

Q Amp (A250) Module: Test Procedure

Created: 3/25/98
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This document should be used along with the "Q Amp(A250) Module: Users Manual" document to test and/or troubleshoot the Q Amp(A250) module.

1) The board should be tested using the pre-assembled 96 pin VME test plug with the following labeled inputs/outputs:

Pin 15 a,b,c: +5 Digital

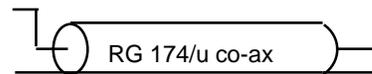
Pin 16 a,b,c: GND

Pin 19 a,b,c: +15 FEIN

Pin 22 a,b,c: -15 FEIN

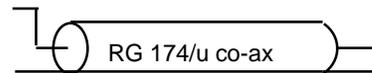
Pin 26 b: Drain

Pin 26 c: FEGND



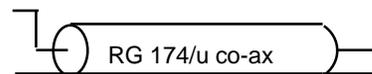
Pin 28 b: Feedback

Pin 28 c: FEGND



Pin 30 b: Source

Pin 30 c: FEGND



Pin 32 a,b,c: FEGND

2) First test the board without an A250 chip in the socket. This will prevent the very expensive A250 chip(\$450.00 each as of 3/25/98) from being destroyed by unwanted voltages.

3) Without the A250, the board should be drawing little current, about 30 mA on all the supplies. The socket of the A250 should have the following voltages at all the pins:

- Pin 1-4: 0 V
- Pin 5: -6 V
- Pin 6-9: 0 V
- Pin 10: +6 V
- Pin 11-14: 0 V

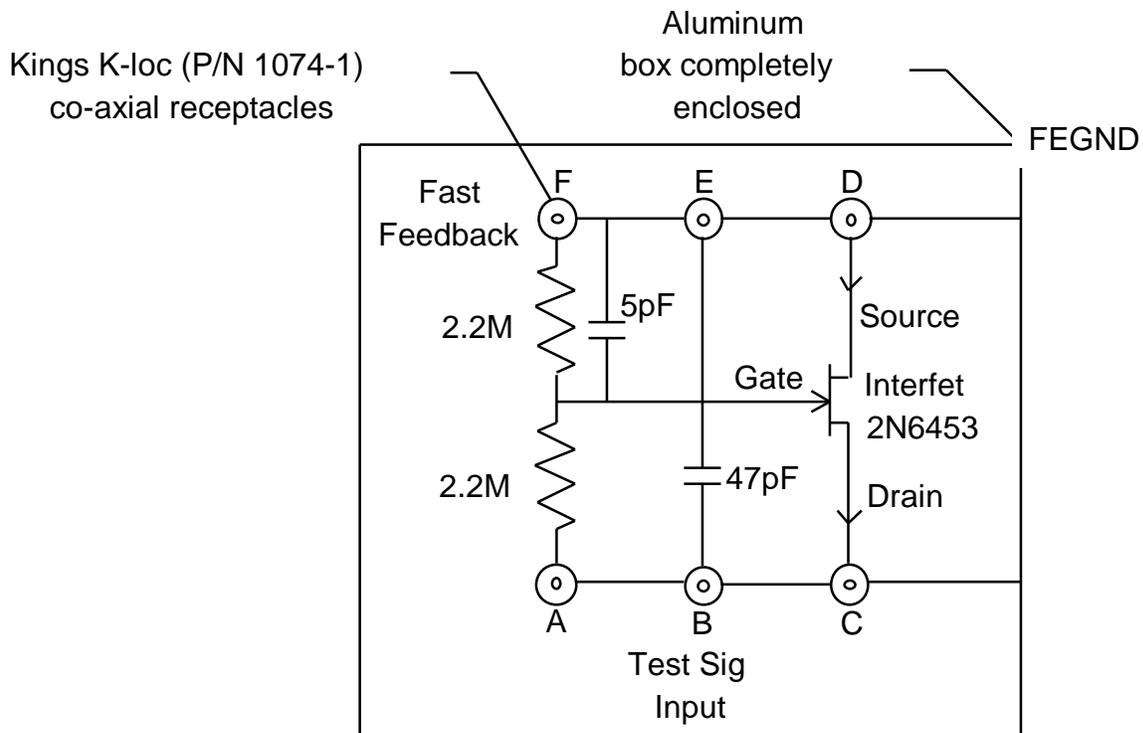
(Note: Where there is a "0", there may be a small voltage, but it should be less than about 100 mV).

4) If everything looks normal, power down, insert the A250 chip (noting pin 1 designator), and connect the "Drain", "Feedback", and "Source" to the "Warm FET Box" as described below:

5) Setting up the "Warm FET Box":

Note: All connections should be made with RG 174/u co-axial cables terminated with KINGS, K-Loc, straight plug connectors (P/N 1075-1), to prevent unwanted noise and distortions from adversely affecting the very sensitive A250 amplifier.

The internal schematic of the "Warm FET Box" looks like this:

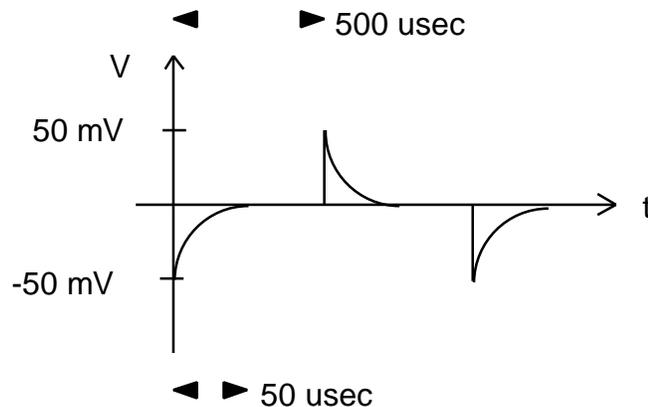


6) Plug a Lemo "T" connector in the "Test Sig Input". Terminate one branch of the "T" with 50 ohms. Connect the other branch to a function generator with a short (8 in.), 1 nsec RG 174/u co-axial cable Set the function generator up for a 1 kHz, 100 mV peak-to-peak square wave.

7) The output of the A250 chip (pin #8) should like this:

Note: This signal should start with a DC level of approximately -0.75 V upon power up, then slowly ramp up to a 0 DC level after several seconds.

Amptek, A250 pin #8:



8) The output of the AD797 (J1 pin #2b) should have a similar wave form, but it should peak at 100 mV, instead of 50 mV. Again, this signal should start at a DC level of approximately -2 V, then ramp up to 0 V in a few seconds.

9) If the outputs don't look like these, there is something wrong.