



ELECTRONIC TUBE REFERENCE

51

Voltage Tetrode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TETRODE

Tetrode documented in Raytheon receiving-tube sources. Available manufacturer material in the current record does not establish a narrower functional application confidently enough for recategorization.

GENERAL CHARACTERISTICS

BASE DESIGNATION	5E	BASE PINS	5
NOMINAL HEATER	2.5 V / 1.75 A	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Tetrode	
PLATE RESISTANCE	400000 Ω
TRANSCONDUCTANCE	0.00105 S
MAXIMUM PLATE VOLTAGE	275 V
MAXIMUM SCREEN VOLTAGE	90 V
<i>Promoted from clearly identified printed ratings/characteristics; additional published operating points and capacitances retained in TUBE_SECTION_PARAMETER.</i>	

51 is documented by Raytheon as a Tetrode device. Remote-cutoff tetrode high-frequency amplifier/mixer. Published ratings, characteristics, capacitances, and representative operating conditions were preserved where applicable.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1937 Raytheon Radio Receiving Tubes

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

1937 RAYTHEON RADIO RECEIVING TUBES

Section 1 · Tetrode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-to-plate capacitance	—0.007 pF	WithTubeShield; Maximum
Input capacitance	5 pF	—
Output capacitance	10.5 pF	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	180 V	ClassA
Screen voltage	90 V	ClassA; PlateVoltage=180V
Grid bias	-3 V	ClassA; PlateVoltage=180V
Plate current	6.3 mA	ClassA; PlateVoltage=180V
Screen current	2.5 mA	ClassA; PlateVoltage=180V
Plate voltage	250 V	ClassA
Screen voltage	90 V	ClassA; PlateVoltage=250V
Grid bias	-3 V	ClassA; PlateVoltage=250V
Plate current	6.5 mA	ClassA; PlateVoltage=250V
Screen current	2.5 mA	ClassA; PlateVoltage=250V
Grid bias	-7 V	Mixer; Superheterodyne

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	305	ClassA; PlateVoltage=180V
Plate resistance	0.3 MOhm	ClassA; PlateVoltage=180V
Transconductance	1020 uS	ClassA; PlateVoltage=180V
Amplification factor	420	ClassA; PlateVoltage=250V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	0.4 MOhm	ClassA; PlateVoltage=250V
Transconductance	1050 uS	ClassA; PlateVoltage=250V


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1940 RCA

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

1940 RCA

Section 1 · Tetrode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater or filament voltage	2.5 V	Published nominal value
Heater or filament current	1.75 A	Published nominal value
Transconductance	1050 μS	Published representative/high operating value
Amplification factor	420	Published representative/high operating value
Plate resistance	400000 ohm	Published representative/high operating value
Remote-cutoff transconductance	15 μS	At -40 V bias

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	RF amplifier; IF amplifier; mixer	Type 35 source states interchangeability


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

195X General Electric Essential Characteristics

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

195X GENERAL ELECTRIC ESSENTIAL CHARACTERISTICS

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	275 V	Published handbook rating
Maximum screen voltage	90 V	Published handbook rating
Plate voltage	250 V	ClassA
Screen voltage	90 V	ClassA
Control-grid bias	3 V	ClassA
Plate current	6.5 mA	ClassA
Screen current	2.5 mA	ClassA

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	400000 ohm	Published handbook characteristic
Transconductance	1050 μ S	Published handbook characteristic
Heater/filament voltage	2.5 V	Published heater/filament rating
Heater/filament current	1.75 A	Published heater/filament rating