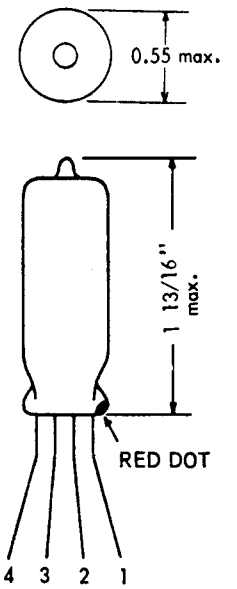
Excellence in Electronics

TYPE RK61

The RK61 is a small size 3-element thyratron useful in applications requiring extreme economy of space, weight, and battery drain. It is designed for use as a self-quenching super-regenerative detector which will operate a high resistance relay in the anode circuit upon reception of a radio signal. The flexible terminal leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard inline subminiature sockets may be used by cutting the leads to a suitable length.

Super-regenerative operation at frequencies above 100 megacycles is apt to be unstable and lower frequencies are recommended. Type RK61 is rated for amateur and intermittent service and is suggested for those applications in which circuit adjustments are available or in which variation of tube characteristics that will occur during life can be tolerated.



MECHANICAL DATA

ENVELOPE: T-4½ Glass

BASE: None (0.016" tinned flexible leads. Length: 1.5" min. Spacing: 0.048" center-to-center)

TERMINAL CONNECTIONS: *(Red dot is adjacent to Lead 1)*

Lead 1 Anode
Lead 2 Filament, negative
Lead 3 Grid
Lead 4 Filament, positive

MOUNTING POSITION: Any

ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCES: (*μμfds.*) (approx.) *

Grid to Anode	1.6
Grid to Filament	1.1
Filament to Anode	1.0

DESIGN CENTER MAXIMUM RATINGS:

Filament Voltage (dc)	1.4 volts
DC Anode Voltage	45 volts
DC Anode Current	1.5 ma.

CHARACTERISTICS AND TYPICAL OPERATION: (See Figure A)

Filament Voltage (dc)	1.4 volts
Filament Current	0.05 ampere
Average Tube Voltage Drop (At 1.5 ma)	30 volts
Anode Voltage	45 volts
Relay Resistance	5000 ohms
Anode Current (No Signal)	1.0 to 1.5 ma.
Anode Current (With Signal)	0.1 to 0.5 ma.

* *With no external shield.*

The tube must always be operated with sufficient series resistance in the anode circuit to limit the anode current to the maximum rated value. The useful life of the tube depends upon the anode current and may be prolonged by operating the tube with as low an anode current as possible.

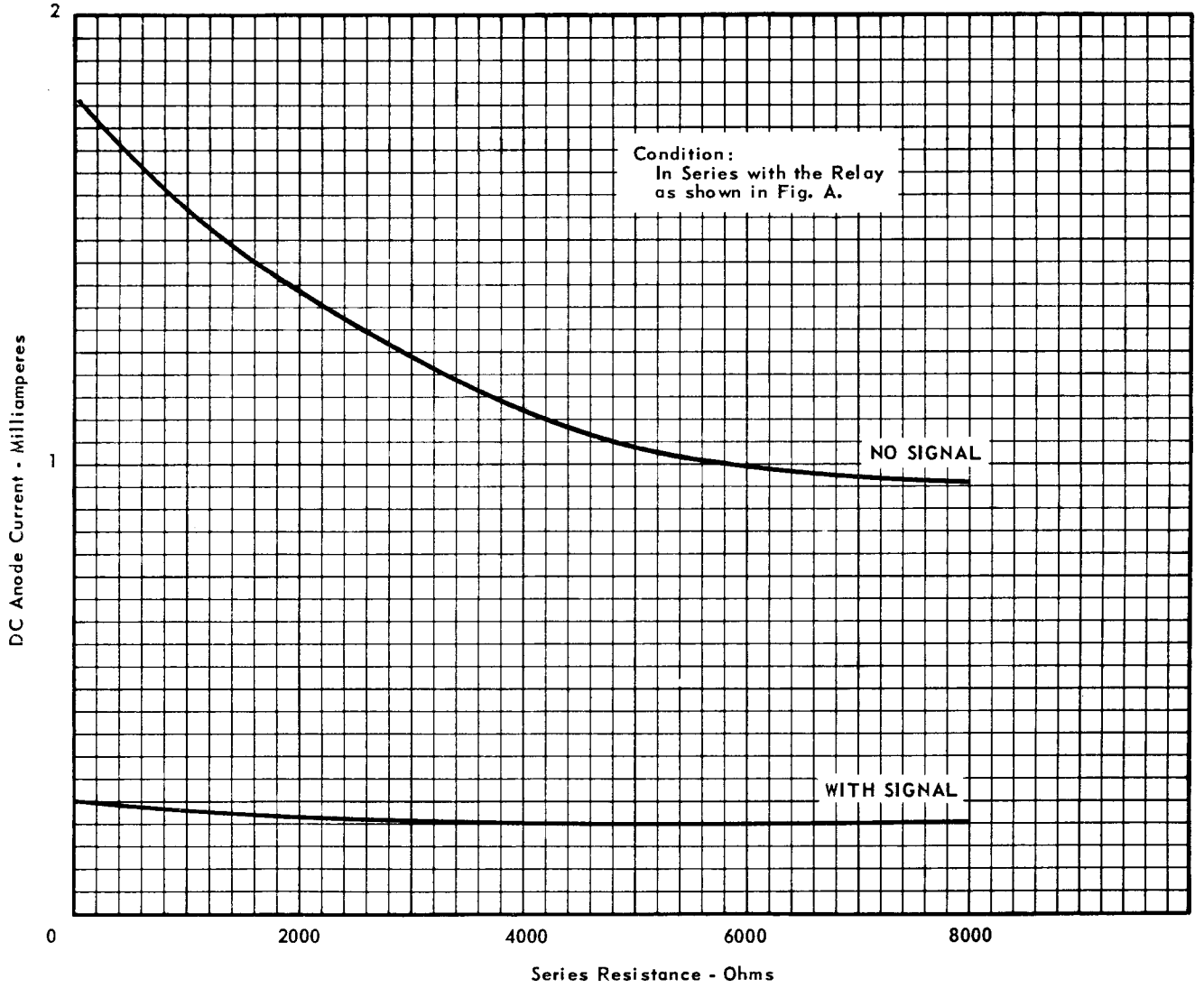
The circuit in Figure A is recommended for use with the RK61 for remote control purposes. If it is desired, the 45-volt anode supply battery can be removed, and the circuit adapted for use with a 60-cycle a-c anode supply. When operating properly, the tube should be oscillating at audio-frequency except during reception of a radio frequency signal whereupon the audio-frequency oscillation should disappear. The average anode current may be increased by increasing the antenna coupling, by decreasing the L/C ratio of the tank circuit, or both. The maximum controllable current may be increased by increasing the anode by-pass capacitance by decreasing the grid leak resistance or both.

Tentative Data

Printed in U.S.A.

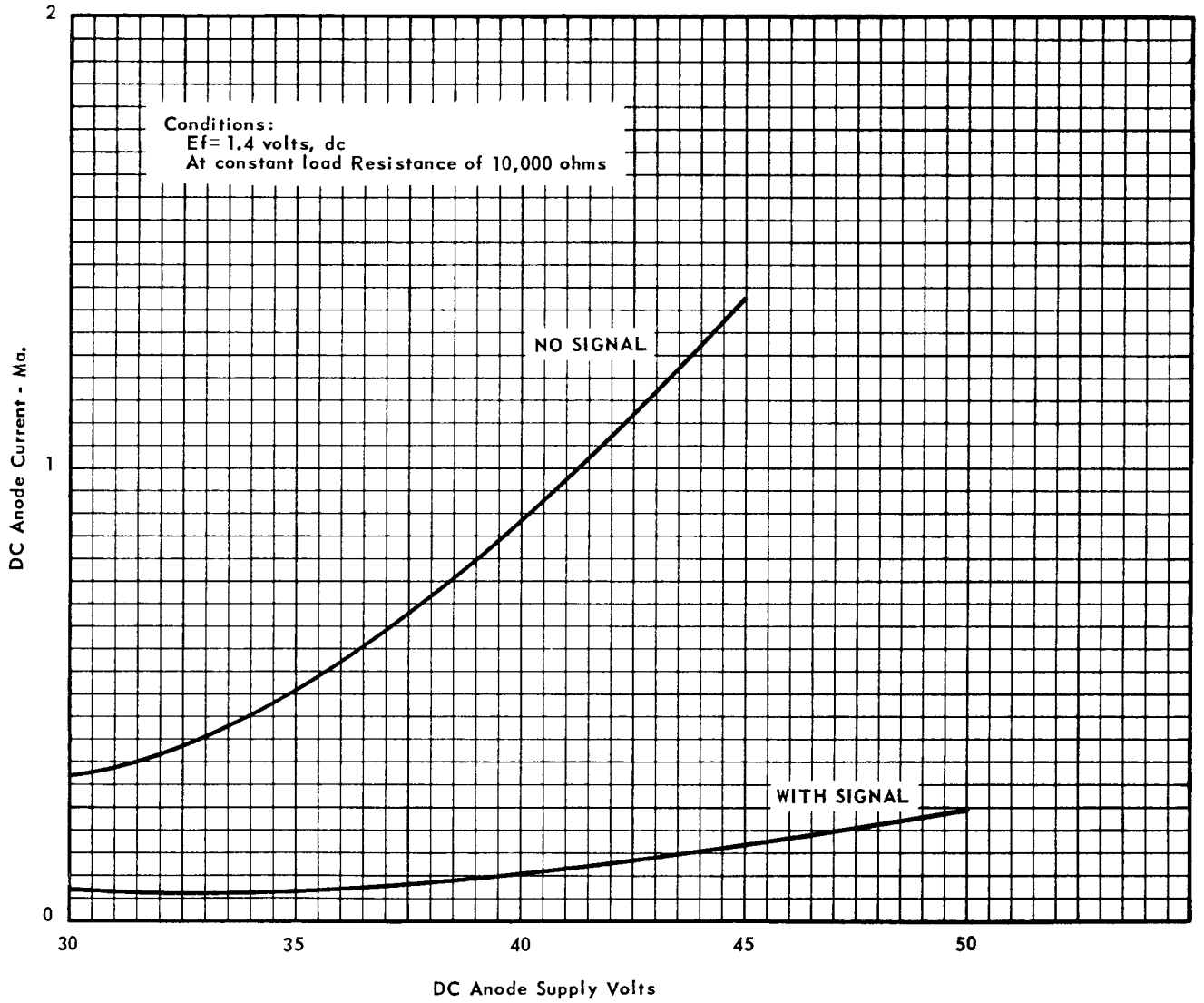
If the capacitance of the anode by-pass condenser is reduced and the relay replaced by a pair of phones, the circuit will operate as a conventional super-regenerative receiver with an anode supply voltage as low as 30 volts. Anode supply voltages higher than 30 volts require the use of a series resistor to limit the anode current to the maximum rated value.

VARIATION OF ANODE CURRENT
WITH RESISTANCE

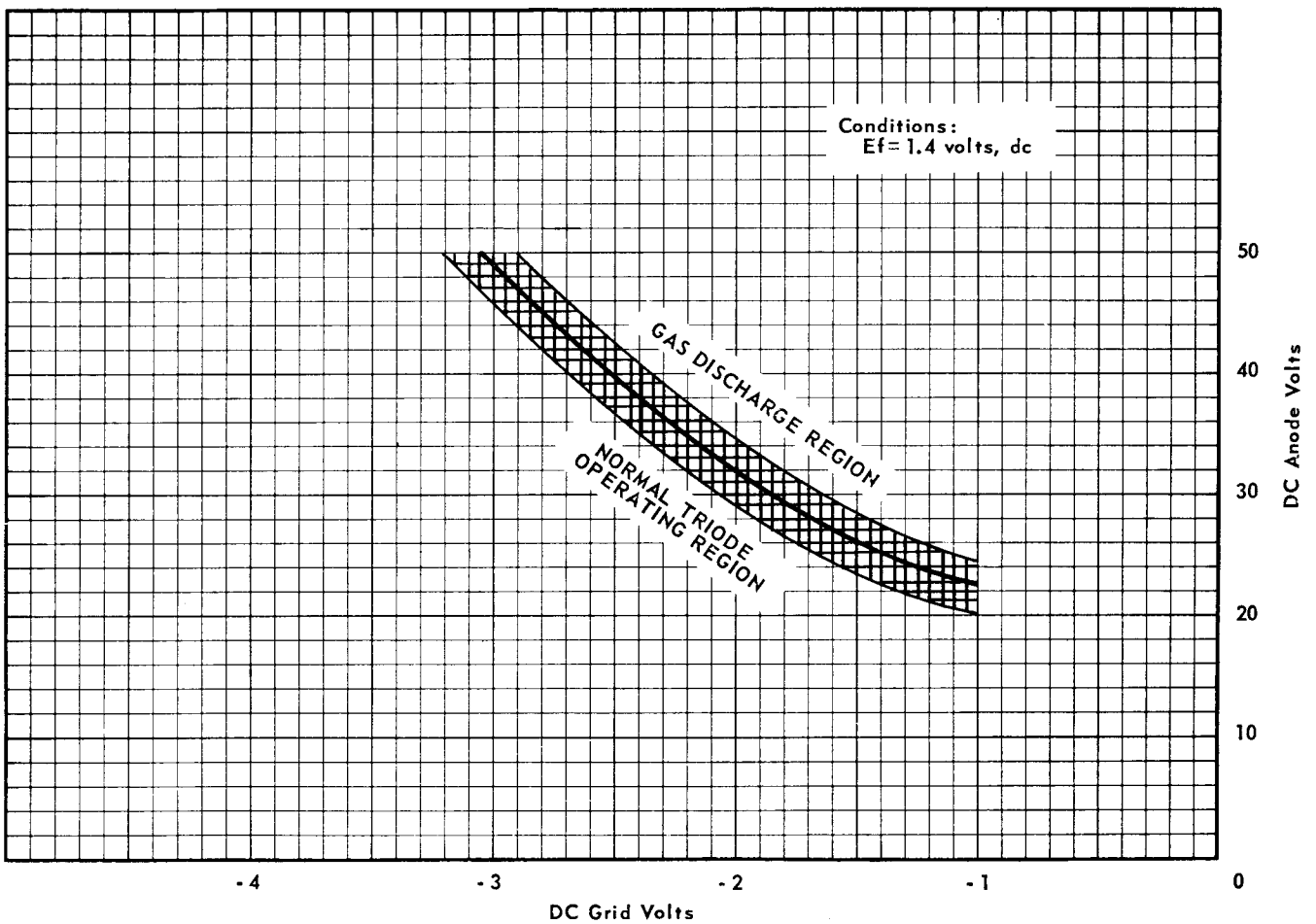


SUBMINIATURE GAS TRIODE

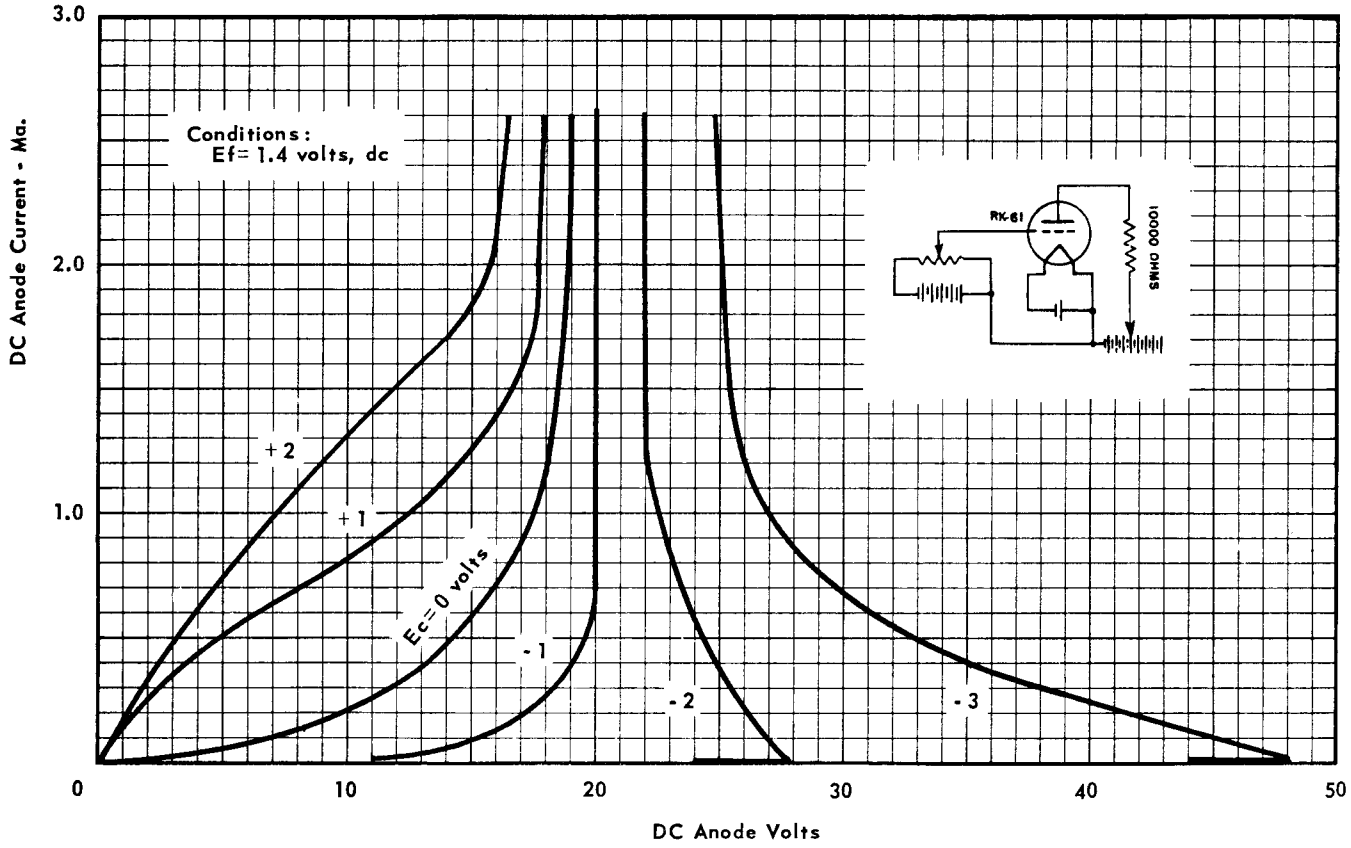
VARIATION OF ANODE CURRENT
WITH ANODE VOLTAGE SUPPLY

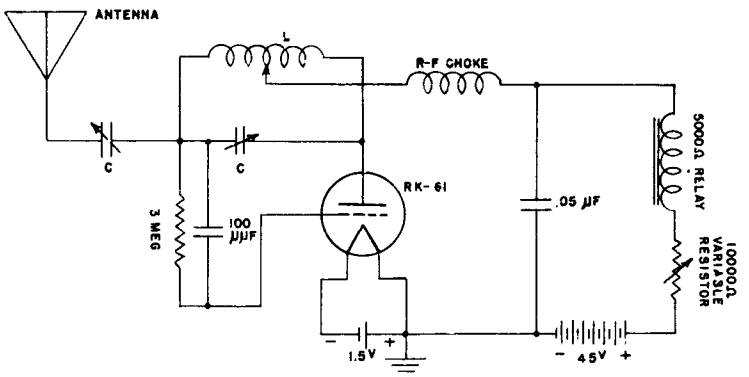


AVERAGE CONTROL CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS





Adjust L and C for Frequency Band Desired

Fig. A