make your selections. Numeric fields will display the range of available values in the box just below the entry boxes. These are updated in *real-time* as you enter your parameters (which is why there is a "lag" after entering data). If "Items Found" changes to zero, try modifying your search range.

To remove unwanted entries in numeric fields, be sure to use the corresponding "clear" button instead of simply deleting the entry.

If you wish to recall your previous search results list, click on the bottom "Search Results" branch in the left-hand directory tree.

To start a new search, click the "New Search" button. This will reset all the fields to their defaults.

Selected Field Properties:

Most fields are fairly self-explanatory - but a few fields need some explanation:

Temperature Range:

In general, the temperature ranges are defined as follows:

Military: -55 to +125°C
Industrial -40 to +85°C (some variation, check datasheet)
Commercial 0 to +70°C
Automotive -40 to +125°C (some variation, check datasheet)

If you wish to eliminate the "expensive" military devices, just uncheck the Military box.

If you are looking for a "Commercial" range device, we recommend that you leave all boxes checked. Most of our devices are Industrial temp range and unchecking Industrial will completely eliminate them, even though they cover the Commercial temp range.

Supply Current:

This entry is PER AMPLIFIER!!! Singles, Duals and Quads will have almost identical entries. The actual "Dual" supply current per package will be approximately *twice* the listed number and the actual "Quad" package current will be almost four times the listed number.

If you are looking for a "Quad" device that consumes less than 1mA per package, then you should enter 0.25 in the Supply Current box.

Supply Voltage:

This is the expected supply voltages on Vcc (V+) and Vee (V-).

For example, a "Dual", or "Split", supply of +5V and -5V would be entered as:

V- -5 V
V+ +5 V

(Selguide will look for a device with a >= 10V supply rating)

A "Single" supply of +5V would be entered as:

V- 0 Volts
V+ +5 Volts

(Selguide will look for a device with a >= 5V supply rating)

Be sure to include negative sign!!

Input CMVR (Common Mode Voltage Range):

** The supply voltage field MUST be filled in first!!! **

Enter the expected minimum and maximum input voltages.

For example, with a "Dual" supply of +/-5V and an expected input signal of -1V to +3V:

Min -1 V
Max +3 V

For example, with a "Single" supply +5V and an expected input signal range of +0.1V to +4.2V:

Min +0.1 Volts
Max +4.2 Volts

In most cases, the input range entries will be within the range of the supply voltage entries. But it is possible to exceed the supply voltage range.

For example, with a "Single" supply +5V and an expected input signal range of -0.1V to +5.1V:

Min -0.1
Max +5.1

(This pretty much narrows the search down to only "Rail to Rail" input devices)

Output Range:

Similar to the Input CMVR entries above.

Except for a few open collector Comparators, the output entries cannot exceed the supply voltage entries.

NOTE: The database numbers are for "lightest" loads for their particular device family (Standard, Low Power, High Speed, etc). Loading the output will decrease overall output swing on any device. Be sure to check the datasheet output Sinking and Sourcing curves.

Viewing Results:

Once you are satisfied with your search entries, and the "Devices Found" number is not zero, click the "Show Results" button.

You will be presented with a split screen with two lower empty boxes. These "boxes" are where the device information will appear. Scroll through the list of found devices in the upper frame. Right-clicking on a part number will display it's properties in the lower-right window. Left-clicking on a part number will display it's properties in the lower-left window. These two windows allow you to quickly compare two devices side-by-side with a left or right click of the mouse.

In the properties boxes, there are links to allow you to access our web site for more information. You must have a live Internet connection and a Web browser installed on your machine to view the web pages Click the "View Product Information live from Web" to view the web page for the selected device. There you will find the datasheet, application notes, spice models, latest pricing, ordering and stock information, as well as as well as the ability to order samples on selected parts. Samples could be on your desk within a few days!

Tips:

* Make sure your search makes sense!
  * Are you looking for a quad device in a SC-70 or SOT-23 package?
  * Are you looking for a 100MHz amplifier with 10uA supply current?
  * Are you looking for Military temp range parts in plastic packages?
* Keep an eye on the "Parts Found" and "Minimum & Maximum" displays.
* Use the left and right display panes to compare devices. Right or Left clicking on the part number will send the data to the corresponding window.

Clarifications:

* "<=" means "Less than or equal to".
* ">=" means "Greater than or equal to".
* "nV/Sqrt(Hz)" means "Nanovolts per Square Root Hertz", the standard 1Hz BW normalized noise measurement (PSD).
* "Temp Max" means "The Maximum value over the specified operating temperature range".
* "Max" When referring to a temperature range (ie: Vos Max), means the Maximum value at 25'C.
* "tPHL" is propagation time for a high-to-low output transition. Same as "Prop Delay" in most cases.
* "tPLH" is propagation time for a low-to-high output transition.
* "Standard SOT pinout" refers to the more popular SOT pinout where pin 2 is V- and pin 5 is V+.
* "LMC7101 SOT pinout" is where the supply pins are reversed from the above (2 = V+, 5 = V-).
* "LMV321/331" SOT pinout is completely different - see the LMV321 datasheet for reference.

For technical questions regarding TI and National Semiconductor products:

* TI E2E™ Community (engineer-to-engineer online forums where you can ask questions to your fellow engineers and TI experts, as well as search for similar questions/answers)
* TI Product Information Center (TI's email/phone support hotline for your region of the world)

Amplifiers Product Selector Guide Software FAQs

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Frequently Asked Questions:

- I just downloaded the latest database update, and now some of the items under the "Properties" tab are not functioning correctly.
- I just downloaded the latest database and now some simple searches immediately return no results.
- Why isn't the desktop icon installed under Windows 2000? (or occasionally under NT4)
- Why do you guys use that *stupid* batch file to install instead of a package like Installshield?
- Why do I have to use the "Highly Recommended" installation path?
- Why does it take so long to start up?
- Why is there such a "lag" when checking a checkbox or entering a number in the search boxes? This is annoying!
- Can you make all the temperature ranges initially "checked" so that it is easier to eliminate the Military range?
- Why don't the numbers shown in Selguide match the Datasheet numbers? And/or the Parameters for the LMxxxx do not match the datasheet - they need to be corrected.
- Have you thought of automatically updating the database over the net?
- Can I fit Selguide on a floppy?
- What's the "View Product Information from CD" link for? I tried it with your Web/Databook CD and it did not work.
- May I place a copy of your software on our internal network for our users to download?

I just downloaded the latest database update, and now some of the items under the "Properties" tab are not functioning correctly.
-OR-
I just downloaded the latest database and now some simple searches immediately return no results.

There has been a major change in the database format between v110 and v120. V120 databases are not backwards compatible with v110. You probably have the old v110 software and downloaded the newer v120 database. Please download and install the latest version. V110 can be identified by the lack of a "Search by Part Number" button in the toolbar, or, by the revision number located in the Help->About menu.

Why isn't the desktop icon installed under Windows 2000? (or occasionally under NT4)

This problem should be resolved now. It had to do with the requirement for quotes around any pathname containing spaces in the installation batch file. This affected Win2K since the default user directory is called "Documents and Settings" (containing spaces) whereas NT4 used default directory names without spaces. The quotes have now been added to the batch file and the installation should now proceed normally under Win2K.

Please download the latest full program package and reinstall.

Why do you guys use that *stupid* batch file to install instead of a package like Installshield?

We have looked at some commercial installation products, but they tend to bloat the filesize to where it does not fit on a floppy anymore, or, violate our rule of not modifying the users system. Since Selguide does not need to check, modify or upgrade system files, these packages are generally overkill. The batch file is launched after all files have been extracted, and it's only purpose is to place an icon on the desktop. See the next question below for more details.

Why do I have to use the "Highly Recommended" installation path?

You do not have to use the recommended installation path. Selguide is perfectly happy in any directory you choose. However, the "stupid" installation DOS batch file, launched after the files are extracted, places a hard-coded "link" file (icon) on your desktop. The batch file will abort if the directory is anything but the "c:selguide" directory. This means you will have to create your own desktop link. This is a simple procedure and only needs to be done once. Just create a shortcut to sg.exe in your chosen directory. Just remember that future update files must be pointed to the new directory.

Why does it take so long to start up?

Upon first startup, and the first time you click "search", Selguide must pre-process it's database for use. This may take a few seconds on slower machines.

Why is there such a "lag" when checking a checkbox or entering a number in the search boxes? This is annoying!

This is because a complex query is generated each time you enter a number or check a box to update the "Minimum/Maximum Range" and "Items Found" count. It is annoying, but it is the price we pay for the immediate feedback of your selections. At this time, the only solution is to use a faster computer.

Can you make all the temperature ranges initially "checked" so that it is easier to eliminate the Military range?

If you are asking this, you probably have the older v110 software. Download the latest version in which all temperature ranges are checked by default.

Why don't the numbers shown in Selguide match the Datasheet numbers? And/or the Parameters for the LMxxxx do not match the datasheet - they need to be corrected.

In order to compare "Apples" and "Oranges", some specification entries on certain devices had to be slightly modified so that they would show up in certain types of searches. These modifications may be, or may not be, in the devices favor. Double-check these numbers on the datasheet for your intended supply voltage.

Remember: The whole idea of this software is to give you a list of devices to look over and consider - not to repeat the datasheet numbers verbatim. Selguide is not an electronic databook, but a selection tool. It is still up to the designer to review the datasheet and determine if the device is right for your application.

Have you thought of automatically updating the database over the net?

Of course! "Live Updates" are planned for future versions.

Can I fit Selguide on a floppy?

You can fit the Selguide INSTALLATION package on a floppy - but the expanded Selguide directory is about 3MB and will not fit on a floppy. However, if you want portability, you can burn the expanded Selguide directory onto a CD-R and run it directly off the CD. However, you will not be able to update the database on the CD (unless you use a CD-RW).

What's the "View Product Information from CD" link for? I tried it with your Web/Databook CD and it did not work.

That CD link is for use on specially created CD's that contain an image of our web site. The Web files must be located in the root directory of the current drive and will not work with the CD in another location.

May I place a copy of your software on our internal network for our users to download?

We ask that you do not. Because of the time-sensitive nature of the data contained within this software, NSC requests that you DO NOT maintain local copies, or distribute copies via any web site (internal or external), BBS, Shareware site, CD-ROM or other software repositories without the written consent of the Selguide software coordinator.

Instead, we ask that you please provide a link to the Selguide Home page, which can be found at http://www.national.com/selguide, and let the users download it themselves.

However, if you are using a shared resource or "Thin Client" system, you may maintain one local server shared copy PROVIDED that you can guarantee that it will be updated weekly. A simple chron script can be implemented to download and expand the latest version. Tuesday evening is the best time for automatic updates.

The Selguide.exe file is a self-extracting PKZIP archive and can be "unzipped" using any PKZIP command line tool or shell. Please only download and expand the Selguide.exe file to a common directory. Only updating the database files would prevent any updates to the software from propagating to the users.

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For technical questions regarding TI and National Semiconductor products:

* TI E2E™ Community (engineer-to-engineer online forums where you can ask questions to your fellow engineers and TI experts, as well as search for similar questions/answers)
* TI Product Information Center (TI's email/phone support hotline for your region of the world)

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