



12SY7

PENTAGRID CONVERTER

SINGLE-ENDED METAL TYPE

For use with 12-cell storage-battery supply

GENERAL DATA**Electrical:**

Heater, for Unipotential Cathode:

Voltage. 12.6 ac or dc volts

Current. 0.15 amp

Direct Interelectrode Capacitances:

Grid No.3 to All Other Electrodes (RF Input) 9.5[•] μ fPlate to All Other Electrodes (Mixer Output) 12[•] μ fGrid No.1 to All Other Electrodes (Osc. Input) 7[•] μ fGrid No.3 to Plate 0.13 max.[•] μ fGrid No.1 to Grid No.3 0.15 max.[•] μ fGrid No.1 to Plate 0.06 max.[•] μ f

Grid No.1 to Shell, Grid No.5, and All

Other Electrodes Except Cathode 4.4 μ fGrid No.1 to Cathode 2.6 μ f

Cathode to Shell, Grid No.5, and All

Other Electrodes Except Cathode 5 μ f**Mechanical:**

Mounting Position. Any

Maximum Overall Length 2-5/8"

Maximum Seated Length. 2-1/16"

Maximum Diameter 1-5/16"

Bulb Metal Shell, MT-8G

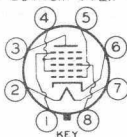
Base Small Wafer Octal 8-Pin

Basing Designation for BOTTOM VIEW 8R

Pin 1 - Shell,
Grid No.5

Pin 2 - Heater

Pin 3 - Plate

Pin 4 - Grids No.2 &
No.4

Pin 5 - Grid No.1

Pin 6 - Cathode

Pin 7 - Heater

Pin 8 - Grid No.3

CONVERTER**Maximum Ratings, Design-Center Values:**

PLATE VOLTAGE. 300 max. volts

GRIDS-No.2 and No.4 (SCREEN) VOLTAGE . . . 100 max. volts

GRIDS-No.2 and No.4 SUPPLY VOLTAGE . . . 300 max. volts

PLATE DISSIPATION. 1.0 max. watt

GRIDS-No.2 & No.4 DISSIPATION. 1.0 max. watt

TOTAL CATHODE CURRENT. 14 max. ma.

GRID-No.3 (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

[•] With shell connected to Cathode.

JUNE 20, 1946

TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA

12SY7



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PENTAGRID CONVERTER

Characteristics - Separate Excitation: *

Plate Voltage.	26.5	100	250	volts
Grids-No.2 & No.4 Voltage	26.5	100	100	volts
Grid-No.3 Voltage.	-1	-2	-2	volts
Grid-No.1 (Oscillator Grid) Resistor	20000	20000	20000	ohms
Plate Resistance (Approx.)	-	0.5	1.0	megohm
Conversion Transconductance	250	425	450	μmhos
Conversion Transconductance (Approx.)	8 [♂]	2 [♂]	2 [♂]	μmhos
Plate Current.	0.45	3.3	3.5	ma.
Grids-No.2 & No.4 Current	1.7	8.5	8.5	ma.
Grid-No.1 Current.	0.1	0.5	0.5	ma.
Total Cathode Current. . .	2.25	12.3	12.5	ma.

NOTE: The transconductance between grid No.1 and grids No.2 and No.4 connected to plate (not oscillating) is approximately 4500 μmhos under the following conditions: grids No.1, No.3, No.5 and shell at 0 volts; grids No.2 and No.4 and plate at 100 volts. Under the same conditions, the plate current is 27 milliamperes, and the amplification factor is 13.

* The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

♂ With grid-No.3 bias of -6 volts.

♂ With grid-No.3 bias of -35 volts.

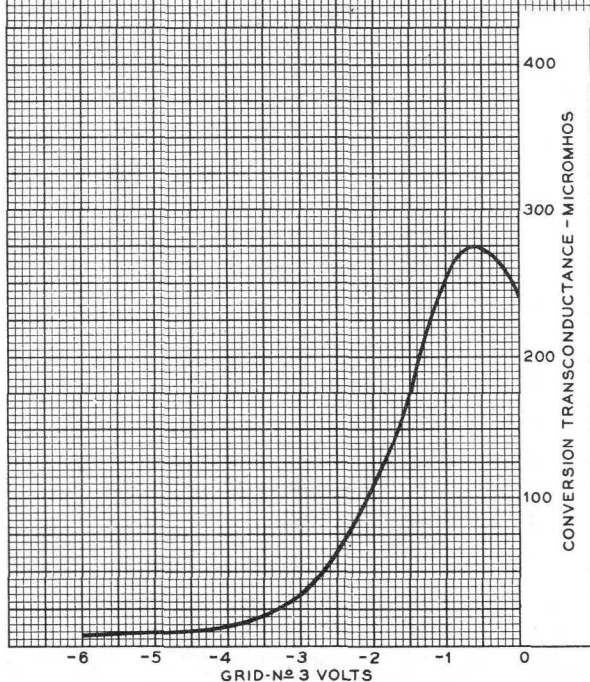
*The curves under Type 6SA7 also
apply to the 12SY7.*



12SY7

12SY7
OPERATION CHARACTERISTICS
WITH SEPARATE OSCILLATOR EXCITATION

$E_f = 12.6$ VOLTS
PLATE VOLTS = 26.5
GRIDS - No 2 & No 4 VOLTS = 26.5
GRID - No 1 MILLIAMPERES = 0.1
GRID - No 1 RESISTOR - OHMS = 20000



JULY 29, 1946

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92CM-6786

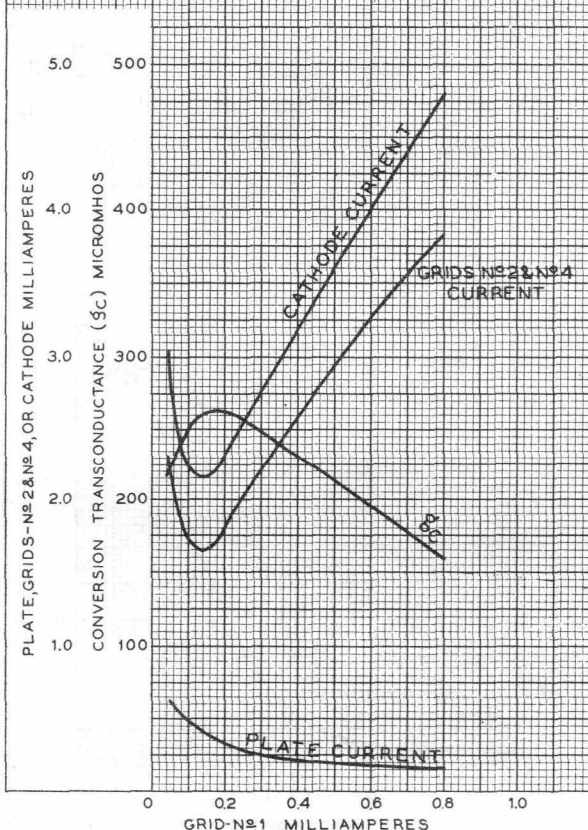
12SY7



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OPERATION CHARACTERISTICS WITH SEPARATE OSCILLATOR EXCITATION

$E_f = 12.6$ VOLTS
 PLATE VOLTS = 26.5
 GRIDS - No 2 & No 4 VOLTS = 26.5
 GRID - No 1 RESISTOR - OHMS = 20 000
 GRID - No 3 VOLTS = -1



JULY 30, 1946

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