PENTODE
POWER AMPLIFIER
OSCILLATOR

The RK-28 is a pentode type power amplifier tube having a threelayered tungsten filament, a molybdenum plate, a hard glass bulb, and an anisotropic base. It is designed for use as a power amplifier, oscillator, or frequency multiplier. The RK-28 may be used in circuits employing suppressor or control grid modulation.

FILAMENT RATING
Filament Voltage ........................................ 10 volts
Filament Current ........................................ 5 amp

DIRECT INTERELECTRODE CAPACITIES
Grid to Plate .............................................. 0.02 μF
Input ....................................................... 15 μF
Output ..................................................... 15 μF

R-F POWER AMP. OR OSC.-CLASS C

MAXIMUM RATINGS
D-C Plate Voltage - Telephone 2000 volts
D-C Plate Voltage - Telegraphy 2000 volts
D-C Con. Grid Voltage 0 - 45 volts
D-C Screen Voltage 0 - 450 volts
D-C Screen Current 0 - 150 ma

TYPICAL OPERATION

<table>
<thead>
<tr>
<th>Telegraphy</th>
<th>Telephone</th>
<th>Control Grid</th>
<th>Suppressor Grid</th>
<th>Plate &amp; Screen</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen Modulation</td>
<td>400 volts</td>
<td>400 volts</td>
<td>400 volts</td>
<td>400 volts</td>
<td>400 volts</td>
</tr>
<tr>
<td>R-F Driving Power</td>
<td>0 - 150 volts</td>
<td>0 - 150 volts</td>
<td>0 - 150 volts</td>
<td>0 - 150 volts</td>
<td>0 - 150 volts</td>
</tr>
<tr>
<td>D-C Control Grid Current</td>
<td>0 - 150 ma</td>
<td>0 - 150 ma</td>
<td>0 - 150 ma</td>
<td>0 - 150 ma</td>
<td>0 - 150 ma</td>
</tr>
<tr>
<td>D-C Screen Current</td>
<td>0 - 75 ma</td>
<td>0 - 75 ma</td>
<td>0 - 75 ma</td>
<td>0 - 75 ma</td>
<td>0 - 75 ma</td>
</tr>
<tr>
<td>D-C Screen Voltage</td>
<td>0 - 450 volts</td>
<td>0 - 450 volts</td>
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<td>0 - 450 volts</td>
<td>0 - 450 volts</td>
</tr>
</tbody>
</table>

R-F POWER AMPLIFIER—CLASS B—TELEPHONE

MAXIMUM RATINGS
D-C Plate Voltage ........................................ 2000 volts
D-C Screen Voltage ...................................... 400 volts
D-C Control Grid Voltage 0 - 150 volts
D-C Screen Voltage 0 - 75 ma
D-C Screen Voltage 0 - 450 volts
Peak R-F Input Voltage 90 volts
R-F Driving Power 30 ma
Carrier Power Output 50 watts
Peak Power Output 200 watts

At the peak of the a-f cycle with 100% modulation.

FREQUENCY RANGE

The RK-28 may be operated at the maximum ratings at frequencies up to 30 megacycles. Above 30 megacycles the reduced efficiency required requires that the plate voltage be lowered to a maximum of 1500 volts to prevent the plate dissipation from exceeding the maximum rated value. The operation of the tube at frequencies higher than 60 megacycles is not recommended.

EXCITATION

The Class C amplifier characteristic curves show the plate current and screen current plotted against excitation as denoted by the d.c. control grid current in milliamperes. The power output flattens off around 12 or 13 ma. of grid current with very little gained above these values. The screen dissipation increases with excitation and for this reason the excitation should be kept at a reasonable value.

SHIELDING

Shielding of the grid input tuning system from the plate tuning apparatus is desirable and will provide improved stability. If a shield is applied to the RK-28, it should enclose the base and extend to the lower internal shield and should clear the glass bulb at least 1/16".

BIAS

At least 20 volts of fixed bias should be used with 2000 volts on the plate to prevent and screen in case of failure of the bias or excitation. Additional bias may be obtained by the use of a grid or cathode resistor.

CRYSTAL OSCILLATOR

Using crystal control, 150 watts of r-f power output may be obtained without overheating the crystal.

PLATE TEMPERATURE

The plate of the RK-28 will show a light red color (See Plate Temperature Calibration Chart) at the maximum rated plate dissipation. Dissipation above the rated value should be avoided.