Sharp-Cutoff Pentode
With Two Independent Control Grids

7-PIN MINIATURE TYPE
For FM Detector Service

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
Voltage (AC or DC)............ 6.3 ± 10% volts
Current at 6.3 volts........ 0.3 amp
Direct Interelectrode Capacitances
(Approx.):
Grid No.1 to plate........... 0.02 μf
Grid No.1 to cathode & internal
shield, grid No.3, grid No.2,
and heater.................. 5.8 μf
Grid No.3 to plate........... 1.7 μf
Grid No.1 to grid No.3........ 0.1 μf
Grid No.3 to cathode & internal
shield, plate, grid No.2, grid
No.1, and heater........... 6.1 μf

Characteristics, Class A1 Amplifier:
Plate Supply Voltage........ 150 volts
Grid No.3.................. Connected to cathode at socket
Grid-No.2 Supply Voltage.... 100 volts
Cathode Resistor.............. 560 ohms
Plate Resistance (Approx.).... 0.15 megohm
Transconductance, Grid No.1 to Plate..... 1350 μmhos
Transconductance, Grid No.3 to Plate..... 515 μmhos
Plate Current................ 1.55 ma
Grid-No.2 Current............. 1.8 ma
Grid-No.1 Voltage (Approx.) for
plate μa = 10................ -5.2 volts
Grid-No.3 Voltage (Approx.) for
plate μa = 10................ -4.2 volts

Mechanical:
Operating Position............... Any
Maximum Overall Length............. 2-1/8"
Maximum Seated Length.............. 1-7/8"
Length, Base Seat to Bulb Top (Excluding tip)........... 1-1/2" ± 3/32"
Diameter................................. 0.650" to 0.750"
Dimensional Outline............... See General Section
Bulb........................................ T5-1/2
Base........................................ Small-Button Miniature 7-Pin (JEDEC No.E7-1)
Basing Designation for BOTTOM VIEW .............. 7EN

Pin 1 - Grid No. 1
Pin 2 - Cathode, Internal Shield
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Grid No. 2
Pin 7 - Grid No. 3

FM DETECTOR

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE .......... 330 max. volts
GRID-No.3 (CONTROL-GRID) VOLTAGE .......... 28 max. volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE .. 330 max. volts
GRID-No.2 VOLTAGE .... See Grid-No.2 Input Rating Chart at front of Receiving Tube Section
GRID-No.1 (CONTROL-GRID) VOLTAGE:
Positive-bias value ........ 0 max. volts
GRID-No.2 INPUT:
For grid-No.2 voltages up to 165 volts .... 1.1 max. watts
For grid-No.2 voltages between 165 and 330 volts .... See Grid-No.2 Input Rating Chart at front of Receiving Tube Section
PLATE DISSIPATION .......... 1.7 max. watts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode .... 200 max. volts
Heater positive with respect to cathode .... 200 max. volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:
For fixed-bias operation ........ 0.25 max. megohm
For cathode-bias operation ........ 0.5 max. megohm

* With external shield J E D C N o. 316 connected to cathode.
* The dc component must not exceed 100 volts.
AVERAGE PLATE CHARACTERISTICS

$E_f = 6.3$ VOLTS
GRID NO. 3 CONNECTED TO CATHODE AT SOCKET.
GRID-NO. 2 VOLTS = 100

PLATE MILLIAMPERES

0 1 2 3 4 5 6 7 8 9 10

0 200 400
PLATE VOLTS

92CM-B827R2
AVERAGE PLATE CHARACTERISTICS

$E_f = 6.3$ VOLTS
GRID-$N^2$2 VOLTS=100
GRID $N^2$1 CONNECTED TO CATHODE AT SOCKET.
AVERAGE CHARACTERISTICS

$E_F = 6.3$ VOLTS

GRID NO.3 CONNECTED TO CATHODE AT SOCKET.
GRID NO.2 VOLTS = 100

GRID NO.1 (IC1) OR GRID NO.2 (IC2) MILLIAMPERES

PLATE VOLTS

RADIO CORPORATION OF AMERICA
Electron Tube Division
Harrison, N. J.
AVERAGE CHARACTERISTICS

$E_F = 6.3 \text{ VOLTS}$

GRID-$N^\#2$ VOLTS=100

GRID $N^\#1$ CONNECTED TO CATHODE AT SOCKET.

GRID-$N^\#3$ ($I_C^3$) MILLIAMPERES

GRID-$N^\#2$ ($I_C^2$) MILLIAMPERES

PLATE VOLTS

92CM-8829R2
AVERAGE CHARACTERISTICS

$E_f = 6.3 \text{ VOLTS}$

$\text{PLATE VOLTS} = 150$

$\text{GRID-N}^2 \text{ VOLTS} = 100$

GRID-NO 3 VOLTS

GRID-NO 1 VOLTS

PLATE (Ib) OR GRID-N2 (IC2) MILLIAMPERES

92CM-8826RI
E$_{c}$ = 6.3 VOLTS
PLATE VOLTS = 150
GRID N°3 CONNECTED TO CATHODE AT SOCKET.
GRID-N°2 VOLTS = 100

AVERAGE CHARACTERISTICS

GRID-N°1 VOLTS
-5 -4 -3 -2 -1 0 1 2 3

PLATE (1b) OR GRID-N°2 (1c2) MILLIAMPERES
0 2 4 6 8 10 12 14 16

92CM-8825RI

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