Free CAD Parts for all Popular PCB Layout Tools

Ultra Librarian offers free download of CAD data for over 16 million electronic components. Users only need to register and can download the data for all popular PCB layout systems. Ultra Librarian is the world's largest free component library.

Free for Developers

When electronic developers design a circuit, new components are often sought and integrated into the new circuit. When selecting which component to use, criteria beyond electrical properties must be considered. Besides price and availability, the effort to create a new component in the PCB tool also plays a role. Ultra Librarian now offers direct access to the required CAD models.

After a one-time registration, CAD data of more than 16 million components are available to the developer on ultralibrarian.com for free download for all common CAD tools. After entering, for example, "LM317" for an adjustable linear voltage regulator, a selection of hits appears. This component is available from different manufacturers and in different designs. By refining the search, e.g. "LM317 TO220" or "LM317-T", the list of results can be quickly reduced.

Information about general availability and price is displayed in the search result overview. Here Ultra Librarian accesses the current data of the different component distributors in the background. For even more information, there are corresponding links to the distributors. Compliance icons show the level of certification of the components according to "lead free" and "RoHS".

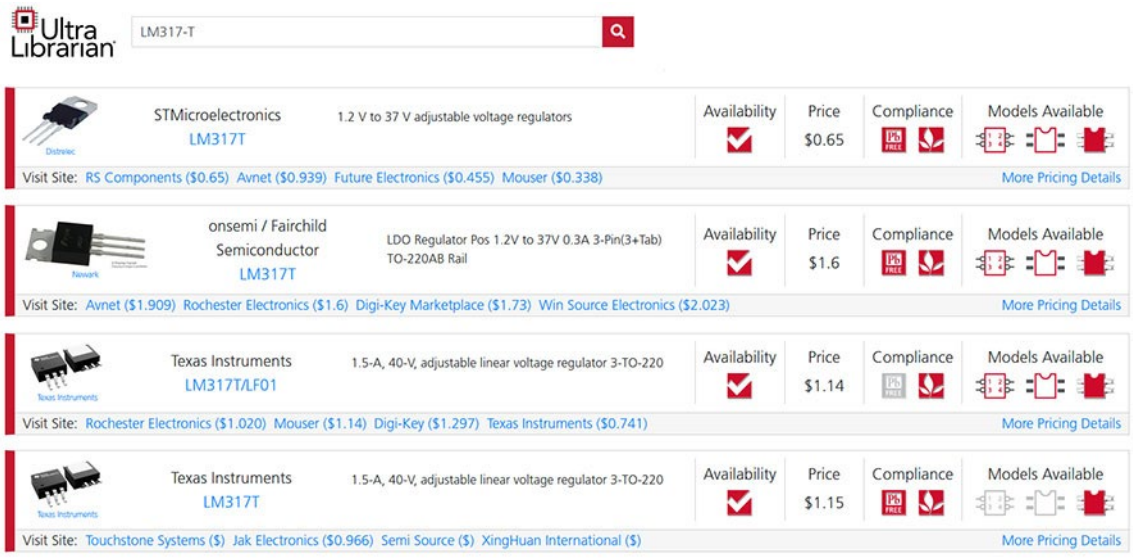

Figure 1: Search result using example "LM317-T" shows all available components and their parameters (list in the figure is not complete)

After selecting part, the user can click on "Models Available", select the desired CAD format and then download the CAD data.

Schematic symbols have been consistently developed according to the internationally valid ANSI standard Y32.2-1975 (reaffirmed 1989) and have been created with a uniform color scheme. Footprints (PCB pads) are set up according to IPC-7351B standard, which is supported by all PCB manufacturers, assemblers or EMS.

Data is offered directly in the respective CAD format without further conversion. Currently 24 formats of the different suppliers are supported.

It is even possible to specify whether the components should be dimensioned based on the imperial measurement unit inch or in millimeters.

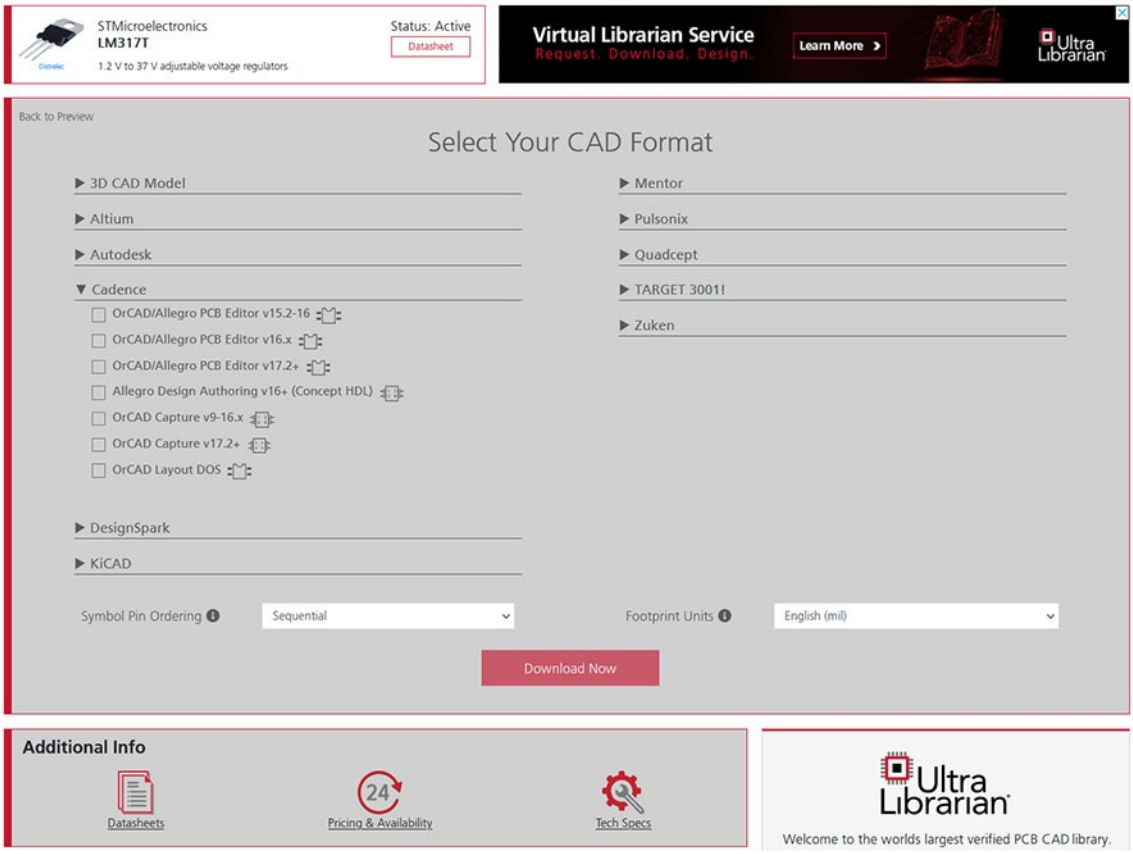

Figure 2: Selection of CAD data format before the download

A corresponding 3D STEP model is offered for more than 80 % of the components. These 3D models are optimized for use in PCB tools and can be used for 3D visualization of the PCB. Some PCB tools can also perform a collision check of the components with each other using these 3D models.

Number of downloads per user is limited to 50 components per day, which has not been a real limit for any developer so far.

If a component is not available in the online library, developers can send a request. These requests end up in a request pool, are processed without obligation and added to the library.

A Well-Maintained Company Library

In companies with several developers and PCB designers, there is usually a central library for components. Over time, different components and symbols are created by different people. This leads to personal interpretations and drawing styles.

Ultra Librarian offers PCB library revision and unification as a service for companies for a fee. Experienced librarians can apply the valid standards or company-internal rules for creation of schematic symbols and PCB footprints. Afterwards, all components are set up according to valid standards and the same color scheme. A uniformly verified library provides companies with greater confidence when designing PCBs.

OrCAD Capture users also have access to component information integrated directly into the schematic software with OMNYA Integration Platform developed by FlowCAD.

Service for Component Manufacturers

CAD data for PCB design can be created based on data sheets and supplementary information. All geometries and parameters are entered in an environment developed by Ultra Librarian itself. Subsequently, symbols, footprints and 3D step models can be output for all popular PCB design tools.

This service is chargeable for manufacturers. CAD data of new components is immediately available to the worldwide design community and components can be quickly and easily integrated into new designs (Design In).

Component manufacturers can also offer the CAD data for download on their own website. This service is furthermore used for special parts that have been custom designed and are only available to certain users or under non-disclosure agreement (NDA) behind a login for selected users.

Reference Designs

New in Ultra Librarian is the offer of reference designs. Here small circuit modules are offered, which include not only a device, but a complete function group with peripheral circuitry (e.g. AC/DC converter). Reference designs are of course available complete with symbols, footprints, 3D models and the bill of materials (BOM) in the various CAD formats. Circuit parts can be easily imported and used in most PCB tools as a hierarchical block with the netlist.

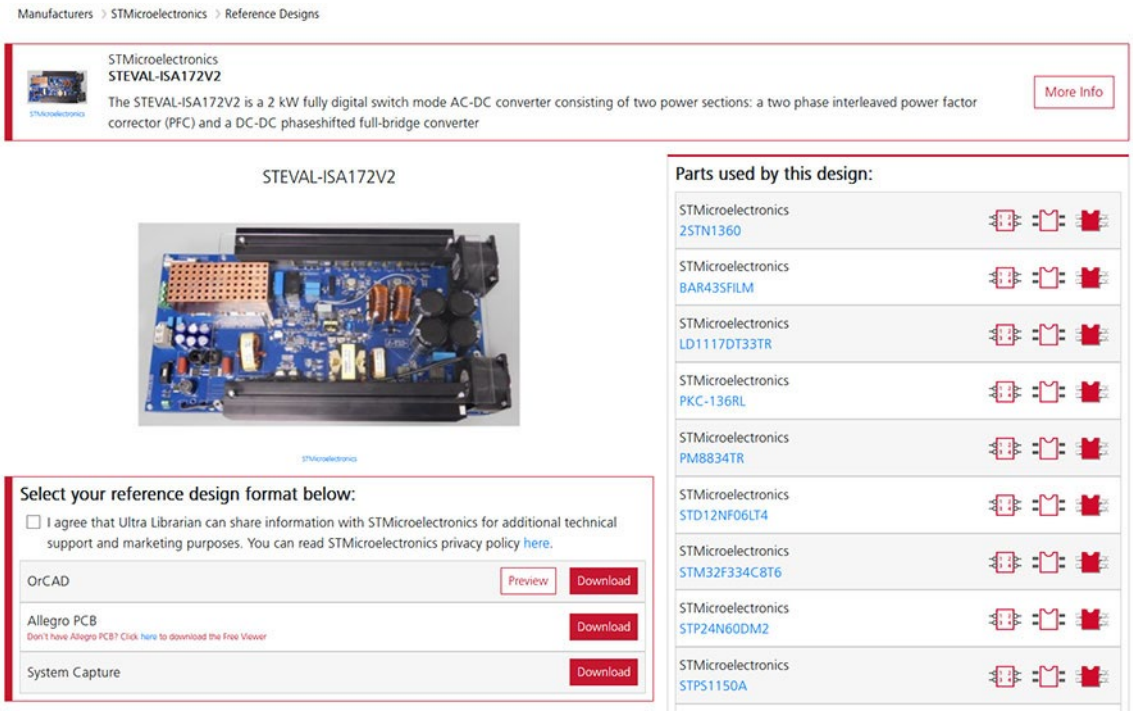

Figure 3: Example of a reference design from ST Microelectronics with parts list and models

Conclusion

Availability of CAD data is playing an increasingly important role in component selection. With the world's largest online library of CAD data for PCB development software, Ultra Librarian provides the global design community with access to new components and enables rapid design in.

More Information

www.FlowCAD.com