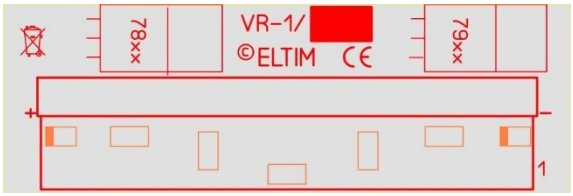
updated September 8th, 2020

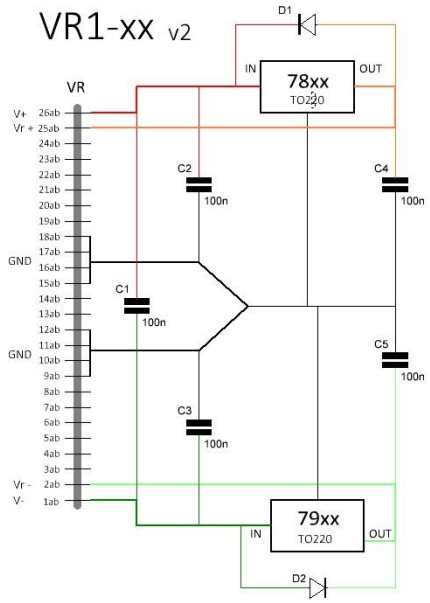
VR1-xx Symmetrical Voltage Regulator module

In many applications, like our preamplifier designs, regulated supply voltages improve the overall sound quality. This regulator module fits on all our preamplifier modules without modifications.

With this module we provide regulated voltages as about 90% of all audio supplies are regulated; by plain and simple 78xx / 79xx series fixed voltage regulator IC's.
They are not the best available regarding stability and dynamic response, but cheap and work fine in HiFi applications, as long as some precautions are taken as we did, f.e. clamping diodes / capacitors.

- Highlights of this VR1-xx Voltage Regulator module:
  - Output voltages set by type of regulators used.
  - RF-interference blocking capacitors in strategic positions.
  - L-mounted to our PS/PRE-boards.
  - Dimensions: 75x25x8mm.





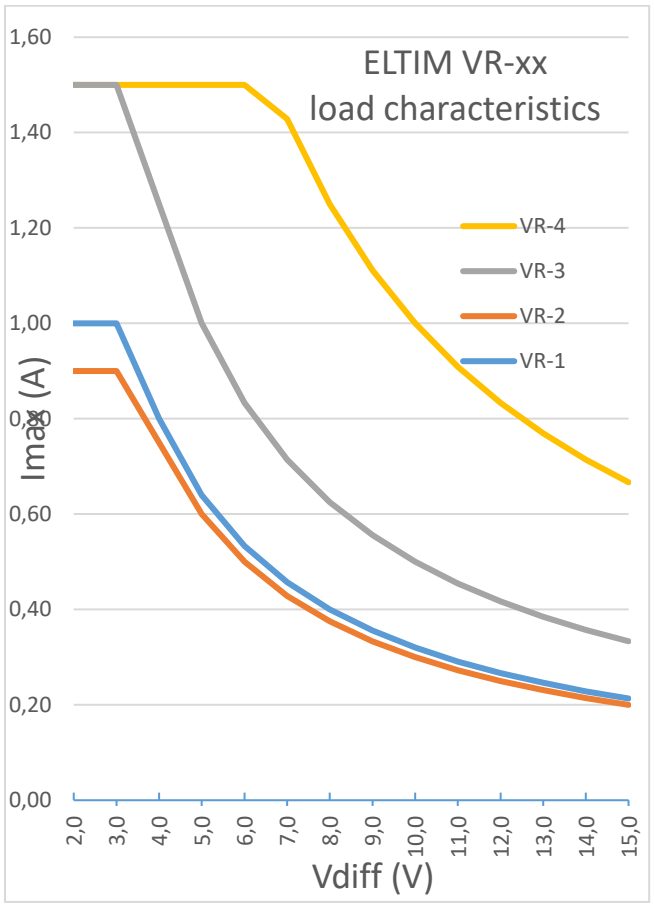
In this VR1-module voltage regulation is done by the well-known 3-legged, TO220 types of 78xx and 79xx IC's.
The output voltages are defined by the type of IC's mounted.
We supply ±5V, ±8V, ±9V, ±10V; ±12V, ±15V, ±18V, ±24V
±24V type (*Vin max = 40V*) is just enough to feed our VS-xx modules, lower voltages won't work properly!

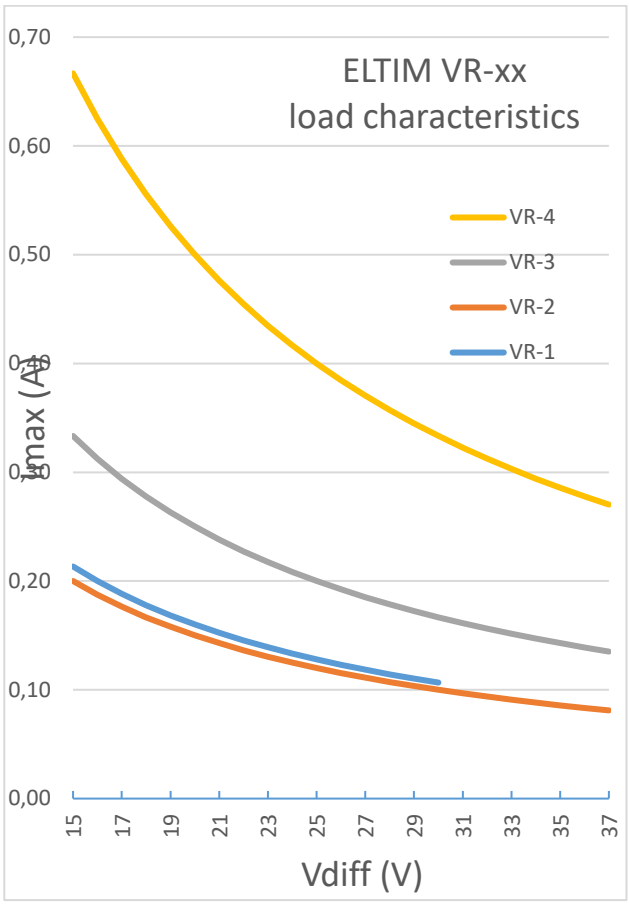
As always, strategic RF-decoupling over the power lines is included. Five SMD capacitors decouple all voltage rails to ground AND between the input voltage rails. This improves stability and reduces noise.
All SMD components are at the back of the PCB, behind the header connector, positioned most strategic, meaning the shortest possible leads to fight RF- interference. We don't see this anywhere else.
However, due to these measures our designs are free of EMI- and RF-interfering and noise.
The clamping diodes allow the load of inductive parts like relays, without damaging the IC's.

Output voltage setting

The max. input voltage of 78xx / 79xx series is 35Vdc, except for 24V type, being 40V.
If the over-temperature circuit isn't in action the max current possible is 1,0A. Due to this, the differential voltage over the IC's strongly influences the max. output current. The dissipated power is calculated aprox. as: **Pdiss = (Uin – Uout) * Iout.** With this module Pmax is around 2x 3W, see the graphs at next page.
We designed it in a way that it will fit vertical in a 1U (40mm) high casing. Since there is no space for a cooling device then, the temperature limiter will come in action if too much current is taken. It will be way enough though to feed preamplifier, DAC, DSP, etc. circuits.

ELTIM VR-1 specifications





Typical data for ELTIM VRx-yy modules, positive side. Negative values are the same.
Data is long term measured where the Tmax. protection is just not in action.

Vdiff. definition:	Difference between input- and regulated output voltage.
Vdiff. minimal:	2,0V
Vin maximal:	5 – 18V types: 35V, 24V type: 40V
Available standard voltages:	5V; 6V; 8V; 9V; 10V; 12V; 15V; 18V; 24V
Imax:	Depending on Vdiff., see tables (24V type: Vdiff max =16V)
Type of regulator IC's:	78xx / 79xx TO220 types, flat mounted to PCB Can be mounted vertical and add some small heatsinks, increasing Imax.
Protection:	Tmax (125ºC), SOA and shortcut protections
Size:	75 x 25 x 8 mm

Check our website for ordering

OEM and dealers are most welcome.