



**TYPE UE-468**  
**R-F POWER AMPLIFIER, OSCILLATOR, CLASS B MODULATOR**  
**ENGINEERING INFORMATION**

**GENERAL RATINGS**

Number of Electrodes .....	3
Filament Voltage .....	10 volts
Current .....	4.05 amperes
Type .....	Thoriated Tungsten
Average Characteristic Values Calculated at:	
150 ma. .... Plate Current	
Amplification Factor .....	18
Plate Resistance .....	4500 ohms
Mutual Conductance .....	4000 micromhos
Average Direct Interelectrode Capacities:	
Grid to Plate .....	7.0 uuf
Grid to Filament .....	8.8 uuf
Plate to Filament .....	1.25 uuf
Maximum Overall Dimensions:	
Length .....	11 inches
Diameter .....	2 15/16 inches
Bulb .....	T-23
Cap .....	Skirted Large Metal
Base .....	Jumbo 4-Large Pin
Type of Cooling .....	Air
Net Weight .....	10 oz.

**MAXIMUM RATINGS**

Maximum D-C Plate Voltage Modulated .....	2000	volts
Maximum D-C Plate Voltage Unmodulated .....	2500	volts
Maximum A-C Plate Voltage R. M. S. ....	2500	volts
Maximum D-C Plate Current Modulated .....	200	ma.
Maximum D-C Plate Current Unmodulated .....	200	ma.
Maximum Plate Dissipation .....	150	watts
Maximum D-C Grid Current .....	60	ma.
Maximum R-F Grid Current .....	7.5	amp.

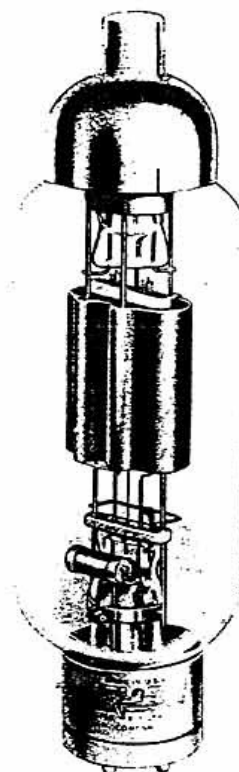
Frequency Rating for Operating Conditions with Maximum Rated Power Input and Nominal Output:

Below .....	30	megacycles
Above .....	10	meters

\*Maximum Frequency Rating with Reduced Power Input and Output:

Below .....	*85	megacycles
Above .....	*3.5	meters

\* For operation at the higher frequencies, the plate voltage, plate current, plate dissipation, and d-c grid current should not exceed 50% of the Maximum Ratings. The R-F grid current should never exceed the maximum rated value.



**UNITED TYPE UE-468**

High frequency triode for heavy duty industrial, communications, and therapy uses.

**INSTALLATION**

The base of the UNITED UE-468 is designed for mounting in a standard "50-Watt" socket of the four-pin, bayonet type. The tube should always be mounted vertically with ample air space provided for ventilation.

The filament of the UE-468 should be operated at the rated value of 10 volts. Operation at other than rated value may result in loss of filament emission and short life.

The plate dissipation of the UE-468 should never exceed the values given under Maximum Ratings and Typical Operation Conditions.

When the UE-468 is subjected during operation to external high voltage or high frequency fields, shielding and r-f filter circuits should be provided.

**GRAPHITE ANODE AND ISOLATED GETTER TRAP**

A graphite anode is used in this type because of several specific advantages over metals such as tantalum, molybdenum and nickel. The radiating area of graphite is approximately twice the projected area due to its surface porosity. Moreover, because of the black body principle, it will dissipate four times more heat than metal.

Graphite, being infusible, will not warp or twist. Therefore, it maintains its exact form under all temperatures, the result being constant inter-element relationship. The low operating temperature of the graphite anode tends to keep the grid cool, reduces overload hazards, and prevents gas current. The inherent qualities of graphite over metal as outlined above, are advantages of primary importance in designing tubes of this type for long and satisfactory service life.

Type UE-468 employs the new UNITED isolated getter trap which keeps tube free from gas and preserves filament emission.

All ratings given are for continuous service. Higher ratings are permissible for intermittent operation. Additional data will be furnished upon request.

**A-F POWER AMPLIFIER AND MODULATOR—CLASS B**

Maximum D-C Plate Voltage	2500	volts
Maximum D-C Plate Current	200	ma.
Maximum Plate Input	450	watts
Maximum Plate Dissipation	150	watts

(Averaged over any audio freq. cycle)

Typical Operation (2 tubes):

A-C Filament Voltage	10	10	volts
D-C Plate Voltage	2000	2500	volts
D-C Grid Voltage	-100	-130	volts
Peak A-F to Grid Voltage	420	410	volts
Zero-Sig D-C Plate Cur.	60	60	ma.
Max.-Sig. D-C Plate Cur.	380	320	ma.
Load Resistance (per tube)	2800	4000	ohms
Effective Load Res. (plate to plate)	11200	16000	ohms
Max.-Signal Driving Power	9	2.5 approx.	watts
Power Output	500	500 approx.	watts

**R-F POWER AMPLIFIER—CLASS B TELEPHONY**

(Carrier Conditions—Modulation Factor = 1.0)

Maximum D-C Plate Voltage	2500	volts
Maximum D-C Plate Current	150	ma.
Maximum Plate Input	250	watts
Maximum Plate Dissipation	150	watts
Maximum R-F Grid Current	7.5	amp.

Typical Operation:

A-C Filament Voltage	10	10	volts
D-C Plate Voltage	2000	2500	volts
D-C Grid Voltage	-110	-140	volts
Peak R-F Grid Voltage	125	130	volts
D-C Plate Current	110	90	ma.
D-C Grid Current†	0.5	0 approx.	ma.
Driving Power†	6	4 approx.	watts
Power Output	80	80 approx.	watts

**PLATE MODULATED R-F POWER AMPLIFIER CLASS C TELEPHONY**

(Carrier Conditions—Modulation Factor = 1.0)

Maximum D-C Plate Voltage	2000	volts
Maximum D-C Plate Current	200	ma.
Maximum Plate Input	400	watts
Maximum Plate Dissipation	120	watts
Maximum D-C Grid Voltage	-500	volts
Maximum D-C Grid Current	60	ma.
Maximum R-F Grid Current	7.5	amp.

Typical Operation:

A-C Filament Voltage	10	10	volts
D-C Plate Voltage	1750	2000	volts
D-C Grid Voltage	-300	-350	volts
Peak R-F Grid Voltage	475	500	volts
D-C Plate Current	200	160	ma.
D-C Grid Current†	30	20 approx.	ma.
Driving Power†	14	9 approx.	watts
Power Output	270	250 approx.	watts

**R-F POWER AMPLIFIER AND OSCILLATOR CLASS C TELEGRAPHY**

(Key Down Conditions)

Maximum D-C Plate Voltage	2500	volts
Maximum D-C Plate Current	200	ma.
Maximum Plate Input	550	watts
Maximum Plate Dissipation	150	watts
Maximum D-C Grid Voltage	-500	volts
Maximum D-C Grid Current	60	ma.
Maximum R-F Grid Current	7.5	amp.

Typical Operation:

A-C Filament Voltage	10	10	volts
D-C Plate Voltage	2000	2500	volts
D-C Grid Voltage	-250	-300	volts
Peak R-F Grid Voltage	400	450	volts
D-C Plate Current	200	200	ma.
D-C Grid Current	23	18 approx.	ma.
Driving Power†	9	8 approx.	watts
Power Output†	300	380 approx.	watts

† Subject to wide variations depending on the impedance of the load circuit. The driver stage should have a tank circuit of good regulation and should be capable of delivering considerably more than the required driving power.

