



ELECTRONIC TUBE REFERENCE

832

Power - Beam (NOT sweep) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

BEAMPOWER-BEAMPOWER

Twin beam-power transmitting tube containing two power units in one envelope, designed primarily for push-pull Class-C RF power amplification.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	12.6 V / 800 mA	PARALLEL HEATER	6.3 V / 1.6 A
HEATING	Indirect	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
MAXIMUM PLATE VOLTAGE	425 V
MAXIMUM PLATE DISSIPATION	10 W
MAXIMUM SCREEN DISSIPATION	5 W
Source-derived section; identical dual beam-power sections compressed where applicable.	

SECTION2 Beam Power	
MAXIMUM PLATE VOLTAGE	425 V
MAXIMUM PLATE DISSIPATION	10 W
MAXIMUM SCREEN DISSIPATION	5 W
Second physical beam-power unit; added under physical-section-per-unit policy.	

RCA-832 is a heater-cathode type of transmitting As Plate-Modulated Push-Pull R-F Power Amplifier - tube containing in one envelope two beam power units, Class C Telephony The tube is designed primarily for

use as a push-pull Carrier conditions per tube for use with cmax.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1940 RCA

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1940 RCA

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
from RMA release #	1943 mA	from RMA release #347, Sept. 24, 1943
RCA	832 A	RCA-832 is a heater-cathode type of transmitting As Plate-Modulated Push-Pull R-F Power Amplifier -
r--f power amplifier with maximum ratings at frequen-- factor of	1 A	r--f power amplifier with maximum ratings at frequen-- factor of 1.0
cies as high as	425 V	cies as high as 200 megacycles and with reduced ratings D-C PLATE VOLTAGE 425 max. Volts
at frequencies as high as	250 MHz	at frequencies as high as 250 Mc., Its total plate D-C SCREEN VOLTAGE (Grid No, 2) 250 max. Volts
D~C GRID VOLTAGE (Grid No	-100 V	D~C GRID VOLTAGE (Grid No.1) -100 max. Volts
dissipation is	68 W	dissipation is 5 watts for class C telegraph service. D-C PLATE CURRENT 68 max. Ma.
Neutralization of the tube is unnecessary in adequately	6 mA	Neutralization of the tube is unnecessary in adequately 0-C GRID CURRENT 6 max. Ma.
PLATE INPUT	22 W	PLATE INPUT 22 max. Watts
shielded circuits. SCREEN NPUT	3.4 W	shielded circuits. SCREEN NPUT 3.4 max. Watts
PLATE DISSIPATION	10 W	PLATE DISSIPATION 10 max. Watts
D-C Plate voltage	425 V	D-C Plate voltage 325 425 volts
compact structure of the beam power units, excellent from a fixed supply of	200 V	compact structure of the beam power units, excellent from a fixed supply of 210 200 volts
from a series resistor of**	14000 ohm	from a series resistor of** 7700 14000 ohms

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
internal leads are short and heavy in order to minimize from a fixed supply of	-60 V	internal leads are short and heavy in order to minimize from a fixed supply of -50 -60 Volts
from @ grid resistor o(	25000 ohm	from @ grid resistor o(21000 25000 ohms
internal lead inductance. The terminal!! arrangement Peak R-F Grid-to-Grid voltage	140 V	internal lead inductance. The terminal!! arrangement Peak R-F Grid-to-Grid voltage 100 140 Volts
provides excellent insulation and s designed to faci- D-C Plate Current	52 mA	provides excellent insulation and s designed to faci- D-C Plate Current 68 52 Ma.
0-C Screen Current 15 16 Ma.	16 mA	0-C Screen Current 15 16 Ma.
litate symmetry of circuit layout. D~C Grid Current {Approx.}	2.4 mA	litate symmetry of circuit layout. D~C Grid Current {Approx.} 2.4 2.4 Ma.
Driving Power (Approx,)	0.15 W	Driving Power (Approx,) 0.11 0.15 Watt
The heaters are arranged to allow operation from Power Output (Approx.)	16 W	The heaters are arranged to allow operation from Power Output (Approx.) 12 16 Watts
either a	3 V	either a 12.6- or a 6,3volt supply.
D~C PLATE VOLTAGE	500 V	D~C PLATE VOLTAGE 500 max. volts
HEATER (A.C. or D.C.): D-C SCREEN VOLTAGE (Grid No,	250 V	HEATER (A.C. or D.C.): D-C SCREEN VOLTAGE (Grid No,2) 250 ®ax. Volts
voltage per Unit	6.3 V	voltage per Unit 6.3 Volts
D-C GRID VOLTAGE (Grid No	100 V	D-C GRID VOLTAGE (Grid No.1} =100 max. Volts
Current per Unit	90 A	Current per Unit 0.8 Ampere D-C PLATE CURRENT 90 max. Ma.
30 ma. 3500 approx. Micromhos PLATE INPUT 36 max. Watts	36 mA	30 ma. 3500 approx. Micromhos PLATE INPUT 36 max. Watts
GRID-SCREEN MU-FACTOR A SCREEN INPUT	5 W	GRID-SCREEN MU-FACTOR A SCREEN iNPUT 5 max. Watts
DIRECT INTERELECTRODE CAPACITANCES (Each unit): PLATE DISSIPATION	15 W	DIRECT INTERELECTRODE CAPACITANCES (Each unit): PLATE DISSIPATION 15 max. Watts
shielding)	500 V	shielding) 0.05 max. puf D~-C Plate Voltage 400 500 voits
Input	7.5 V	Input 7.5 puf D-C Screen Voltage:
output	200 V	output 3.8 yuft from a fixed supply 250 200 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
condenser)	-65 pF	condenser) 65 approx. uuf from a fixed supply of =60 -65 Volts
BULB T	25000 ohm	BULB T-16 from a grid resistor of 20000 25000 Ohms
RCA SOCKET See INSTALLATION Jfrom a cathode resistor of	730 ohm	RCA SOCKET See INSTALLATION Jfrom a cathode resistor of 540 730 ohms
Peak R-F Grid-to-Grid voltage	150 V	Peak R-F Grid-to-Grid voltage 124 150 volts
MAXIMUM CCS RATINGS and TYPICAL OPERATING CONDITIONS D-C Plate Current	72 mA	MAXIMUM CCS RATINGS and TYPICAL OPERATING CONDITIONS D-C Plate Current 90 72 Ma.
0-C Screen Current 18 13 Ma.	13 mA	0-C Screen Current 18 13 Ma.
CCS = Continuous Commercial Service	2.6 mA	CCS = Continuous Commercial Service 0-C Grid Current (Approx.) 3 2.6 Ma,
Maximum Ratings Are Absolute Values Driving Power (Approx,)	0.18 W	Maximum Ratings Are Absolute Values Driving Power (Approx,) 0.18 0.18 Watt
Power Output (Approx.)	26 W	Power Output (Approx.) 22 26 Watts
Class C Telephony ohms (total} per tube, or	50000 ohm	Class C Telephony ohms (total} per tube, or 50000 ohms per unit. If ad-
D~C PLATE VOLTAGE	500 V	D~C PLATE VOLTAGE 500 magx. Volts "*" Connected to modulated plate-voltage supply.
2) 250 max. Volts ## Modulation essentially negative may be used if th	250 V	2) 250 max. Volts ## Modulation essentially negative may be used if the
D-C GRID VOLTAGE (Grid No	-100 V	D-C GRID VOLTAGE (Grid No.1) -100 max. Volts positive peak of the audio-frequency envelope does
D-C PLATE CURRENT	115 mA	D-C PLATE CURRENT 55 max. Ma. not exceed 115% of the carrier conditions.
SCREEN INPUT	3.4 W	SCREEN INPUT 3.4 nax. Watts
PLATE DISSIPATION	15 W	PLATE DISSIPATION 15 @max. Watts
D-C Plate Voltage	832 V	D-C Plate Voltage 400 500 Voits The 832 may be mounted by means of a special socket
D-C Screen Voliage	200 V	D-C Screen Voliage 250 200 Volts
D-C Grid voltage	55 V	D-C Grid voltage -60 «55 Volts having floating contacts, such as the RCA stock Nos.
Peak R-F Grid-to-Grid Voltage	106 V	Peak R-F Grid-to-Grid Voltage 110 100 volts 9934 or 9935. No. 9934 (UT-106) is made for use at

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak A-F Grid voltage	107 V	Peak A-F Grid voltage 14 14 Volts frequencies below 60 Mc; No. 9935 {UT-107) has built-
D-C Plate Current	55 mA	D-C Plate Current 55 Py Ma.
0-C Screen Current 6 3 Ma. in by-pass condensers for the heater and th	3 mA	0-C Screen Current 6 3 Ma. in by-pass condensers for the heater and the screen
0-C Grid Current (Apprax.) 0 0 Ma, and is designed for use at frequenc	60 mA	0-C Grid Current (Apprax.) 0 0 Ma, and is designed for use at frequencies above 60 Mc.
Drivng Power (Approx.)	0.1 W	Drivng Power (Approx.) 0.1 0.1 Watt
Power Output (Approx.)	8 W	Power Output (Approx.) 7.6 8 Watts The plate terminals take clips with flexible leads.
seals. The	832 V	seals. The 832 may be mounted in any position. separate source or from a voltage divider of good
series operation from a	12.6 V	series operation from a 12.6~-volt supply or parallel
operation from a	6.3 V	operation from a 6.3-volt supply. Under any condition Shielding of the r—f amplifier stage employing the
of operation, the heater voltage should not deviate	832 V	of operation, the heater voltage should not deviate 832 is required for stable operation. A convenient
not exceed	100 V	not exceed 100 volts. If the use of a large resistor necessary in order to realize the full capabilities of
in the tube and by-passed by means of a	65 pF	in the tube and by—passed by means of a 65-upf conden— circuit returns are made to the common cathode connec—
832 can be modulated 100%. The screen voltage may be screen voltage ma	100 V	832 can be modulated 100%. The screen voltage may be screen voltage may also be obtained from the plate-
plate supply. The screen voltage must be modulated that the screen voltage will not exceed	600 V	plate supply. The screen voltage must be modulated that the screen voltage will not exceed 600 volts
Modulation of a fixed screen —voltage supply can be ac- RCA	832 V	Modulation of a fixed screen—voltage supply can be ac- RCA-832 may be operated at maximum ratings in all
grid resistor and fixed supply or grid resistor and frequencies up to	250 MHz	grid resistor and fixed supply or grid resistor and frequencies up to 250 Mc.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
FREQUENCY	20 MHz	FREQUENCY 200 20 Mc
grid-mod. class C r-f amplifier	94 A	grid-mod. class C r-f amplifier 100 94 Per Cent
In class C r-f telegraph service, the	89 A	In class C r-f telegraph service, the 832 may be plate-mod. class C r-f amplifier 100 89 Per Cent
supplied with screen voltage from a fixed supply such class C telegraphy	89 V	supplied with screen voltage from a fixed supply such class C telegraphy 100 89 Per Cent
POWER OUTPUT	2 W	POWER OUTPUT 12 WATTS (APPROX.) AT 2 METERS
C4=	12 V	C4= 25 Jf, 200 VOLTS L3:L4= 12DIA.COPPER TUBING,
C5,Cg =	10 pF	C5,Cg = 3 TO 35 JUpF APPROX. 10" LONG AND
R;=	1 ohm	R;=10000 TO 20000 OHMS, WATT SPACED 1" BETWEEN
R2=	5 ohm	R2=300 OHMS, 5 WATTS
R3=	12 ohm	R3= 7500 OHMS, SWATTS APPROX. 12"LONG_AND

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
TRANSCONDUCTANCE, For plate cur. of D-C GRID CURRENT	6 mA	TRANSCONDUCTANCE, For plate cur. of D-C GRID CURRENT 6 @aX. Ma.
SCREEN-CATHODE CAPACITANCE (Including from a series resistor of	21000 ohm	SCREEN-CATHODE CAPACITANCE (Including from a series resistor of 8300 21000 ohms
As Grid-Modulated Push-Pull R-F Power Amplifier - ¥ The grid-circuit resistance should never exceed	25000 A	As Grid~Modulated Push-Pull R-F Power Amplifier - ¥ The grid-circuit resistance should never exceed 25000
allowed to attain a temperature corresponding to protective resistanceof about	2000 ohm	allowed to attain a temperature corresponding to protective resistanceof about 2000 ohms in series