



APPLICATION NOTES

Application Note 23

FAST PULSING OF 684/5/6/7 SWEEP OSCILLATORS MANUFACTURED PRIOR TO MARCH 1960.

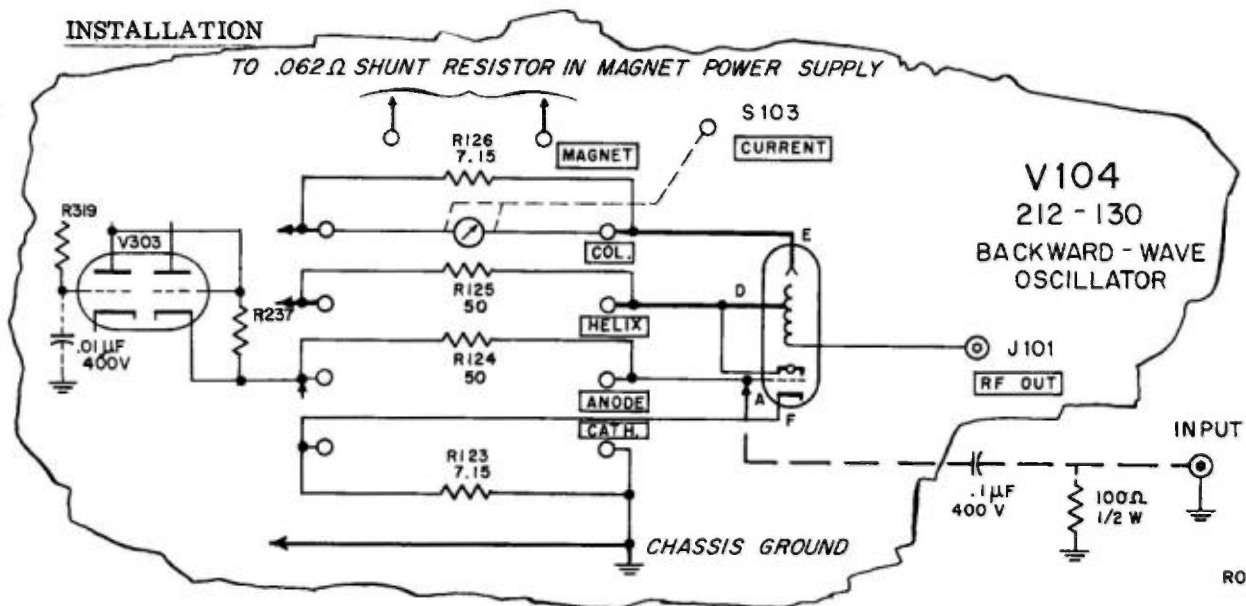
GENERAL

The pulsing characteristics of Sweep Oscillators with serial numbers as indicated in Table I can be improved by the simple addition of a resistor and a condenser. Specifically the oscillators can be pulsed by external pulses with faster rise times. This yields a faster output pulse and thus improves normal tests with the unit. More important, a narrower output pulse can be obtained with better rise time which makes the sweep oscillators more suitable for narrow pulse applications such as tests on high resolution radar systems and other fast microwave devices.

PERFORMANCE

EXTERNAL PULSE: Minimum rise time can be improved from $1\mu\text{sec}$ to $0.2\mu\text{sec} - 0.05\mu\text{sec}$. Actual rise time depends upon the electrical characteristics of the particular backward wave oscillator tube.

INSTALLATION



Parts:

1. Resistor - 100 ohms, 1/2 watt, 10%
2. Condenser - $.1\mu\text{f}$, 400 volts - couples pulse to anode.
3. BNC connector.
4. Condenser $.01\mu\text{f}$, 400 volts.

Location:

Where convenient in the anode supply - below the red high voltage shield.

OPERATION

1. Anode MOD: OFF.
2. Cathode Current: Reduce until tube stops oscillating at all frequencies within the swept band.
3. Apply external pulses.
4. Increase external pulse amplitude until pulsed rf is obtained. (Full rf power output will not necessarily result.)

W129

TABLE 1

MODEL	HIGHEST SERIAL NUMBER TO WHICH MODIFICATION IS APPLICABLE*
684A	All
684B	012-00140
685A	All
686A	012-00551
687A	All

* Later serial numbers use a different grid modulation circuit which provides performance equivalent to that of the circuit change described in this Application Note.

4/13/59
6/15/60