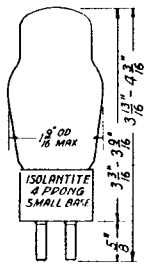
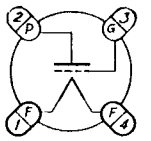



# TRIODE AMPLIFIER OSCILLATOR




The RK-24 is a triode type amplifier tube having a coated filament and an isolantite base. It is designed for use as an amplifier or oscillator in transceivers and portable equipment at ultra-high frequencies. It will supply more power output and give better life than the type 30 in these applications.

## FILAMENT RATING

| | | |
|---|---|---|
| Filament Voltage | 2.0 d-c | volts |
| Filament Current | 0.12 | amp |

## DIRECT INTERELECTRODE CAPACITANCES

| | | |
|---|---|---|
| Grid to Plate | 5.5 | μμf |
| Input | 3.5 | μμf |
| Output | 3.0 | μμf |

## A-F AMPLIFIER—CLASS A

### MAXIMUM RATINGS

| | | |
|---|---|---|
| D-C Plate Voltage | 180 | volts |
| Plate Dissipation | 1.5 | watts |

### TYPICAL OPERATION

| | | | | |
|---|---|---|---|---|
| D-C Plate Voltage | 90 | 135 | 180 | volts |
| D-C Grid Voltage | −4.5 | −9 | −13.5 | volts |
| D-C Plate Current | 4.5 | 6 | 8 | ma |
| Amplification Factor | 8 | 8 | 8 | |
| Plate Resistance | 5500 | 5300 | 5000 | ohms |
| Transconductance | 1450 | 1500 | 1600 | μmhos |
| Load Resistance | 5000 | 9000 | 12000 | ohms |
| Power Output | 25 | 110 | 250 | mw |

## R-F AMPLIFIER OR OSCILLATOR—CLASS C

### MAXIMUM RATINGS

| | | |
|---|---|---|
| D-C Plate Voltage | 180 | volts |
| D-C Plate Current | 20 | ma |
| D-C Grid Current | 6 | ma |
| Plate Dissipation | 1.5 | watts |

### TYPICAL OPERATION

| | | |
|---|---|---|
| D-C Plate Voltage | 180 | volts |
| D-C Grid Voltage | −45 | volts |
| D-C Plate Current | 16.5 | ma |
| D-C Grid Current | 6 | ma |
| Peak R-F Input Voltage | 92 | volts |
| R-F Driving Power | 0.5 | watts |
| Power Output | 2 | watts |

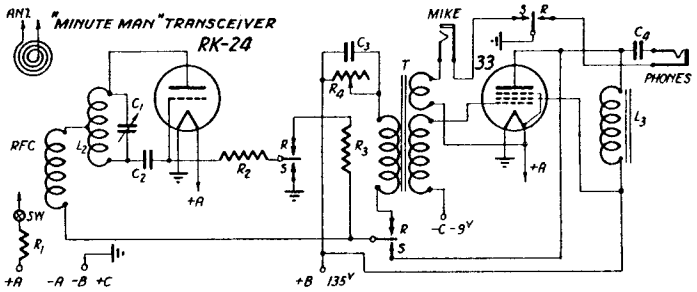
## OPERATING NOTES

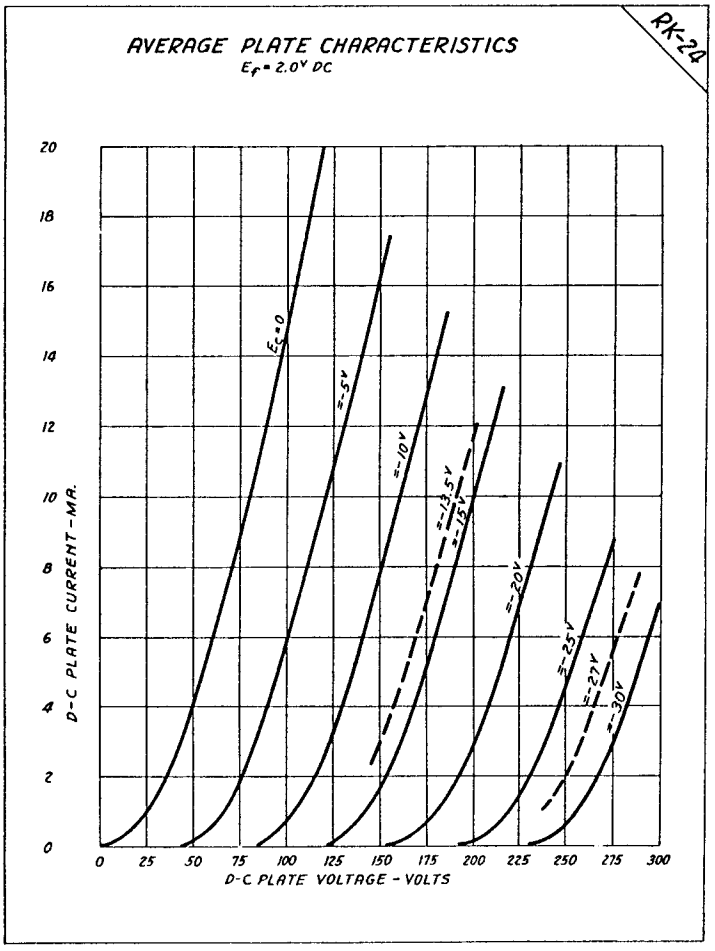
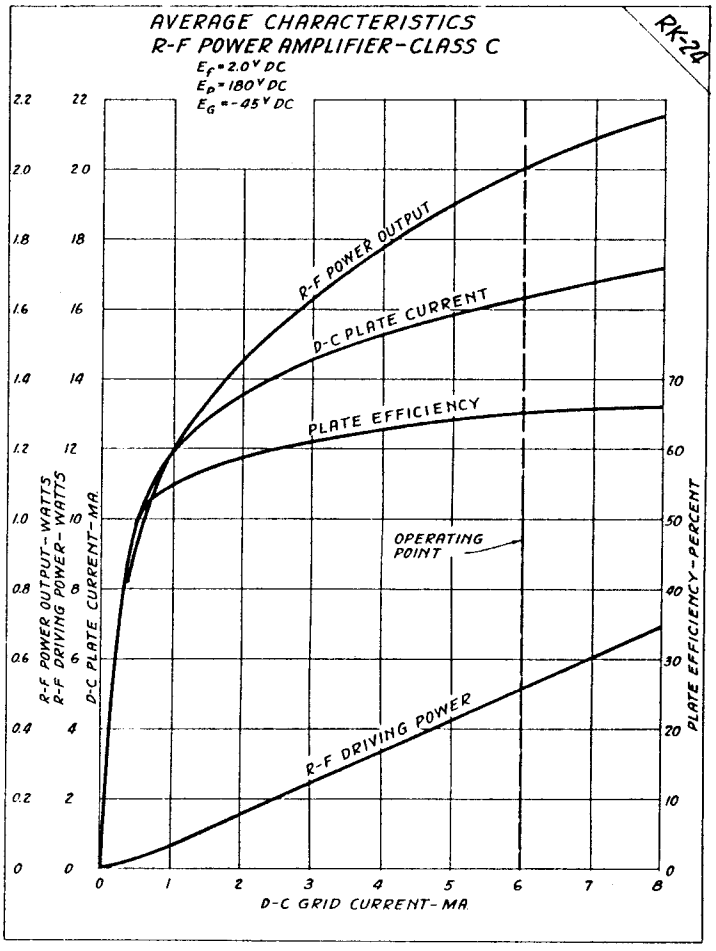
**FREQUENCY RANGE**
The RK-24 is particularly adapted for use in circuits operating at frequencies from 60 to 112 megacycles.

**FILAMENT VOLTAGE**
The filament voltage at the socket of the RK-24 should be maintained at 2 volts in order to insure long life.

**PLATE TEMPERATURE**
The plate of the RK-24 will not show color when operated at the maximum rated dissipation. Dissipations above the rated value should be avoided.

**TRANSCEIVER**
The circuit below is the "Minute Man" receiver converted for use as a transceiver as shown in A.R.R.L.'s QST-magazine for September 1936.




$C_1$ —Two-plate midget variable, low loss
$C_2$ —100 μμfd.
$C_3$ —0.25 μfd.
$C_4$ —0.1 μfd.
$L_2$ —10 turns No. 14, ½ inch inside diameter, spaced diameter of wire.
T —Transceiver Transformer.
RFC—45 turns No. 25 cotton-covered wire, inside diameter ¼ inch, close wound and self-supporting.
$R_1$ —3 ohms
$R_2$ —10,000 ohms
$R_3$ —5 megohms.
$R_4$ —50,000 ohms variable
$L_3$ —Four turns in flat spiral