



ELECTRONIC TUBE REFERENCE

465A

Power - Tetrode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TETRODE

Fast-heating thoriated-tungsten transmitting tetrode designed for mobile RF service. Its rapid warm-up supports radio-frequency power equipment requiring quick availability.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	5
NOMINAL HEATER	6 V / 3.5 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Tetrode	
TRANSCONDUCTANCE	0.004 S
AMPLIFICATION FACTOR	6
MAXIMUM PLATE VOLTAGE	3000 V
MAXIMUM SCREEN VOLTAGE	600 V
MAXIMUM PLATE DISSIPATION	65 W
MAXIMUM SCREEN DISSIPATION	10 W
MAXIMUM GRID DISSIPATION	5 W
MAXIMUM CATHODE CURRENT	150 mA
<i>Promoted maximum ratings/characteristics populated from published headings; service-specific values retained in parameters.</i>	

Fast-heating thoriated-tungsten transmitting tetrode for mobile RF 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 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum full-rating frequency	50 MHz	—
Reduced-rating frequency	250 MHz	—

SOURCE OPERATING CONDITIONS

1962 Eimac

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

1962 EIMAC

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
dissipation rating of	65 W	dissipation rating of 65 watts. In most applications, no forced air is required, normal
and permitting the conservation of power during standby periods. The [1]	8165	and permitting the conservation of power during standby periods. The 8165/4-65A is,
and permitting the conservation of power during standby periods. The [2]	4	and permitting the conservation of power during standby periods. The 8165/4-65A is,
and permitting the conservation of power during standby periods. The [3]	-65	and permitting the conservation of power during standby periods. The 8165/4-65A is,
Voltage	6 V	Voltage - - - - - 6.0 volts
Current [1]	3.2 A	Current - - - - - 3.2 3.8 amperes
Current [2]	3.8 A	Current - - - - - 3.2 3.8 amperes
Grid-Screen Amplification Factor [1]	5	Grid-Screen Amplification Factor - - - - . 5 7

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-Screen Amplification Factor [2]	7	Grid-Screen Amplification Factor - - - - . 5 7
Input [1]	6 pF	Input - - - - - 6.0 8.3 uuf
Input [2]	8.3 pF	Input - - - - - 6.0 8.3 uuf
Output [1]	1.9 pF	Output - - - - - 1.9 2.6 uuf
Output [2]	2.6 pF	Output - - - - - 1.9 2.6 uuf
Frequency for Maximum Ratings	150	Frequency for Maximum Ratings - - - - - 150 me
RADIO-FREQUENCY POWER AMPLIFIER TYPICAL OPERATION (Frequencies up to	150 MHz	RADIO-FREQUENCY POWER AMPLIFIER TYPICAL OPERATION (Frequencies up to 150 megacycles)
Telegraphy or FM Telephony Voltage [1]	-105	Telegraphy or FM Telephony Voltage - - - --105 —105 ~105
Telegraphy or FM Telephony Voltage [2]	-105	Telegraphy or FM Telephony Voltage - - - --105 —105 ~105
Telegraphy or FM Telephony Voltage [3]	105	Telegraphy or FM Telephony Voltage - - - --105 —105 ~105
MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o5 [1]	0 mA	MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o500 137 124 112 ma
MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o5 [2]	137 mA	MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o500 137 124 112 ma
MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o5 [3]	124 mA	MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o500 137 124 112 ma
MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o5 [4]	112 mA	MAXIMUM RATINGS {Key-down conditions) D-C Plate Current - - - o500 137 124 112 ma
D-C PLATE VOLTAGE [1]	3000 V	D-C PLATE VOLTAGE - - - - 3000 MAX. VOLTS D-C Screen Current* - - - ¥ 3 2% nma
D-C PLATE VOLTAGE [2]	3 V	D-C PLATE VOLTAGE - - - - 3000 MAX. VOLTS D-C Screen Current* - - - ¥ 3 2% nma
D-C PLATE VOLTAGE [3]	2 V	D-C PLATE VOLTAGE - - - - 3000 MAX. VOLTS D-C Screen Current* - - - ¥ 3 2% nma
D-C SCREEN VOLTAGE [1]	400 mA	D-C SCREEN VOLTAGE - - - 400 MAX. YOLTS D-C Grid Current* - - - . 19 15 13 9 ma
D-C SCREEN VOLTAGE [2]	19 mA	D-C SCREEN VOLTAGE - - - 400 MAX. YOLTS D-C Grid Current* - - - . 19 15 13 9 ma
D-C SCREEN VOLTAGE [3]	15 mA	D-C SCREEN VOLTAGE - - - 400 MAX. YOLTS D-C Grid Current* - - - . 19 15 13 9 ma
D-C SCREEN VOLTAGE [4]	13 mA	D-C SCREEN VOLTAGE - - - 400 MAX. YOLTS D-C Grid Current* - - - . 19 15 13 9 ma
D-C SCREEN VOLTAGE [5]	9 mA	D-C SCREEN VOLTAGE - - - 400 MAX. YOLTS D-C Grid Current* - - - . 19 15 13 9 ma

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D-C GRID VOLTAGE [1]	-500 V	D-C GRID VOLTAGE - - - —500 MAX. YOLTS Peak R-F Grid Voltage* - - - 205 195 185 175 volts
D-C GRID VOLTAGE [2]	205 V	D-C GRID VOLTAGE - - - —500 MAX. YOLTS Peak R-F Grid Voltage* - - - 205 195 185 175 volts
D-C GRID VOLTAGE [3]	195 V	D-C GRID VOLTAGE - - - —500 MAX. YOLTS Peak R-F Grid Voltage* - - - 205 195 185 175 volts
D-C GRID VOLTAGE [4]	185 V	D-C GRID VOLTAGE - - - —500 MAX. YOLTS Peak R-F Grid Voltage* - - - 205 195 185 175 volts
D-C GRID VOLTAGE [5]	175 V	D-C GRID VOLTAGE - - - —500 MAX. YOLTS Peak R-F Grid Voltage* - - - 205 195 185 175 volts
D-C PLATE CURRENT - - w [1]	150 mA	D-C PLATE CURRENT - - w . 150 MAX. MA Driving Power* - - - - 39 29 24 1.6 watts
D-C PLATE CURRENT - - w [2]	39 mA	D-C PLATE CURRENT - - w . 150 MAX. MA Driving Power* - - - - 39 29 24 1.6 watts
D-C PLATE CURRENT - - w [3]	29 mA	D-C PLATE CURRENT - - w . 150 MAX. MA Driving Power* - - - - 39 29 24 1.6 watts
D-C PLATE CURRENT - - w [4]	24 mA	D-C PLATE CURRENT - - w . 150 MAX. MA Driving Power* - - - - 39 29 24 1.6 watts
D-C PLATE CURRENT - - w [5]	1.6 mA	D-C PLATE CURRENT - - w . 150 MAX. MA Driving Power* - - - - 39 29 24 1.6 watts
PLATE DISSIPATION - - - . & [1]	5 W	PLATE DISSIPATION - - - . &5 MAX. WATTS Plate Input Power - - - 205 275 310 335 watts
PLATE DISSIPATION - - - . & [2]	205 W	PLATE DISSIPATION - - - . &5 MAX. WATTS Plate Input Power - - - 205 275 310 335 watts
PLATE DISSIPATION - - - . & [3]	275 W	PLATE DISSIPATION - - - . &5 MAX. WATTS Plate Input Power - - - 205 275 310 335 watts
PLATE DISSIPATION - - - . & [4]	310 W	PLATE DISSIPATION - - - . &5 MAX. WATTS Plate Input Power - - - 205 275 310 335 watts
PLATE DISSIPATION - - - . & [5]	335 W	PLATE DISSIPATION - - - . &5 MAX. WATTS Plate Input Power - - - 205 275 310 335 watts
SCREEN DISSIPATION - - N [1]	10 W	SCREEN DISSIPATION - - N . 10 MAX. WATTS Plate Output Power - - - . 140 210 245 270 watts
SCREEN DISSIPATION - - N [2]	140 W	SCREEN DISSIPATION - - N . 10 MAX. WATTS Plate Output Power - - - . 140 210 245 270 watts
SCREEN DISSIPATION - - N [3]	210 W	SCREEN DISSIPATION - - N . 10 MAX. WATTS Plate Output Power - - - . 140 210 245 270 watts
SCREEN DISSIPATION - - N [4]	245 W	SCREEN DISSIPATION - - N . 10 MAX. WATTS Plate Output Power - - - . 140 210 245 270 watts
SCREEN DISSIPATION - - N [5]	270 W	SCREEN DISSIPATION - - N . 10 MAX. WATTS Plate Output Power - - - . 140 210 245 270 watts
GRID DISSIPATION	5 W	GRID DISSIPATION - - - - 5 MAX. WATTS *Approximate values
PLATE.MODULATED RADIO.FREQUENCY TYPICAL OPERATION (Frequencies up to	150 MHz	PLATE.MODULATED RADIO.FREQUENCY TYPICAL OPERATION (Frequencies up to 150 megacycles)

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AMPLIEIER D-C Plate Voltage [1]	1000 V	AMPLIEIER D-C Plate Voltage - - - 1000 1500 2000 2500 volts
AMPLIEIER D-C Plate Voltage [2]	1500 V	AMPLIEIER D-C Plate Voltage - - - 1000 1500 2000 2500 volts
AMPLIEIER D-C Plate Voltage [3]	2000 V	AMPLIEIER D-C Plate Voltage - - - 1000 1500 2000 2500 volts



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Amperex Condensed

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

1963 AMPEREX CONDENSED

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	3000 V	RFPowerAmplifier
Plate current	115 mA	RFPowerAmplifier
Power output	280 W	RFPowerAmplifier
Control-grid voltage	-100 V	RFPowerAmplifier
Grid current	5 mA	RFPowerAmplifier
Screen voltage	400 V	RFPowerAmplifier
Maximum frequency at full input	150 MHz	RFPowerAmplifier

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	0.08 pF	Section1
Output capacitance	2.1 pF	Section1



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Eimac Tube Manual

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

1965 EIMAC TUBE MANUAL

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	6 V	—
Heater/filament current	3.5 A	—
Amplification factor	5	—
Transconductance	4000 uS	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Input/grid-cathode capacitance	8 pF	—
Output/plate-cathode capacitance	2.1 pF	—
Feedback/grid-plate capacitance	0.08 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	3000 V	—
Maximum screen voltage	600 V	—
Maximum plate dissipation	65 W	—
Maximum screen dissipation	10 W	—
Maximum grid dissipation	5 W	—
Maximum plate/cathode current	150 mA	—
Frequency for maximum ratings	110 MHz	—
SSB maximum plate voltage	2500 V	SSB
SSB maximum plate current	120 mA	SSB
Typical screen voltage	250 V	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

1965 Penta Labs Power Tubes

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

1965 PENTA LABS POWER TUBES

Section 1 · Tetrode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater/filament voltage	6 V	—
Heater/filament current	3.5 A	—
Amplification factor	5	—
Transconductance	4000 μ S	—
Quick-heating filament	Yes	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	3000 V	—
Maximum screen voltage	600 V	—
Maximum plate dissipation	65 W	—
Maximum control-grid dissipation	5 W	—
Source language	English	—
Maximum frequency at full input	150 MHz	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-plate capacitance	0.08 pF	—
Input capacitance	7.5 pF	—
Output capacitance	2.2 pF	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Primary application	Quick-heating 65 W power tetrode for RF/audio amplifier and modulator service.	—

CONSTRUCTION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cooling	Radiation/convection or source-specific	—
Electrode structure	Tetrode	—