

## A Basic Guide to Part Substitutions

More often than not, Mouser does not have all the parts in stock. If you don't feel like waiting, you may opt to search their catalog for an in-stock part substitute. Luckily, there are alternatives to almost every part on the list. Here is a quick guide to give you a fighting chance vs. the massive Mouser catalog.

The best place to start is by clicking on the backordered part and visiting the product page. At the bottom you will find link labeled "Show Similar".

### Packaging

Mouser carries components in many different "packaging" options (Bulk, Reel, Ammo Pack and others). This is not the same as a "Package/Case" such as TO-92 or TO-220. Do not substitute the package/case type. "Packaging" is simply the method that components are stored and delivered. When you are ordering a few pieces it's of no concern. If they are out of a part in "bulk" packaging but have it in "reel/cut-tape" you can simply substitute that part.

### Capacitors

Start with checking the "Show Similar" option. Look for the same capacitor in slightly higher voltages. You can always use a higher voltage capacitor but never a lower voltage. If the BOM calls for a 50V 100uF electrolytic capacitor, look for a 63V or 100V version of the same part. As the voltage increases, so does the physical size of the capacitor. The capacitor product page will show you the physical size measurements. A slight increase is usually not a problem, but something like a 500V capacitor will probably not fit your PCB (see "lead spacing" below).

Another specification you will see on the product page is "lead spacing". The MNATS boards use radial leads meaning the leads are on one end of the capacitor (do not substitute for an axial). The lead spacing is the distance between these leads and should reasonably match the PCB pad spacing for the part. If the lead spacing on the original part is 5mm and you find an alternate that is 7mm, this should not be a problem.

### Resistors

Substituting resistors is pretty simple. There are many manufacturers and options available.

Most of the resistors used are 1/4 watt resistors. If the 1/4 W version is backordered, try the 1/2W part. You can always use a larger wattage, but the size will increase. Anything beyond 1/2W can get difficult to fit on the board.

Example:

10K 1% 1/4W part: **271-10k-RC**

10K 1% 1/2W part: **273-10K-RC**

The original FET compressor used 10% tolerance resistors. The ones on the BOM are 1%. If the 1% resistor is out of stock, check to see if a 2% or 5% version is available. Alternatively, simply use another resistor value within the original tolerance. A 22K resistor with the original 10% tolerance would mean it could have a measured resistance between 19.8K to 24.2K. In this case check to see if the 20K or 24K 1% tolerance resistor is in stock.

Lastly, try other sources like Digikey or a local electronics shop for the out of stock part.

Have a substitution tip? Send it to us at [info@hairballaudio.com](mailto:info@hairballaudio.com) and we'll add it to the list!

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