

ELECTRONIC TUBE REFERENCE

4E27A

Power - Beam (NOT sweep) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

Higher-dissipation 4E27 transmitting tube for RF amplification, oscillator and modulator service, capable of hundreds of watts Class-C RF output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	5 V / 7.5 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
TRANSCONDUCTANCE	0.00215 S
MAXIMUM PLATE VOLTAGE	4000 V
MAXIMUM SCREEN VOLTAGE	750 V
MAXIMUM PLATE DISSIPATION	125 W
MAXIMUM SCREEN DISSIPATION	20 W
MAXIMUM GRID DISSIPATION	5 W
Single electrical section; values mapped from printed ratings/characteristics.	

Higher-dissipation beam power transmitting tube for AF/RF amplifier, modulator, and oscillator service.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1956 RCA Transmitting Tubes

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

1956 RCA TRANSMITTING TUBES

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum full-rating frequency	75 MHz	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 Eimac

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

1962 EIMAC

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The Eimac	5.125 a	The Eimac 4E27A/5.125B is a power pentode intended for use as a modulator, oscillator or
eliminated entirely. The tube has a maximum plate-dissipation rating of	125 a	eliminated entirely. The tube has a maximum plate-dissipation rating of 125 watts and a maximum
plate voltage rating of	75 volts	plate voltage rating of 4000 volts at frequencies up to 75 Mc. Cooling is by convection and radia-
The	375 watts	The 4E27A/5-125B in class-C r-f service will deliver up to 375 watts plate power output with
less than	75 watts	less than 2 watts driving power. It will deliver up to 75 watts of carrier for suppressor modulation.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Two	300 watts	Two 4E27A/5-125B's will deliver up to 300 watts maximum-signal plate power output in class
AB, modulator service,	400 watts	AB, modulator service, 400 watts in class AB, with less than 1 watt driving power.
Voltage	5 volts	Voltage 5.0 volts
Current	1.5 amperes	Current - - - 1.5 amperes
Zero Suppressor Volts,	500 Volts	Zero Suppressor Volts, 500 Screen Volts
OR OSCILLATOR D.C Plate Voltage	3000 volts	OR OSCILLATOR D.C Plate Voltage - - - 1000 2000 2500 3000 volts
Class-C Telegraphy or FM Telephony, Frequencies up to	200 volts	Class-C Telegraphy or FM Telephony, Frequencies up to 75 Me. D-C Grid Voltage - - - -120 -150 -170 -200 volts
{Key-down conditions, per tube) D-C Plate Current	167 ma	{Key-down conditions, per tube) D-C Plate Current - - - 145 200 184 167 ma
MAXIMUM RATINGS D-C Screen Current* - - - t	12 ma	MAXIMUM RATINGS D-C Screen Current* - - - t7 23 8 12 ma
D-C PLATE VOLTAGE	9 VOLTS	D-C PLATE VOLTAGE - 4000 MAX. VOLTS D-C Grid Current* . - . I3 I 9 ma
D-C SCREEN VOLTAGE	270 VOLTS	D-C SCREEN VOLTAGE - 750 MAX. VOLTS Peak R-F Grid Input Voltage - 170 240 250 270 volts
D-C GRID VOLTAGE - -	1.9 watts	D-C GRID VOLTAGE - -500 MAX. VOLTS Driving Power* - - - 1.0 26 23 1.9 watts
D-C PLATE CURRENT	8 MA	D-C PLATE CURRENT - 200 MAX. MA Grid Dissipation® - - - - 3 1.0 .8 watts
PLATE DISSIPATION	9 WATTS	PLATE DISSIPATION - 125 MAX. WATTS Screen Dissipation* - - - . 85 12 9 watts
SUPPRESSOR DISSIPATION	125 WATTS	SUPPRESSOR DISSIPATION . 20 MAX. WATTS Plate Dissipation - - - - S5 125 125 125 watts
SCREEN DISSIPATION	460 WATTS	SCREEN DISSIPATION - 20 MAX, WATTS Plate Power Input - - - - 148 400 460 watts
GRID DISSIPATION	375 WATTS	GRID DISSIPATION - 5 MAX. WATTS Plate Power Output - . - 90 275 335 375 watts
D-C Plate Voltage	3000 volts	D-C Plate Voltage 1000 1500 2000 2500 3000 volts D-C Plate Voltage - - - - 1000 1500 2000 2500 3000 volts
D-C Grid Voltage - o	225 volts	D-C Grid Voltage - o120 -130 -150 -170 -200 volts D-C Grid Voltage - - - - -170 -180 -200 -225 volts
D-C Plate Current	167 ma	D-C Plate Current - - 167 200 200 186 187 ma D-C Plate Current - - - - 160 200 200 186 167 ma

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D-C Suppressor Current® [	12 ma	D-C Suppressor Current® [- 4 3 3 ma D-C Screen Current* - - - 21 24 22 12 ma
D-C Screen Current* - n H]	4 ma	D-C Screen Current* - n H] 7 S ma 0-C Grid Current* - - 3] 4 ma
D-C Grid Current*	270 ma	D-C Grid Current* 6 8 8 7 6 ma Peak R-F Grid Input Voltage - 208 257 270 volts
Peak R-F Grid Input Voltage	260 volts	Peak R-F Grid Input Voltage 170 200 222 240 260 volts
Driving Power*	1.6 watts	Driving Power* 1.0 1.6 1.8 1.7 1.6 watts
Grid Dissipation*	2 watts	Grid Dissipation* 3 K3 K 5 6 watts Grid Dissipation* - - A 3 2 watts
Screen Dissipation*	9 watts	Screen Dissipation* 5.5 55 & 5 35 25 watts Screen Dissipation* - - - 16 17 9 watts
Plate Dissipation	125 watts	Plate Dissipation - 47 85 100 115 125 watts Plate Dissipation - - - - 45 100 115 125 watts
Plate Power Input	500 watts	Plate Power Input - 167 300 400 485 500 watts Plate Power Input - - - 160 300 400 445 500 watts
Plate Power Output	375 watts	Plate Power Output 120 215 300 350 75 watts Plate Power Output - - - Hs 218 300 350 375 watts
(Effective	1968 A	(Effective 8-15-52) c 1968 by Varian Printed in U.S.A.
Zero Suppressor Volts,	500 Volts	Zero Suppressor Volts, 500 Screen Volts
Class-C Telephony, Frequencies up to	2500 volts	Class-C Telephony, Frequencies up to 75 Mc. D-C Plate Voltage - - - - {000 1500 2000 2500 volts
D-C Plate Current	152 ma	D-C Plate Current - - - - 149 150 IS1 152 ma
MAXIMUM RATINGS D-C Screen Current* <	16 ma	MAXIMUM RATINGS D-C Screen Current* < - - - 20 18 17 16 ma
D-C PLATE VOLTAGE	8 VOLTS	D-C PLATE VOLTAGE - - - 3200 MAX. VOLTS D-C Grid Current* . - - - 7 7 8 8 ma
D-C SCREEN VOLTAGE	750 VOLTS	D-C SCREEN VOLTAGE - - . 750 MAX. VOLTS (modulation)
i - e	350 volts	i - e . - 380 350 350 350 volts
D-C GRID VOLTAGE	275 volts	D-C GRID VOLTAGE - . . - 500 MAX. VOLTS Peak R-F Grid Input Voltage - . 20 265 270 275 volts
D-C PLATE CURRENT	2 MA	D-C PLATE CURRENT - - - 160 MAX, MA Driving Power* - - - - 2 2 2 2 watts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PLATE DISSIPATION	5 WATTS	PLATE DISSIPATION - - - . 85 MAX, WATTS Grid Dissipation® - - - - - 05 05 05 05 waths
SUPPRESSOR DISSIPATION	20 WATTS	SUPPRESSOR DISSIPATION - - 20 MAX. WATTS payba o/
SCREEN DISSIPATION	380 WATTS	SCREEN DISSIPATION - - - 20 MAX. WATTS Plate Power Input - - - - . 149 225 300 380 watts
GRID DISSIPATION	295 WATTS	GRID DISSIPATION - - - - 5 MAX. WATTS Plate Power Output - - . . - 85 53 220 295 watts
RADIO-FREQUENCY AMPLIFIER D-C Plate Voltage - - - - - [S	3000 volts	RADIO-FREQUENCY AMPLIFIER D-C Plate Voltage - - - - - [S00 2000 2500 3000 volts
Class-C Telephony Frequencies up to	350 volts	Class-C Telephony Frequencies up to 75 Mc D-C Suppressor Voltage - - - - =220 --260 —305 — 350 volts
{Carrier conditions, per tube, unless otherwise specified) * (	350 volts	{Carrier conditions, per tube, unless otherwise specified) * (100% fi;fi:iron)o aq-. - - - 220 260 305 350 volts
MAXIMUM RATINGS D-C Screen Voltage	400 volts	MAXIMUM RATINGS D-C Screen Yoltage - - - - - 400 400 400 400 volts
Fixed D-C Screen VYoltage	610 volts	Fixed D-C Screen VYoltage - - - 610 645 650 610 volts
D-C PLATE VOLTAGE	8300 ohms	D-C PLATE VOLTAGE - - - 4000 MAX. YOLTS Screen Dropping Resistor! - - - 5500 910010,000 8300 ohms
D-C Grid Voltage - - - - - ~I	200 volts	D-C Grid Voltage - - - - - ~I70 ~180 — 90 — 200 volts
D-C SCREEN VOLTAGE	0 ma	D-C SCREEN VOLTAGE - - - 750 MAX. YOLTS D-C Plate Current - - - . - & 59 5 &0 ma
D-C Screen Current*	25 ma	D-C Screen Current* - - - - 38 27 25 25 ma
D-C GRID VOLTAGE - - - - =	4 ma	D-C GRID VOLTAGE - - - - =500 MAX. YOLTS D-C Grid Current* - - - . . . 5 5 4 ma
D-C PLATE CURRENT - . R	250 MA	D-C PLATE CURRENT - . R 200 MAX. MA Peak R-F Grid Input Voliage - - - 230 235 245 250 volts
Driving Power®	1.2 watts	Driving Power® - - - - - 14 13 12 1.2 watts
PLATE DISSIPATION	20 WATTS	PLATE DISSIPATION - - - - 126 MAX, WATTS Grid Dissipation* -« -« ~ 35 25 25 .20 watts
Screen Dissipation* - - - - - i	10 watts	Screen Dissipation* - - - - - i5 1 10 10 watts
SUPPRESSOR DISSIPATION	105 WATTS	SUPPRESSOR DISSIPATION - 20 MAX. WATTS blate Dissipation T T s s 8 105 waths

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
SCREEN DISSIPATION	7 WATTS	SCREEN DISSIPATION - . - 20 MAX. WATTS plate Power Output - 15 B0 81 7 watts
GRID DISSIPATION	1 WATTS	GRID DISSIPATION - - - - 5 MAX. WATTS 1 Adjust to stated d-φ screen voltage.
OR MODULATOR D-C Plate Voltage	2500 volts	OR MODULATOR D-C Plate Voltage - - - - - 1500 2000 2500 volts
Class-AB, Sinusoidal Wave D-C Suppressor Voltage	0 volts	Class-AB, Sinusoidal Wave D-C Suppressor Voltage - - - - 0 0 0 volts
D-C Screen Voltage - - B	500 volts	D-C Screen Voltage - - B - - 500 500 500 volts
MAXIMUM RATINGS (Per Tube) D-C Grid Voltage! N	85 volts	MAXIMUM RATINGS (Per Tube) D-C Grid Voltage! N -70 —80 —85 volts
Zero-Signal D-C Plate Current	65 ma	Zero-Signal D-C Plate Current - . 110 85 65 ma
D-C PLATE VOLTAGE)))	220 VOLTS	D-C PLATE VOLTAGE))) 4000 MAX. VOLTS Max-Signal D-C Plate Current - 205 210 220 ma
Max-Signal D-C Screen Current*	8 ma	Max-Signal D-C Screen Current* - - 1S 13 8 ma
D-C GRID VOLTAGE	0 ohms	D-C GRID VOLTAGE - - - - -500 MAX. VOLTS Effective Plate-to-Plate load - - - 13,700 18,00020,000 ohms
Peak A-F Grid Voltage {per tube}	85 A	Peak A-F Grid Voltage {per tube} - 70 80 85 volts
D-C PLATE CURRENT	0 MA	D-C PLATE CURRENT - - - 200 MAX. MA Max- Signal Driving Power* - - 0 0 0 watts
PLATE DISSIPATION	300 WATTS	PLATE DISSIPATION - - - - 125 MAX. WATTS Max-Signal Plate Power Output - . 200 250 300 watts
SUPPRESSOR DISSIPATION	20 WATTS	SUPPRESSOR DISSIPATION - - 20 MAX. WATTS i Adjust fo stated
SCREEN DISSIPATION	20 WATTS	SCREEN DISSIPATION - - - 20 MAX. WATTS TYPICAL OPERATION (Two tubes unless otherwise specified)
GRID DISSIPATION	5 WATTS	GRID DISSIPATION . . . - 5 MAX. WATTS Class- AB,
D-C Plate Voltage - - - B	2500 volts	D-C Plate Voltage - - - B - 1500 2000 2500 volts
D-C Suppressor Voltage	0 volts	D-C Suppressor Voltage - - - - 60 0 0 volts
D-C Screen Voltage	500 volts	D-C Screen Voltage - - - - - 500 500 500 volts
D-C Grid Voltage! - - - ~	5 volts	D-C Grid Voltage! - - - ~70 ~-80 ~B85 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Zero-Signal D-C Plate Current	65 ma	Zero-Signal D-C Plate Current - - 110 85 65 ma
Max-Signal D-C Plate Current	250 ma	Max-Signal D-C Plate Current - - 35 295 250 ma
Zero-Signal D-C Screen Current*	0 ma	Zero-Signal D-C Screen Current* - - 0 0 0 ma
Max-Signal D-C Screen Current* - - h	13 ma	Max-Signal D-C Screen Current* - - h 16 13 ma
Effective Plate-to-Plate Load	0 ohms	Effective Plate-to-Plate Load - - - 730013,00020,000 ohms
Peak A-F Grid Input Voltage (per tube)	95 A	Peak A-F Grid Input Voltage (per tube) - 100 100 95 volts
Max-Signal Driving Power*	2 watts	Max-Signal Driving Power* - - - 05 03 02 watts
Max-Signal Plate Power Input	625 watts	Max-Signal Plate Power Input - - 650 590 625 watts
Max-Signal Plate Power Output	400 watts	Max-Signal Plate Power Output - - 300 356 400 watts
Cooling —A heat dissipating connector (Eimac HR	20 A	Cooling —A heat dissipating connector (Eimac HR-5 or equivalent of the 20 watt maximum rating. The tube may be protected
or when the flow of air is restricted, it may become necessary Plate Dissipation —Plate di	25 watt	or when the flow of air is restricted, it may become necessary Plate Dissipation —Plate dissipation in excess of the [25-watt
value of	5 volts	value of 5.0 volts. Variations should be held within the range of tube. Power-supply leads entering the amplifier should be by-
Grid Voltage —Although a maximum of —	500 a	Grid Voltage —Although a maximum of —500 volts bias may be antenna feeders should be arranged so as to preclude any
SCREEN VOLTAGE =	500 VOLTS	SCREEN VOLTAGE = 500 VOLTS
SUPPRESSOR VOLTAGE =	0 VOLTS	SUPPRESSOR VOLTAGE = 0 VOLTS

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