

► Elektor's Component Database CD

By Ed Simon

When I was first contacted to review the Elektor Component ECD 4 database CD, I jumped at the chance (*Elektor* magazine is by itself quite a wonder, but is outside the scope of this review). I had just come through two weeks without my Internet connection. The usual drill for looking up component data these days is to Google it.

Among the problems with this approach is that the first sites to appear are usually subscription offers; the manufacturer sites often require two or three more searches to get to the actual datasheet, and, worst of all, sometimes my Internet service provider runs slowly. Another annoyance is that older or oddball parts are often not available, or the only data is in another language.

In the old days I had a bunch of data books to find much of what I wanted quickly, and then I could actually leave the book(s) open to the printed page for further reference. Bits of paper could hold several places, making it possible to select a device or find comparable devices.

Those are the two major reasons for looking up data—designing new projects with the optimum device or finding a replacement to fix a piece of gear. During the first age of vacuum tubes, a popular service guide was the *Tube Substitution Handbook*. No techie was without one. The typical book was the size of your pocket protector. Need a 12AX7 but don't have one? The book would list a dozen possible choices to replace it.

I still have a few germanium transistors—mostly CK722s, the first transistor for the price of a tube! The 2N107 and 2N170 were the first transistors I actually used for projects. The 2N404 was the most popular germanium transistor. I consider these collector items and would not use them for service work. The NTE102 is the transistor I would use for replacement purposes for the CK722, 2N107, or 2N404. The 2N170 was an RF transistor; today's replacement might be an NTE100.

I could find the 2N404 replacement just by using a vendor's website. The rest were not there. As you probably know, looking up the data is hit and miss. If someone has posted it to a website then that's great, but otherwise the manufacturer may be long gone. Even worse is when there are just a few code numbers and no actual part number.

If you are lucky enough to have a good semiconductor replacement guide, then you can find a replacement. Even though these guides have grown to the size of a small phonebook, they never seem to have a device or two that you need. Worse, many only show you which replacement device to use. Unlike the vacuum tube guide, they do not let you know which transistors you already own will work in the circuit.

A DISC OF DATA

Enter the Elektor CD database, a collection of the basic parameters of more

than 68,000 devices. Not just germanium transistors and silicon transistors, but also germanium, silicon and even selenium diodes, FETs, triacs, SCRs, optocouplers, and integrated circuits.

It contains programs to let you decode inductor and resistor color codes. There are also some basic programs to calculate voltage dividers using either two or three resistors, calculate dropping resistors for either LEDs or zener diodes, along with a few other very simple programs. The standout program among the rest allows you to size power supply capacitors, sort of. It assumes a 230V 50Hz AC line, so be sure to double the fuse ratings. You may also wish to reduce the ripple a tad by increasing the filter capacitor value for audio use.

The data on the 68,000 devices is a bit limited to basic parameters such as NPN/PNP, CE voltage, current, beta, case, and pinout for transistors. For integrated circuits it shows the device type, equivalent, and pinout. This is perfect for service or quick experimentation, but not quite enough for tweeky designs. If you are into state-of-the-art designs, then you probably will need a full datasheet or to evaluate the devices under consideration yourself.

The program also allows you to inventory what you have in stock. My experience is that an hour spent entering the information will pay off in the long term, both in reduced search time and money saved by not buying what you already

own.

This is made even better because, unlike the replacement guides, which give you only one proprietary substitution, this CD shows you many possible replacements. You can enter new device data, assuming you can find something that is not already in there. The amount of work that went into compiling the data is impressive.

The database is naturally heavy with European part numbers, as well as Japanese and JEDEC devices. It has the 2N107, 2N170, and 2N404, but not the CK722, so it is not yet complete.

One other feature it does not seem to have yet is the phone for updates. Some of my better programs not only download updates, but with my permission let home know what I have found lacking.

I installed the disk on my Dell Dimension 3000 running XP professional seamlessly.

Specs for running the CD:

WIN95 and higher

Pentium 2, 133MHz or higher

32MB of on-board RAM

Internet Explorer 4 or higher

CD-ROM drive

25MB free space on hard disk

If you are doing any repair or restoration, then you already know that you never can have enough references. The cost is much less than one replacement transistor sent overnight mail. The next time you can't complete a project or fix a gizmo, you won't want to be without this disc. *ax*