

Taylor

CUSTOM
BUILT

Tubes

CIRCUIT INFORMATION

A circuit employing the 813 in plate-modulated telephony service is shown on this page. In this circuit it will be noted that the plate-circuit by-pass condenser C_6 is connected to ground in series with screen by-pass C_7 . This arrangement minimizes the by-passing effect of C_6 at high audio frequencies and greatly improves the modulation of the screen voltage. Because the screen impedance of the 813 is about 20000 ohms and the series screen resistor required is 60000 ohms, the capacitance ratio of C_6 to C_7 should be about 3 to 1, as indicated in the legend. For operation at 3.5 Mc and lower frequencies, it may be desirable to increase the values of C_6 and C_7 keeping their ratio the same.

In Class C telegraph service, where the grid excitation or the cathode circuit of the 813 is to be keyed, it is important that the screen voltage be obtained from a separate, low-voltage source, or from a tap on a bleeder circuit across the plate supply. It should not be obtained through a series resistor as shown in the plate-modulated-telephony circuit. With the series-resistor method, the D. C. screen voltage will rise to the plate potential when the space current is reduced to zero. This voltage, of course, greatly exceeds the maximum screen-voltage rating. When the D. C. screen voltage is limited to approximately 400 volts under key-up conditions, a fixed grid bias of -45 or -50 volts is adequate to reduce the plate current to a safe value; partial fixed bias, therefore, is recommended in C. W. transmitters where the oscillator stage is to be keyed for break-in operation. The remainder of the required grid bias can be conveniently obtained from a grid leak.



813 BEAM POWER AMPLIFIER \$22.00

The Taylor 813 is a Beam Power Transmitting Tube requiring less than one watt of driving power to 260 watts output; 100 watts plate dissipation. Ideal for use in quick band-change transmitters, as neutralization is not necessary in well shielded units. The 813 is an excellent doubler—gives strong harmonic output with very high efficiency. Has molded glass-dish type stem. As a result of short leads, the 813 can be operated at full input at 30 mc., and at reduced ratings up to 60 mc.

GENERAL CHARACTERISTICS

Filament Voltage 10.0
 Filament Current, amps. 5.8
 Transconductance, for Plate Current of 50 ma., approx. 3750

Interelectrode Capacitances:
 Grid-Plate (with External Shielding), max., uuf. 0.2
 Input, uuf. 16.3
 Output, uuf. 1.4
 Max. Height, in. 2 1/4
 Max. Diam., in. 7 1/2
 * Prox. Jumbo Base Nonex Glass

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS As Plate-Modulated R-F Power Amplifier—Class C Telephony

	C.C.S.
D. C. Plate Voltage, max. volts.....	1600
D. C. Screen Voltage, max. volts.....	400
D. C. Grid Voltage, max. volts.....	-300
D. C. Plate Current, max. ma.....	150
D. C. Grid Current, max. ma.....	25
Screen Input, max. watts.....	15

Typical Operation:

D. C. Plate Voltage, volts.....	1250	1500
D. C. Screen Voltage, § volts.....	400	400
From a series screen resistor, ohms.....	53000	60000
D. C. Grid Voltage, * volts.....	-120	-130
From a grid resistor of, ohms.....	30000	21600
Peak R-F Grid Voltage, volts.....	135	210
Beam-Forming Plate Voltage, † volts.....	0	0
D. C. Plate Current, ma.....	150	150
D. C. Screen Current, ma.....	16	20
D. C. Grid Current (approx.), ma.....	4	6
Driving power (approx.), watts.....	0.7	1.2
Power Output (approx.), watts.....	135	175

As R-F Power Amplifier and Oscillator—Class C Telegraphy

	C.C.S.
D. C. Plate Voltage, max. volts.....	2000
D. C. Screen Voltage, max. volts.....	400
D. C. Grid Voltage, max. volts.....	-300
D. C. Plate Current, max. ma.....	180
D. C. Grid Current, max. ma.....	25
Screen Input, max. watts.....	22

Typical Operation:

D. C. Plate Voltage, volts.....	1250	1500	2000
D. C. Screen Voltage, volts.....	300	300	400
From a series resistor of, † ohms.....	42000	60000	107000
D. C. Grid Voltage, volts.....	-60	-70	-80
From a grid resistor of, * ohms.....	8500	11700	30000
Peak R-F Grid Voltage, volts.....	145	150	160
Beam-Forming Plate Voltage, † volts.....	0	0	0
D. C. Plate Current, ma.....	180	180	185
D. C. Screen Current, ma.....	23	20	15
D. C. Grid Current (approx.), ma.....	7	6	3
Driving Power (approx.), watts.....	1	0.8	0.5
Power Output (approx.), watts.....	155	130	260

†Series screen resistor should not be used except where the 813 is employed as a buffer amplifier and is not keyed.
 ‡Beam-forming plates should be connected to the mid-point of filament circuit operated on A. C., or to the negative end of the filament when a D. C. filament supply is used.
 §Supplied preferably from separate modulated screen-voltage source; voltage-dropping resistor in series with modulated plate-voltage supply may be used.
 *The total effective grid-circuit resistance should not exceed 30000 ohms.

