



A-F POWER AMPLIFIER, CLASS A, AB₁ MODULATOR
ENGINEERING INFORMATION

GENERAL RATINGS

Number of Electrodes	3
Filament Voltage	10 volts
Current	3.25 amperes
Type	Thoriated Tungsten
Average Characteristic Values Calculated at:	
Eb = 1000, Ec = -50, Ef = 10 D-C	
Plate Current	0.072 amperes
Amplification Factor	12
Plate Resistance	3400 ohms
Mutual Conductance	3530 micromhos
Average Direct Interelectrode Capacities:	
Grid to Plate	14.5 uuf
Grid to Filament	6.0 uuf
Plate to Filament	5.5 uuf
Maximum Overall Dimensions:	
Length	7 7/8 inches
Diameter	2 5/16 inches
Bulb	T-18
Base	Jumbo 4-Large Pin
Type of Cooling	Air
Net Weight	8 oz.

MAXIMUM RATINGS

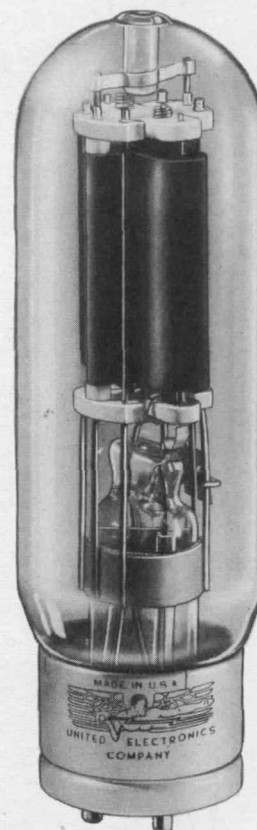
Maximum D-C Plate Voltage	1250 volts
Maximum Plate Dissipation	100 watts

A-F POWER AMPLIFIER AND MODULATOR—CLASS A

Maximum D-C Plate Voltage	1250 volts
Maximum D-C Plate Current	85 ma.
Maximum Plate Dissipation	85 watts

Typical Operation:

Filament Voltage	10	10	10	a-c volts
D-C Plate Voltage	750	1000	1250	volts
Grid Voltage	-46	-61	-80	volts
Peak Grid Swing	41	56	75	approx. volts
D-C Plate Current	34	53	60	ma.
Plate Resistance	4400	3800	3600	ohms
Mutual Conductance	2750	3150	3300	umhos
Load Resistance	8800	7600	9200	ohms
U. P. O. (5% 2nd harmonic)	5.6	12.0	19.7	watts



INTERCHANGES WITH TYPES 242-A, 342-B

UNITED type 242-B is widely used for many audio applications and in motion picture sound amplifiers.

INSTALLATION

The base of the UNITED 242-B 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 242-B should be operated at the rated value of 10 volts. Operation at other than the rated value may result in loss of filament emission and short life.

UNITED type 242-B is especially designed for use as a Class A and AB₁ audio-frequency Amplifier and Modulator; for other classes of service UNITED type 211 is to be preferred.

While the ratings printed herein are conservative, it is important to observe the requirements of good engineering practice as to transmitter design and operation. Adequate cabinet ventilation should be provided to carry off the heat dissipated during operation. Tube sockets should be inspected to avoid high resistance contacts to the base-pin terminals.

GRAPHITE ANODE

A specially processed graphite anode is used in this tube type because of several specific advantages over metals such as tantalum, molybdenum, and nickel. The radiating area of graphite is approximately twice the projected anode area because of its surface porosity and it will dissipate at least four times more heat than metal.

Graphite, being infusible will not warp or twist. The exact form of graphite is maintained under all temperatures; hence constant inter-element relationships and uniform characteristics result. The inherent advantages of graphite over metal are of primary importance in designing tubes of this type for long and satisfactory service.

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

