

ELECTRONIC TUBE REFERENCE

52

Voltage - Tetrode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TETRODE

Directly heated tetrode documented in Raytheon receiving-tube sources. Available material confirms tetrode construction but does not establish a narrower functional role confidently.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	5
NOMINAL HEATER	6.3 V / 300 mA	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1	Tetrode
MAXIMUM PLATE VOLTAGE	180 V
Raytheon type 52 directly heated dual-grid tetrode power amplifier for storage-battery receiving equipment, filament 6.3 V, 0.3 A. Five-prong medium base (corrected parent pin count from 7 to 5). Manufacturer maximum plate voltage 180 V. In Class B push-pull, grids 1 and 2 interconnected, plate maximum 180 V, PEAK PLATE current per tube 75 mA, no-signal current 1.5 mA per tube, two-tube power output about 5 W into 10 kΩ plate-to-plate load. This 75 mA peak PLATE current is not a continuous cathode-current maximum; previous max_cathode_current cleared. In Class A with grid 2 tied to plate (triode connection), plate operating 100–110 V, gm 2.7–3.0 mA/V, mu 5.2–5.8, rp 1900–1750 Ω and output 1.2–1.5 W per tube. Triode connection does not create a second physical section; intrinsic tetrode gm/rp/mu kept NULL.	

52 is documented by Raytheon as a Tetrode device. Dual-grid power-amplifier tube usable in Class-B operation with grids tied together or Class-A operation with grid 2 tied to plate. 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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum peak plate current	75 mA	ClassB; PerTube
Plate voltage	180 V	ClassB; PushPull; TwoTubes
Grid 1 and grid 2 bias	0 V	ClassB; PushPull; TwoTubes
No-signal plate current	1.5 mA	ClassB; PerTube
Load resistance plate-to-plate	10000 ohm	ClassB; PushPull; TwoTubes
Power output	5 W	ClassB; PushPull; TwoTubes
Plate voltage	100 V	ClassA; Grid2ConnectedToPlate
Plate current	37 mA	ClassA; PlateVoltage=100V
Load resistance	2000 ohm	ClassA; PlateVoltage=100V
Power output	1.2 W	ClassA; PlateVoltage=100V
Plate voltage	110 V	ClassA; Grid2ConnectedToPlate
Plate current	43 mA	ClassA; PlateVoltage=110V
Power output	1.5 W	ClassA; PlateVoltage=110V

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Amplification factor	5.2	ClassA; PlateVoltage=100V
Plate resistance	1900 ohm	ClassA; PlateVoltage=100V
Transconductance	2700 uS	ClassA; PlateVoltage=100V
Amplification factor	5.8	ClassA; PlateVoltage=110V
Plate resistance	1750 ohm	ClassA; PlateVoltage=110V
Transconductance	3000 uS	ClassA; PlateVoltage=110V

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