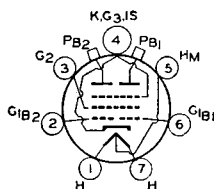


Maximum Circuit Values (CCS or ICAS conditions):

Grid-Circuit Resistance..... 0.1 max megohm

* In applications where the plate dissipation exceeds 2.5 watts it is important that a large area of contact be provided between the plate cylinder and the connector in order to provide adequate heat conduction.

♢ Obtained from grid resistor.



TWIN BEAM POWER TUBE

Small, sturdy, heater-cathode type used as af power amplifier and modulator, as rf power amplifier and oscillator, and as frequency tripler. May be used with full input up to 250

5894

Mc. For operation at 300 Mc, plate voltage and plate input should be reduced to 96 per cent of maximum ratings; at 400 Mc, to 90 per cent; at 500 Mc, to 83 per cent. Class C Telegraphy maximum CCS plate dissipation (per tube), 40 watts. Requires Septar seven-contact socket and may be mounted in vertical position with base up or down, or in horizontal position with plate terminals in horizontal plane. OUTLINE 20, *Outlines* Section. Plates show no color when tube is operated at maximum CCS ratings.

HEATER ARRANGEMENT

HEATER VOLTAGE (AC/DC).....	Series 12.6 ± 10%	Parallel 6.3 ± 10%	volts
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HEATER CURRENT.....	0.9	1.8	amperes
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MU-FACTOR, Grid No.2 to Grid No.1 (Each unit)*.....	8.2		
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DIRECT INTERELECTRODE CAPACITANCES (Each unit):

Grid No.1 to plate.....	0.08 max	μf
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Grid No.1 to cathode, grid No.3, internal shield, grid No.2, and heater.....	11	μf
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Plate to cathode, grid No.3, internal shield, grid No.2, and heater.....	3.4	μf
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* Plate volts, 600; grid-No.2 volts, 250; plate milliamperes, 40.

PUSH-PULL AF POWER AMPLIFIER AND MODULATOR—Class B

Maximum CCS Ratings: *Values are on a per-tube basis*

DC PLATE VOLTAGE.....	600 max	volts
DC GRID-No.2 (SCREEN-GRID) VOLTAGE.....	250 max	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE.....	-175 max	volts
MAXIMUM-SIGNAL DC PLATE CURRENT [♢]	200 max	ma
MAXIMUM-SIGNAL PLATE INPUT [♢]	120 max	watts
MAXIMUM-SIGNAL GRID-No.2 INPUT [♢]	7 max	watts
PLATE DISSIPATION [♢]	40 max	watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode.....	100 max	volts
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Heater positive with respect to cathode.....	100 max	volts
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Typical Operation:

DC Plate Voltage.....	450	600	volts
DC Grid-No.2 Voltage [♢]	250	250	volts
DC Grid-No.1 Voltage.....	-23	-25	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage.....	53	53	volts
Zero-Signal DC Plate Current.....	67	35	ma
Maximum-Signal DC Plate Current.....	200	168	ma
Zero-Signal DC Grid-No.2 Current.....	8	4	ma
Maximum-Signal DC Grid-No.2 Current.....	26	27	ma
Maximum-Signal DC Grid-No.1 Current.....	2.3	1.6	ma
Effective Load Resistance (Plate to plate).....	4400	8000	ohms
Maximum-Signal Driving Power (Approx.).....	0.2	0.2	watt
Maximum-Signal Power Output (Approx.).....	60	70	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For fixed-bias operation.....	50000 max	ohms
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For cathode-bias operation.....	Not recommended	
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♢ Averaged over any audio-frequency cycle of sine-wave form.

♢ Obtained preferably from a separate source or from the plate-voltage supply with a voltage divider.

RCA Transmitting Tubes

PLATE-MODULATED PUSH-PULL RF POWER AMPLIFIER—Class C Telephony

Carrier conditions per tube with a maximum modulation factor of 1.0

Maximum CCS Ratings:

DC PLATE VOLTAGE.....	450 max	volts
DC GRID-No.2 VOLTAGE.....	250 max	volts
DC GRID-No.1 VOLTAGE.....	-175 max	volts
DC PLATE CURRENT.....	160 max	ma
DC GRID-No.1 CURRENT.....	10 max	ma
PLATE INPUT.....	72 max	watts
GRID-No.2 INPUT.....	4.5 max	watts
PLATE DISSIPATION.....	27 max	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.....	100 max	volts
Heater positive with respect to cathode.....	100 max	volts

Typical Operation:

	250 Mc	470 Mc	
DC Plate Voltage.....	450	380	volts
DC Grid-No.2 Voltage (Approx.)†.....	250	250	volts
From an adjustable series resistor having a maximum value of.....	20000	30000	ohms
DC Grid-No.1 Voltageδ.....	-100	-60	volts
From a grid-No.1 resistor of.....	20000	15000	ohms
Peak RF Grid-No.1-to-Grid-No.1 Voltage.....	120	—	volts
DC Plate Current.....	150	160	ma
DC Grid-No.2 Current (Approx.).....	16	8	ma
DC Grid-No.1 Current (Approx.).....	5	4	ma
Driver Power Output (Approx.).....	0.6	13	watts
Useful Power Output (Approx.) ^Δ	50	35	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance.....	50000 max	ohms
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† Obtained preferably from a separate source modulated along with the plate supply, or from the modulated plate supply through a series resistor. It is recommended that this resistor be adjustable to permit obtaining the desired operating plate current after initial tuning adjustments are completed.

δ Obtained from a grid-No.1 resistor of the value shown or from a combination of grid-No.1 resistor with either fixed supply or cathode resistor.

^Δ Measured at load of output circuit.

PUSH-PULL RF POWER AMPLIFIER AND OSCILLATOR—Class C Telephony[#] and PUSH-PULL RF POWER AMPLIFIER—Class C FM Telephony

Maximum CCS Ratings:

DC PLATE VOLTAGE.....	600 max	volts
DC GRID-No.2 VOLTAGE.....	250 max	volts
DC GRID-No.1 VOLTAGE.....	-175 max	volts
DC PLATE CURRENT.....	220 max	ma
DC GRID-No.1 CURRENT.....	10 max	ma
PLATE INPUT.....	120 max	watts
GRID-No.2 INPUT.....	7 max	watts
PLATE DISSIPATION.....	40 max	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.....	100 max	volts
Heater positive with respect to cathode.....	100 max	volts

Typical Operation:

	250 Mc	470 Mc	
DC Plate Voltage.....	600	400	500
DC Grid-No.2 Voltage (Approx.) [®]	250	250	250
From an adjustable series resistor having a maximum value of.....	33000	22000	47000
DC Grid-No.1 Voltageδ.....	-80	-38	-60
From a grid-No.1 resistor of.....	39000	24000	30000
From cathode resistor of.....	360	180	300
Peak RF Grid-No.1-to-Grid-No.1 Voltage.....	200	—	—
DC Plate Current.....	200	220	200
DC Grid-No.2 Current (Approx.).....	16	12	8
DC Grid-No.1 Current (Approx.).....	2	3	4
Driver Power Output (Approx.).....	4	5	13
Useful Power Output (Approx.) ^Δ	85	43	55

Maximum Circuit Values:

Grid-No.1-Circuit Resistance.....	50000 max	ohms
# Key-down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.		
* Obtained preferably from a separate source, or from the plate-supply voltage with a voltage divider, or through a series resistor. It is recommended that this resistor be adjustable to permit obtaining the desired operating plate current after initial tuning adjustments are completed.		
‡ Obtained from a fixed supply, by grid-No.1 resistor, by cathode resistor, or by combination methods.		
^ Measured at load of output circuit.		

FREQUENCY TRIPLER—Class C

Values are on a per-tube basis

Maximum CCS Ratings:

DC PLATE VOLTAGE.....	600 max	volts
DC GRID-No.2 VOLTAGE.....	250 max	volts
DC GRID-No.1 VOLTAGE.....	-175 max	volts
DC PLATE CURRENT.....	160 max	ma
DC GRID-No.1 CURRENT.....	10 max	ma
PLATE INPUT.....	80 max	watts
GRID-No.2 INPUT.....	7 max	watts
PLATE DISSIPATION.....	40 max	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.....	100 max	volts
Heater positive with respect to cathode.....	100 max	volts

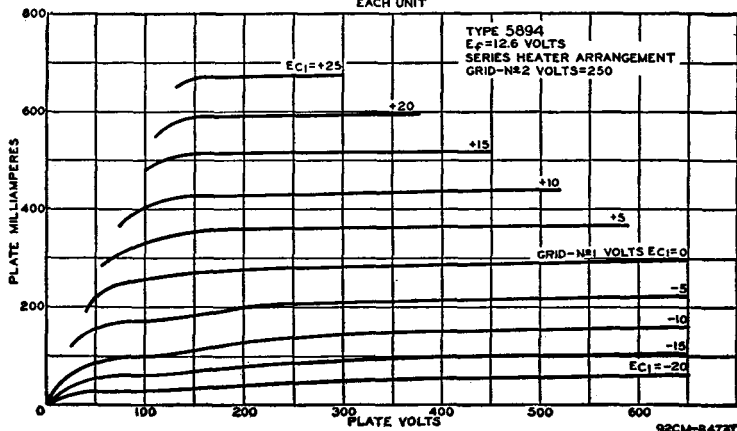
Typical Operation as Tripler:

	150 Mc	225 Mc	462 Mc	
DC Plate Voltage.....	400	500	400	400
DC Grid-No.2 Voltage (Approx.) ‡.....	250	250	220	220
From an adjustable series resistor having a maximum value of.....	16000	39000	20000	56000
DC Grid-No.1 Voltage ‡.....	-150	-150	-150	-175
From a grid-No.1 resistor of.....	30000	24000	50000	36000
Peak RF Grid-No.1-to-Grid-No.1 Voltage..	360	360	360	—
DC Plate Current.....	146	120	130	140
DC Grid-No.2 Current (Approx.).....	16	10	20	5
DC Grid-No.1 Current (Approx.).....	5	6	3	5
Driver Power Output (Approx.).....	0.9	1	0.5	4
Useful Power Output (Approx.)^.....	18	20	12	16

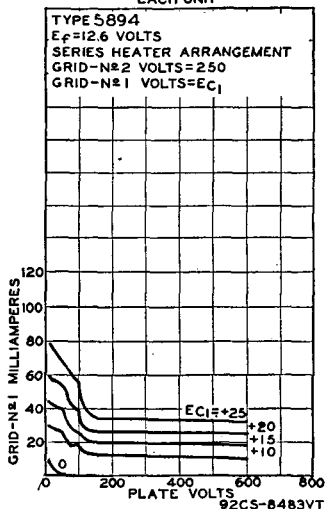
Maximum Circuit Values:

Grid-No.1-Circuit Resistance.....	50000 max	ohms
‡ Obtained preferably from a separate source, or from the plate-supply voltage with a voltage divider, or through a series resistor. It is recommended that this resistor be adjustable to permit obtaining the desired operating plate current after initial tuning adjustments are completed.		
‡ Obtained from a fixed supply, by grid-No.1 resistor, by cathode resistor, or by combination methods.		
^ Measured at load of output circuit.		

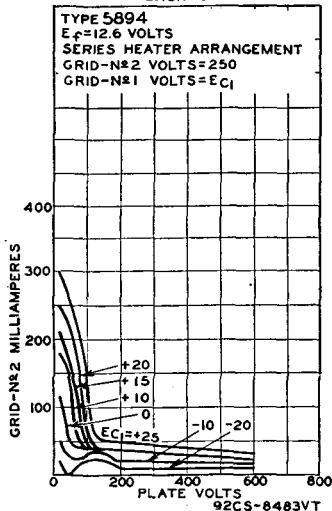
AVERAGE PLATE CHARACTERISTICS
EACH UNIT



**AVERAGE CHARACTERISTICS
EACH UNIT**



**AVERAGE CHARACTERISTICS
EACH UNIT**

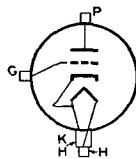


POWER TRIODE

5946

Forced-air-cooled heater-cathode type used as plate-pulsed oscillator and amplifier. May be used with full input up to 1300 Mc. For operation at 2000 Mc, plate voltage and plate input

should be reduced to 75 per cent of maximum ratings. Class C maximum plate dissipation, 250 watts. Tube may be mounted in any position. OUTLINE 71, *Outlines* Section. A minimum air flow of 16 cubic feet per minute should be directed through the radiator toward the bulb and grid terminal when the 5946 is operated at maximum rated dissipation. Air flow should start before and continue during application of any voltages to the tube. Heater power, plate power, and air may be removed simultaneously. Maximum temperatures: radiator (measured on core at end adjacent to plate ring), 180°C; grid terminal, 150°C; plate, grid, and cathode seals, 150°C.



HEATER VOLTAGE (AC/DC)°	6.3 ± 10%	volts
HEATER CURRENT	3.4	amperes
AMPLIFICATION FACTOR*	27	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	6	μf
Grid to cathode and heater	11	μf
Plate to cathode and heater□	0.22	μf

° Heater voltage must be applied for a minimum period of 1 minute before the application of plate voltage.

* Grid volts, -15; plate milliamperes, 250.

□ With external shield connected to grid.

PLATE-PULSED OSCILLATOR AND AMPLIFIER—Class C

Maximum Ratings:

For an "on" time° of	10 max	100 max	μsec
PEAK POSITIVE-PULSE PLATE-SUPPLY VOLTAGE♦	7500 max	7500 max	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	600 max	600 max	volts
PEAK PLATE CURRENT FROM PULSE SUPPLY	4.5 max	3.5 max	amperes
PEAK RECTIFIED GRID CURRENT	1.0 max	0.75 max	amperes
DC PLATE CURRENT	45 max	250 max	ma
DC GRID CURRENT	10 max	70 max	ma
PLATE INPUT	340 max	340 max	watts
PLATE DISSIPATION	250 max	250 max	watts