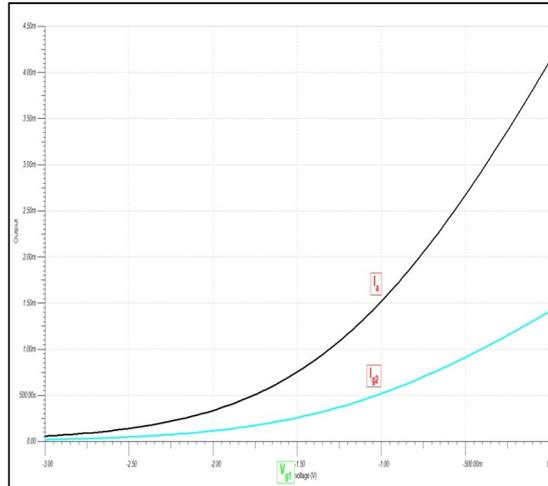
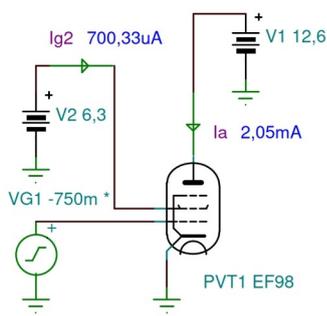


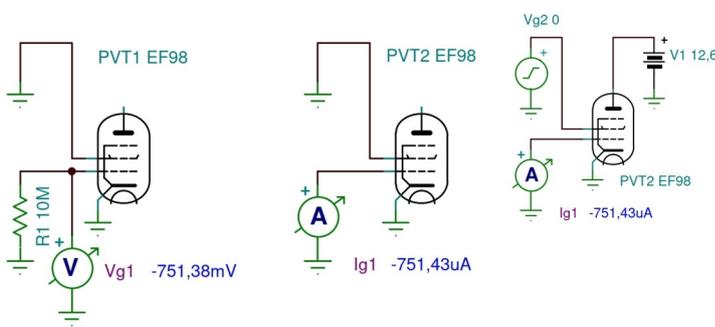
## EF98 Low-Voltage RF Pentode Macro Model

The EF98 is designed to have operating directly at vehicle battery potential (6 or 12 V).

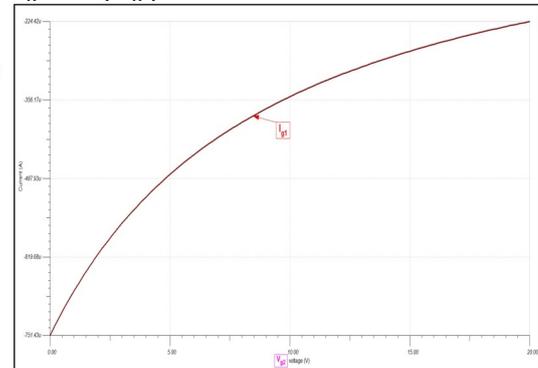
### DC Characteristics



### Gate Diode Splash Current

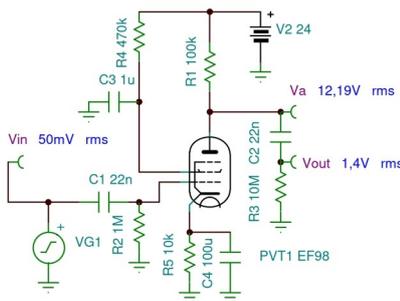


$$I_{g1} = f(V_{g2})$$

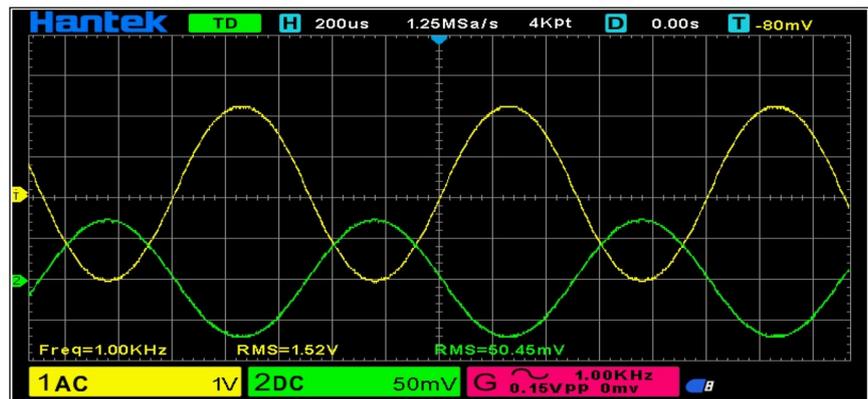


The gate current is not zero when the gate voltage is zero. A small gate current flows due to the energy distribution of the electrons emitted from the cathode.

### AF Voltage Amplifier



Model  $A_v = 28x$



$V_{out}$

$V_{in}$

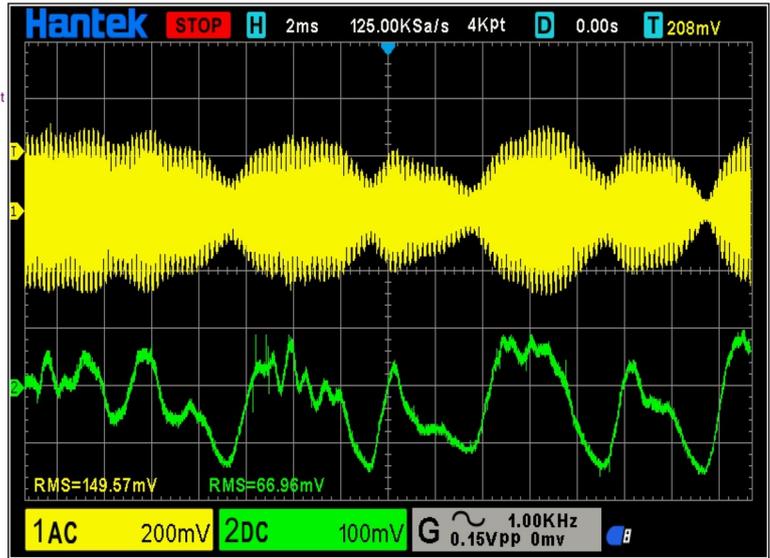
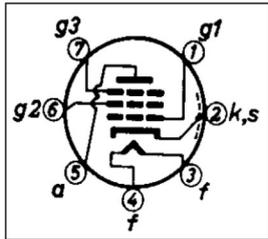
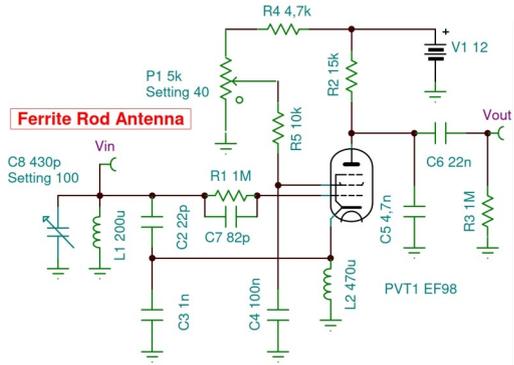
Real Tube  $A_v = 30x$

The model provides good accuracy for both DC operating points and AC gain.

### Audion Circuit for the Medium-Wave Band

An excellent Audion detector can be built using the EF98 low-voltage pentode. Shown here is a 12 V circuit, its corresponding simulation model, and oscilloscope measurements of the completed prototype. The use of **capacitive** feedback simplifies the design compared to the more common inductive coupling, which would otherwise require an additional coil.

# EF98 Audion Circuit



V<sub>in</sub>      V<sub>out</sub>

## Model

