

ELECTRONIC TUBE REFERENCE

17C9

Voltage - Radio Detector Converter electronic tube

CONSOLIDATED TECHNICAL DATA
2 SECTIONS
CONSTRUCTION
TETRODE-TETRODE

Sharp-cutoff dual tetrode designed for VHF RF-amplifier and autodyne mixer service in receiver front ends.

GENERAL CHARACTERISTICS

BASE DESIGNATION	10F	BASE PINS	10
NOMINAL HEATER	16.8 V / 150 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

10F - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	B	G1 – Control Grid	CONNECTED
PIN2	B	G2 – Screen Grid	CONNECTED
PIN3	B	P – Plate (Anode)	CONNECTED
PIN4	–	H – Heater	CONNECTED
PIN5	–	H – Heater	CONNECTED
PIN6	A	K – Cathode	CONNECTED
PIN7	A	G1 – Control Grid	CONNECTED
PIN8	A	G2 – Screen Grid	CONNECTED
PIN9	A	P – Plate (Anode)	CONNECTED
PIN10	B	K – Cathode	CONNECTED
PIN10	–	IS – Internal Screen	CONNECTED

SECTION RATINGS

SECTION1 Tetrode	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.008 S
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	180 V
MAXIMUM PLATE DISSIPATION	1.5 W
MAXIMUM SCREEN DISSIPATION	0.5 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Two identical tetrode sections; represented once under identical-section compression.</i>	

SECTION2 Tetrode	
PLATE RESISTANCE	100000 Ω
TRANSCONDUCTANCE	0.008 S
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	180 V
MAXIMUM PLATE DISSIPATION	1.5 W
MAXIMUM SCREEN DISSIPATION	0.5 W
MAXIMUM CATHODE CURRENT	20 mA
<i>Sharp-cutoff tetrode unit No.2.</i>	

17C9 — Sharp-Cutoff Dual Tetrode Vacuum Tube

A miniature, sharp-cutoff dual tetrode designed for VHF RF-amplifier and autodyne mixer applications in electronic equipment.

Overview

The **17C9** is a specialized miniature vacuum tube containing two independent sharp-cutoff tetrode units within a single envelope. It is designed primarily for high-frequency applications, specifically as a Very High Frequency (VHF) RF-amplifier and as an autodyne mixer. The 17C9 is electrically identical to the [6C9](#) except for its heater ratings, which are designed for series-string heater configurations.

Construction, Heater, and Physical Characteristics

The 17C9 is housed in a glass envelope conforming to outlines section 6B, with the modification of an added center pin on the base. Because of this unique base configuration, the tube requires a specialized

miniature 10-contact socket for operation. The internal construction features a common internal shield that is connected to the cathode of Unit 2.

Heater Ratings

The heater is designed for operation from either an AC or DC supply with the following parameters:

- **Heater Voltage (AC/DC):** 16.8 V
- **Heater Current:** 0.15 A
- **Peak Heater-Cathode Voltage:** 100 V maximum

Pinout Configurations (Base 10F)

Two distinct pinout configurations are documented for the 10F base of the 17C9. Both configurations utilize the center pin for the Cathode of Unit 2 and the Internal Shield ($KTR2, IS$):

Configuration A

- **Pin 1:** Grid No. 2 of Unit 1 ($G2TR1$)
- **Pin 2:** Grid No. 1 of Unit 1 ($G1TR1$)
- **Pin 3:** Plate of Unit 2 ($PTR2$)
- **Pin 4:** Heater (H)
- **Pin 5:** Heater (H)
- **Pin 6:** Cathode of Unit 1 ($KTR1$)
- **Pin 7:** Grid No. 1 of Unit 2 ($G1TR2$)
- **Pin 8:** Grid No. 2 of Unit 2 ($G2TR2$)
- **Pin 9:** Plate of Unit 1 ($PTR1$)
- **Center Pin:** Cathode of Unit 2, Internal Shield ($KTR2, IS$)

Configuration B

- **Pin 1:** Heater (H)
- **Pin 2:** Plate of Unit 2 ($PTR2$)
- **Pin 3:** Grid No. 2 of Unit 2 ($G2TR2$)
- **Pin 4:** Grid No. 1 of Unit 2 ($G1TR2$)
- **Pin 5:** Heater (H)
- **Pin 6:** Cathode of Unit 1 ($KTR1$)
- **Pin 7:** Grid No. 1 of Unit 1 ($G1TR1$)
- **Pin 8:** Grid No. 2 of Unit 1 ($G2TR1$)
- **Pin 9:** Plate of Unit 1 ($PTR1$)
- **Center Pin:** Cathode of Unit 2, Internal Shield ($KTR2, IS$)

Direct Interelectrode Capacitances

The internal shielding and physical separation of the two tetrode units provide low capacitive coupling. The direct interelectrode capacitances are specified as follows:

Individual Unit Capacitances

Capacitance Parameter	Unit 1	Unit 2
Grid No. 1 to Plate	0.055 max pF	0.06 max pF
Grid No. 1 to Cathode, Heater, Grid No. 2, and Internal Shield	4.4 pF	4.2 pF
Plate to Cathode, Heater, Grid No. 2, and Internal Shield	2.2 pF	2.2 pF
Heater to Cathode	4.2 pF	4.8 pF

Unit-to-Unit Capacitances

- **Plate of Unit 1 to Plate of Unit 2:** 0.003 max pF
- **Grid No. 1 of Unit 1 to Grid No. 1 of Unit 2:** 0.001 max pF
- **Grid No. 1 of Unit 1 to Plate of Unit 2:** 0.001 max pF
- **Grid No. 1 of Unit 2 to Plate of Unit 1:** 0.032 max pF

Electrical Characteristics and Operating Points

Under typical Class A1 amplifier operating conditions, each tetrode unit exhibits the following characteristics:

- **Plate Voltage:** 125 V
- **Grid-No. 2 (Screen-Grid) Voltage:** 80 V
- **Grid-No. 1 (Control-Grid) Voltage:** -1 V
- **Plate Resistance (Approximate):** 0.1 MΩ
- **Transconductance:** 8000 μmhos
- **Plate Current:** 10 mA
- **Grid-No. 2 Current:** 1.5 mA
- **Grid-No. 1 Voltage (Approximate for plate current of 20 μA):** -6 V

Maximum Ratings

The maximum ratings are established under the Design-Maximum system for Class A1 amplifier operation of each unit:

- **Plate Voltage:** 250 V maximum

- **Grid-No. 2 (Screen-Grid) Supply Voltage:** 180 V maximum
- **Grid-No. 2 Voltage:** Subject to specific rating curves
- **Cathode Current:** 20 mA maximum
- **Plate Dissipation (Either plate individually):** 1.5 W maximum
- **Plate Dissipation (Both plates, both units operating):** 2.5 W maximum
- **Grid-No. 2 Input (for Grid-No. 2 voltages up to 90 V):** 0.5 W maximum
- **Grid-No. 2 Input (for Grid-No. 2 voltages between 90 V and 180 V):** Subject to specific rating curves

Technical Summary

The **17C9** is a miniature, sharp-cutoff dual tetrode designed for VHF RF-amplifier and autodyne mixer applications. It features a 16.8 V, 0.15 A heater and requires a specialized 10-contact socket. With an internal shield and low unit-to-unit capacitances, it provides excellent isolation between its two independent tetrode sections. Each unit offers a transconductance of 8000 μmhos and a plate resistance of approximately 0.1 M Ω under typical Class A1 operating conditions. The design-maximum ratings allow a plate voltage of up to 250 V and a combined plate dissipation of 2.5 W when both units are operating.



SOURCE OPERATING CONDITIONS

1950 Sylvania

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

1950 SYLVANIA

Section 1 · Tetrode

APPLICATION

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Primary application	VHF RF amplifier / autodyne mixer	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1975 RCA RC30

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

1975 RCA RC30

Section 1 · Tetrode

CAPACITANCE

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1-to-plate capacitance	0.055 pF	Maximum
Grid No.1-to-cathode/heater/screen capacitance	4.4 pF	—
Plate-to-cathode/heater/screen capacitance	2.2 pF	—

CHARACTERISTIC

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA
Screen-grid voltage	80 V	ClassA
Grid No.1 voltage	-1 V	ClassA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate current	10 mA	ClassA
Screen-grid current	1.5 mA	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage maximum	250 V	ClassA
Screen-grid supply voltage maximum	180 V	ClassA

1975 RCA RC30

Section 2 · Tetrode

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1-to-plate capacitance	0.06 pF	Maximum
Grid No.1-to-cathode/heater/screen capacitance	4.2 pF	—
Plate-to-cathode/heater/screen capacitance	2.2 pF	—

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	125 V	ClassA
Screen-grid voltage	80 V	ClassA
Grid No.1 voltage	-1 V	ClassA
Plate current	10 mA	ClassA
Screen-grid current	1.5 mA	ClassA

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage maximum	250 V	ClassA
Screen-grid supply voltage maximum	180 V	ClassA

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