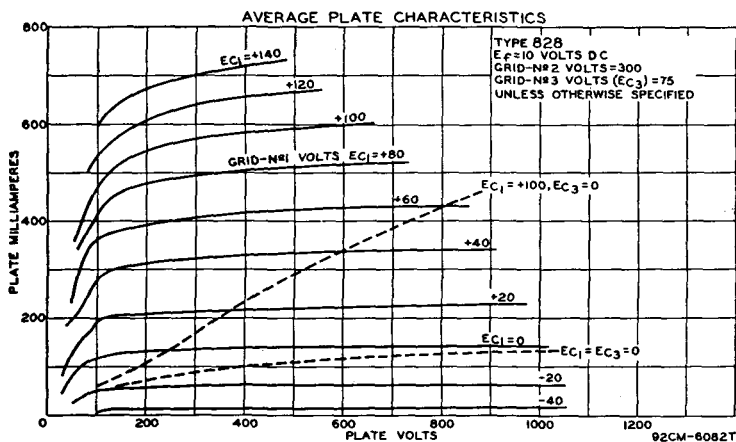
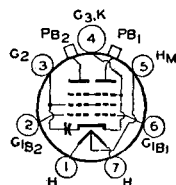




TWIN BEAM POWER TUBE

829-B

Heater-cathode type having mid-tapped heater used as af power amplifier and modulator and as rf power amplifier and oscillator. May be used with full input up to 200 Mc. For operation



at 250 Mc, plate voltage and plate input should be reduced to 89 per cent of maximum ratings. Class C Telegraphy maximum plate dissipation (per tube) with natural cooling, CCS 30 watts, ICAS 40 watts; with forced-air cooling, CCS 40 watts, ICAS 45 watts. Requires Septar seven-contact socket and may be mounted in vertical position with base up or down, or in horizontal position with pins 2 and 6 in vertical plane. OUTLINE 22, *Outlines* Section. Plates show no color when tube is operated at maximum CCS or ICAS ratings.

HEATER ARRANGEMENT	Series	Parallel	
HEATER VOLTAGE (AC/DC)	12.6 $\pm$ 10%	6.3 $\pm$ 10%	volts
HEATER CURRENT	1.125	2.25	amperes
TRANSCONDUCTANCE (Each unit)*		8500	μ mhos
MU-FACTOR, Grid No.2 to Grid No.1 (Each unit)**		9	
DIRECT INTERELECTRODE CAPACITANCES (Each unit): [‡]			
Grid No.1 to plate		0.12 max	μ f
Grid No.1 to cathode, grid No.3, grid No.2, and heater mid-tap		14.5	μ f
Plate to cathode, grid No.3, grid No.2, and heater mid-tap		7	μ f

* Plate volts, 250; grid-No.2 volts, 175; plate milliamperes, 60.

** Plate and grid-No.2 volts, 225; plate milliamperes, 60.

[‡] With external shield up to flange seal.

PUSH-PULL AF POWER AMPLIFIER AND MODULATOR—Class AB₁

Values are on a per-tube basis

Maximum CCS Ratings:

DC PLATE VOLTAGE	
DC GRID-NO.2 (SCREEN-GRID) VOLTAGE	
MAXIMUM-SIGNAL DC PLATE CURRENT [‡]	
MAXIMUM-SIGNAL PLATE INPUT [‡]	
MAXIMUM-SIGNAL GRID-NO.2 INPUT [‡]	
PLATE DISSIPATION [‡]	

Natural Cooling

750 max	volts
225 max	volts
250 max	ma
100 max	watts
7 max	watts
30 max	watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode	100 max	volts
Heater positive with respect to cathode	100 max	volts

BULB TEMPERATURE	235 max	°C
----------------------------	---------	----

RCA Transmitting Tubes

Typical Operation:

DC Plate Voltage.....	600	volts.
DC Grid-No.2 Voltage.....	200	volts.
DC Grid-No.1 (Control-Grid) Voltage.....	-18	volts.
Peak AF Grid-No.1-to-Grid-No.1 Voltage.....	36	volts.
Zero-Signal DC Plate Current.....	40	ma
Maximum-Signal DC Plate Current.....	110	ma
Zero-Signal DC Grid-No.2 Current.....	4	ma
Maximum-Signal DC Grid-No.2 Current.....	26	ma
Effective Load Resistance (Plate to plate).....	13750	ohms
Maximum-Signal Driving Power.....	0	watts
Maximum-Signal Power Output.....	44	watts.

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For fixed-bias operation.....	0.1 max	megohm
For cathode-bias operation.....	Not recommended	

■ 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.

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

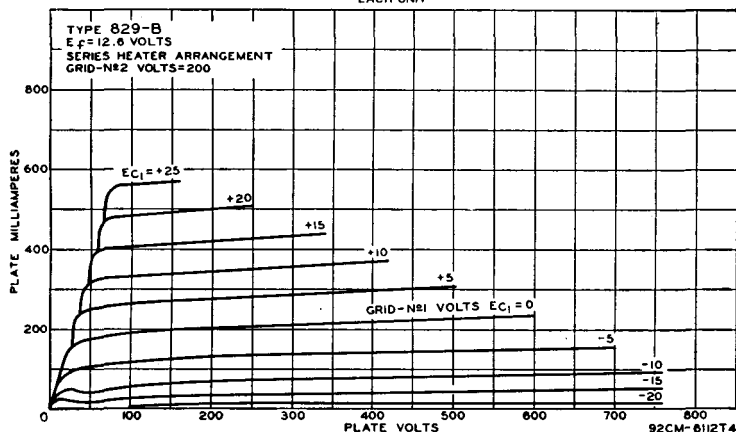
Carrier conditions per tube for use with a maximum modulation factor of 1.0

Maximum Ratings:	Natural Cooling		Forced-Air Cooling		
	CCS	ICAS	CCS	ICAS	
DC PLATE VOLTAGE.....	600 max	600 max	600 max	600 max	volts
DC GRID-No.2 VOLTAGE.....	225 max	225 max	225 max	250 max	volts
DC GRID-No.1 VOLTAGE.....	-175 max	-175 max	-175 max	-175 max	volts
DC PLATE CURRENT.....	212 max	212 max	212 max	240 max	ma
DC GRID-No.1 CURRENT.....	15 max	15 max	15 max	20 max	ma
PLATE INPUT.....	67.5 max	90 max	90 max	120 max	watts
GRID-No.2 INPUT.....	7 max	7 max	7 max	8 max [♢]	watts
PLATE DISSIPATION.....	21 max	28 max	28 max	40 max	watts.
PEAK HEATER-CATHODE VOLTAGE:					
Heater negative with respect to cathode.....	100 max	100 max	100 max	100 max	volts.
Heater positive with respect to cathode.....	100 max	100 max	100 max	100 max	volts
BULB TEMPERATURE.....	235 max	235 max	235 max	235 max	°C

Typical Operation:

DC Plate Voltage.....	600	425	600	425	600	600	volts
DC Grid-No.2 Voltage.....	190	200	200	200	200	200	volts
From series resistor of.....	32000	11000	25000	11000	25000	20000	ohms
DC Grid-No.1 Voltage.....	-60	-60	-60	-60	-60	-70	volts
From grid-No.1 resistor of.....	15000	4300	8600	4300	8600	5400	ohms.

AVERAGE PLATE CHARACTERISTICS EACH UNIT



RCA Transmitting Tubes

Peak RF Grid-No.1-to-Grid-No.1

Voltage	138	160	144	160	144	180	volts
DC Plate Current	112	212	150	212	150	200	ma
DC Grid-No.2 Current	13	21	16	21	16	20	ma
DC Grid-No.1 Current (Approx.)	4	14	7	14	7	13	ma
Driving Power (Approx.)	0.3	1	0.5	1	0.5	1.1	watts
Power Output (Approx.)	50	63	70	63	70	90	watts

Maximum Circuit Values (CCS or ICAS conditions):

Grid-No.1-Circuit Resistance	15000 max	ohms
------------------------------	-----------	------

▲ In ICAS applications, at frequencies less than 20 Mc, where the duty factor does not exceed 0.2, maximum "on" period does not exceed 30 seconds, and average modulation factor does not exceed 0.25, maximum grid-No.2 input of 12 watts is permitted.

♣ Obtained preferably from separate source modulated along with the plate supply, or from the modulated plate supply through series resistor of value shown.

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

PUSH-PULL RF POWER AMPLIFIER AND OSCILLATOR—Class C Telegraphy[#]

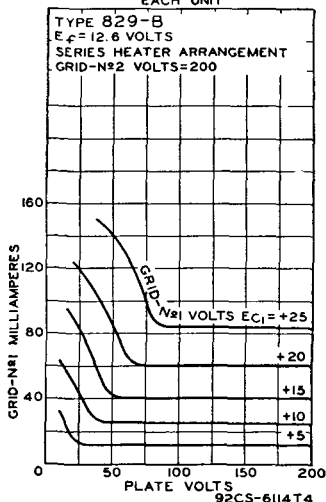
and

PUSH-PULL RF POWER AMPLIFIER—Class C FM Telephony

Values are on a per-tube basis

	Natural Cooling		Forced-Air Cooling		
Maximum Ratings:	CCS	ICAS	CCS	ICAS	
DC PLATE VOLTAGE	750 max	750 max	750 max	750 max	volts
DC GRID-No.2 VOLTAGE	225 max	225 max	225 max	250 max	volts
DC GRID-No.1 VOLTAGE	-175 max	-175 max	-175 max	-175 max	volts
DC PLATE CURRENT	240 max	240 max	240 max	240 max	ma
DC GRID-No.1 CURRENT	15 max	15 max	15 max	20 max	ma
PLATE INPUT	90 max	120 max	120 max	150 max	watts
GRID-No.2 INPUT	7 max	7 max	7 max	8 max	watts
PLATE DISSIPATION	30 max	40 max	40 max	45 max	watts
PEAK HEATER-CATHODE VOLTAGE:					
Heater negative with respect to cathode	100 max	100 max	100 max	100 max	volts
Heater positive with respect to cathode	100 max	100 max	100 max	100 max	volts
BULB TEMPERATURE	265 max	265 max	235 max	235 max	°C

TYPICAL CHARACTERISTICS
EACH UNIT



TYPICAL CHARACTERISTICS
EACH UNIT

