For additional information, please visit the Bybee web site at www.BybeeLabs.com

Addresses issues associated with high-voltage apps.

For all installations above 30V high-voltage adaptors must be used. We have now recommend a second 24V, 1W protection zener in the Hi-V adaptation (see Fig. 6 of Technical Data). This diode should be placed from the input of the Music Rail to J1. This is in addition to the diode connected from the input to J12.*

Whether high-voltage, or any other power supply, the best place to locate the Music Rail is at the tail-end of the supply. The Music Rail is designed to interface directly with the audio circuit. In this configuration, the Music Rail is best placed to filter input noise on one side, and to bypass circuit signals on the other side.

The same is true for a switching supply. Just be sure that if you remove filtering components in the raw supply you do not exceed the input ripple limit of the Music Rail (300mV for the 2A Rail and 1.8V for the 15A Rail). This limitation includes any sudden shift in DC status that exceeds the input ripple limit. When this input limit is exceeded, no damage will occur, just intermittent operation, which means that the Music Rail will stop filtering until the peak input subsides. This ripple limit is why we don't normally recommend using the Music Rail to feed output or driver stages in tube amps unless certain precautions are taken.

In practice, this problem can be eliminated by using a long time constant ahead of the Music Rail. In other words, if you observe the Music Rail output jumping around on the scope, slow down the input (i.e., add more RC on the input side, or use regulation). For example, at a voltage of 300V in an unregulated supply you might need to use 6.8K combined with 100uF shunt capacitance ahead of the Music Rail. Of course, if a regulator is present, no time constant is needed, since the regulator will provide a steady input voltage well below the ripple limit of the Music Rail.

This need for a long time constant in high-voltage applications is why it is usually more convenient to use the Music Rails on the input stages and filament supplies of tube equipment. In filament supplies, there is no need for a long time constant ahead of the Music Rail. Only in hi-V apps is this required. That is because high-voltage transformers step up AC line transients, making them larger. Also note that the 15A Music Rail has more input ripple headroom than the 2A Rail. This can be useful in supplies where long time constants are not possible. You may also find the 15A Rail more useful in low-voltage, unregulated supplies for this same reason. Just bear in mind that the 15A Rail has a 2.1V dropout, so you will need to make this up at the input.

*** For positive voltage the diode bands face the input of the Music Rail. For negative voltage, the bands must be reversed.**

If you need additional help, please e-mail techsupport@bybeelabs.com

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MUSIC RAILS are manufactured in the United States.

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