



5879

SHARP-CUTOFF PENTODE

9-Pin Miniature Type
TENTATIVE DATA

RCA-5879 is a sharp-cutoff pentode of the 9-pin miniature type intended for use as an audio amplifier in applications requiring reduced microphonics, leakage noise, and hum. It is especially useful in the input stages of medium-gain public address systems, home sound recorders, and general-purpose audio systems.



GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:
Voltage (AC or DC) 6.3 volts
Current 0.150 amp
Direct Interelectrode Capacitances
(With no external shield):

Pentode Connection:
Grid No.1 to Plate 0.11 max. $\mu\mu\text{f}$
Input 2.7 $\mu\mu\text{f}$
Output 2.4 $\mu\mu\text{f}$
Triode Connection:
(Grids No.2 and No.3 Connected to Plate)
Grid No.1 to Plate 1.4 $\mu\mu\text{f}$
Grid No.1 to Cathode 1.4 $\mu\mu\text{f}$
Plate to Cathode 0.85 $\mu\mu\text{f}$

Mechanical:

Mounting Position Any
Maximum Overall Length 2-3/16"
Maximum Seated Length 1-15/16"
Length from Base Seat to
Bulb Top (excluding tip) 1-9/16" \pm 3/32"
Maximum Diameter 7/8"
Bulb T-6-1/2
Base Small-Button Noval 9-Pin

Class A₁ AMPLIFIER

Pentode Connection

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE 300 max. volts
GRID-No.2 (SCREEN) VOLTAGE 150 max. volts
GRID-No.2 SUPPLY VOLTAGE 300 max. volts
GRID-No.2 INPUT 0.25 max. watt
PLATE DISSIPATION 1.25 max. watts
GRID-No.1 (CONTROL-GRID) VOLTAGE:
Negative Bias Value 50 max. volts
Positive Bias Value 0 max. volts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode 90 max. volts
Heater positive with respect to cathode 90 max. volts

Characteristics:

Plate Voltage 250 volts
Grid-No.3 (Suppressor) Connected to cathode at socket
Grid-No.2 Voltage 100 volts
Grid-No.1 Voltage -3 volts
Plate Resistance (Approx.) 2 megohms
Transconductance 1000 μmhos
Grid-No.1 Bias (Approx.) for
Plate Current of 10 μamp -8 volts
Plate Current 1.8 ma
Grid-No.2 Current 0.4 ma

Maximum Circuit Values:

Grid-No.1-Circuit Resistance 2.2 max. megohms

Triode Connection

Grids No.2 and No.3 Connected to Plate

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE 250 max. volts
TOTAL PLATE DISSIPATION 1.5 max. watts
GRID-No.1 VOLTAGE:
Negative Bias Value 50 max. volts
Positive Bias Value 0 max. volts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode 90 max. volts
Heater positive with respect to cathode 90 max. volts

Characteristics:

Plate Voltage 100 250 volts
Grid-No.1 Voltage -3 -8 volts
Amplification Factor 21 21
Plate Resistance (Approx.) 17000 13700 ohms
Transconductance 1240 1530 μmhos
Total Plate Current 2.2 5.5 ma

Maximum Circuit Values:

Grid-No.1-Circuit Resistance 2.2 max. megohms

INSTALLATION and APPLICATION

The base pins of the 5879 fit the noval 9-pin socket. The socket may be mounted to hold the tube in any position.

It is recommended that pins No.2 and 6 be grounded in all applications. Grounding of these pins will effectively shield grid No.1 and plate from heater and help to reduce hum level when an ac heater supply is used.



Operating Conditions as Resistance-Coupled Amplifier for Maximum Voltage Output

| | 90 | | | 180 | | | 300 | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | |
| Plate-Supply Voltage | | | | | | | | | | volts |
| Plate Load Resistor | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | megohm |
| Grid-No. 2 Resistor | 0.15 | 0.40 | 1.0 | 0.20 | 0.53 | 1.1 | 0.2 | 0.52 | 1.2 | megohms |
| Grid-No. 1 Resistor (of following Stage) | 0.22 | 0.47 | 1.0 | 0.22 | 0.47 | 1.0 | 0.22 | 0.47 | 1.0 | megohm |
| Cathode Resistor | 2200 | 3800 | 7400 | 1400 | 2300 | 3700 | 1100 | 1600 | 2500 | ohms |
| Grid-No. 2 Bypass Capacitor ● | 0.08 | 0.065 | 0.04 | 0.08 | 0.07 | 0.07 | 0.1 | 0.1 | 0.1 | μf |
| Cathode Bypass Capacitor ● | 4.4 | 3.2 | 2.0 | 5.85 | 4.45 | 3.5 | 6.8 | 5.45 | 4.3 | μf |
| Blocking Capacitor ● | 0.013 | 0.006 | 0.003 | 0.013 | 0.006 | 0.003 | 0.013 | 0.006 | 0.004 | μf |
| Peak Output Voltage □ | 28 | 30 | 30 | 59 | 62 | 59 | 110 | 113 | 110 | volts |
| Voltage Gain † | 32 | 44 | 57 | 46 | 62 | 66 | 53 | 64 | 76 | |

Operating Conditions as Resistance-Coupled Amplifier for Maximum Voltage Gain

| | 90 | | | 180 | | | 300 | | | |
|--|------|------|------|------|------|------|------|------|------|---------|
| | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | |
| Plate-Supply Voltage | | | | | | | | | | volts |
| Plate Load Resistor | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | 0.1 | 0.22 | 0.47 | megohm |
| Grid-No. 2 Resistor | 0.35 | 0.80 | 1.9 | 0.35 | 0.80 | 1.9 | 0.35 | 0.80 | 1.9 | megohms |
| Grid-No. 1 Resistor (of following Stage) | 0.22 | 0.47 | 1.0 | 0.22 | 0.47 | 1.0 | 0.22 | 0.47 | 1.0 | megohm |
| Cathode Resistor | 1700 | 3000 | 7000 | 700 | 1200 | 2500 | 300 | 600 | 1200 | ohms |
| Peak Output Voltage □ | 17 | 21 | 25 | 28 | 31 | 32 | 32 | 37 | 42 | volts |
| Voltage Gain * | 39 | 59 | 75 | 56 | 87 | 122 | 68 | 109 | 152 | |

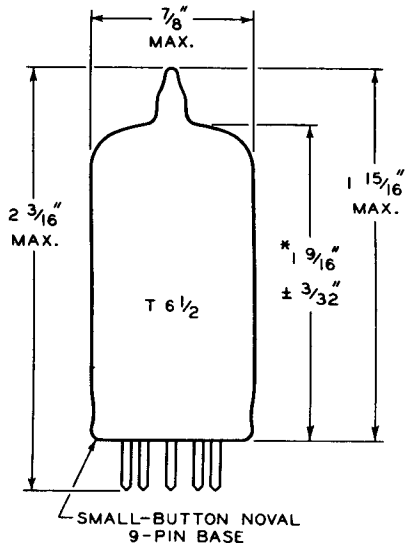
● The grid-No. 2 and cathode bypass capacitors, and blocking capacitors have been chosen to give output voltages at 100 cps (f_1) which are equal to 0.8 of the mid-frequency value. For any other value of (f_1), multiply the value of cathode and bypass blocking capacitors by $100/f_1$.

* At an output voltage of 1 volt rms and grid-No. 1 bias of 1 volt.

□ This peak output voltage is obtained across the grid resistor of the following stage at any frequency within the flat region of the output vs frequency curve, and is for the condition where the signal level is adequate to swing the grid of the resistance-coupled amplifier tube to the point where its grid starts to draw current.

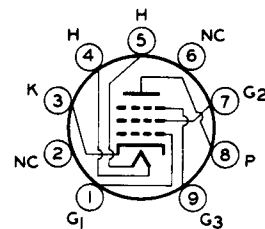
† At an output voltage of 5 volts rms.

DIMENSIONAL OUTLINE



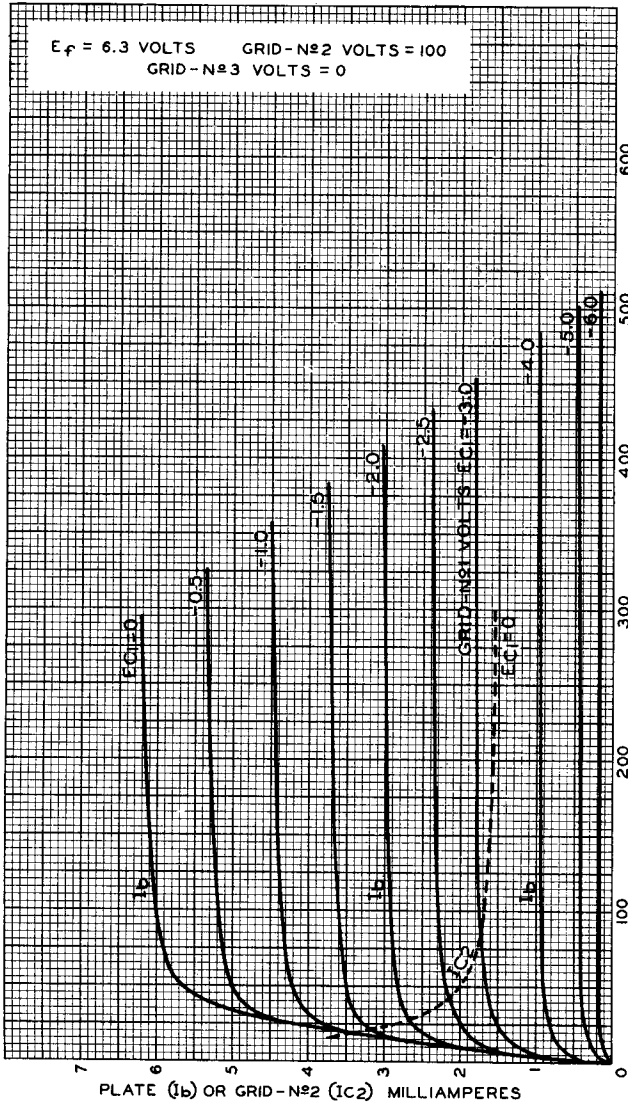
* MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY RING GAUGE OF 7/16" I. D.

SOCKET CONNECTIONS Bottom View

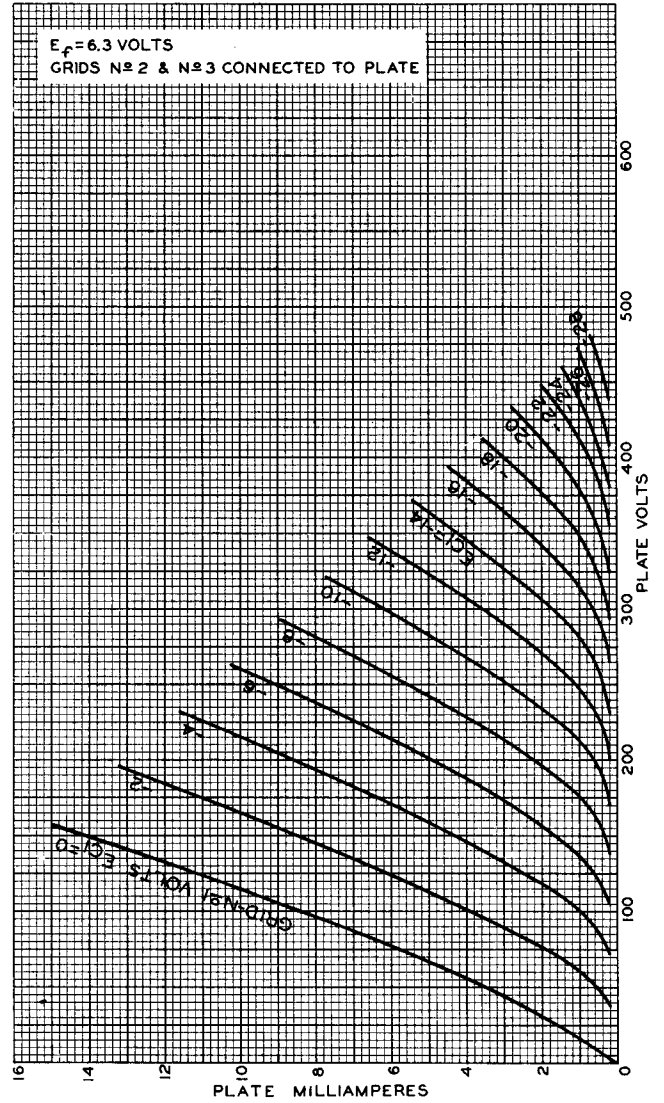


9AD

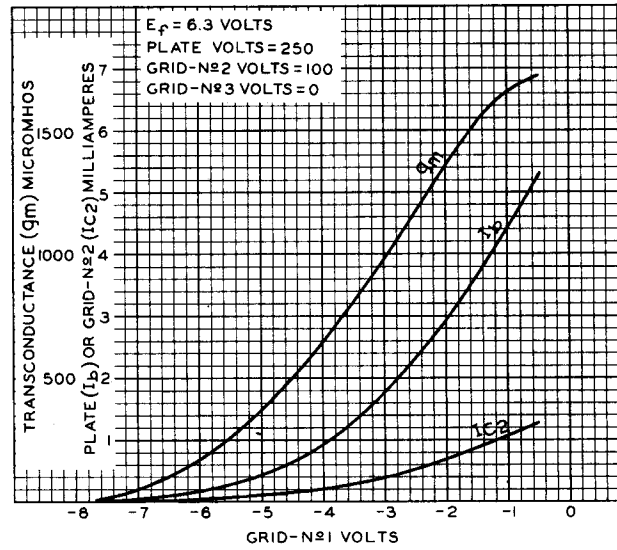
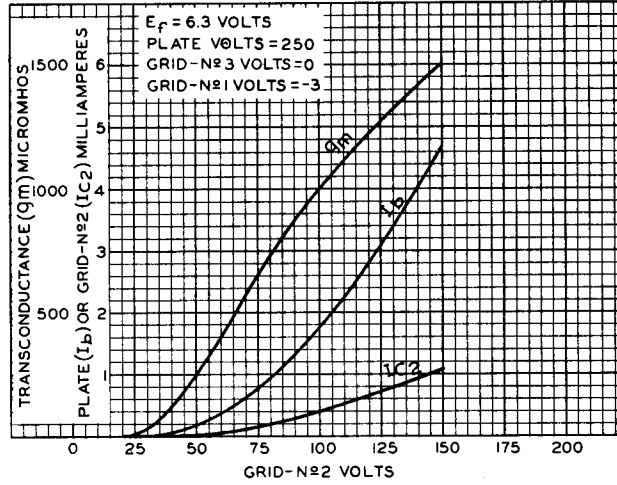
- PIN 1: GRID No. 1
- PIN 2: NO CONNECTION
- PIN 3: CATHODE
- PIN 4: HEATER
- PIN 5: HEATER
- PIN 6: NO CONNECTION
- PIN 7: GRID No. 2
- PIN 8: PLATE
- PIN 9: GRID No. 3



92CM-7439



92CM-7446



92CM-7440