



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[●] μufPlate to All Other Electrodes (Mixer Output) 12[●] μufGrid No.1 to All Other Electrodes (Osc. Input) 7[●] μufGrid No.3 to Plate 0.13 max. [●] μufGrid No.1 to Grid No.3 0.15 max. [●] μufGrid No.1 to Plate 0.06 max. [●] μufGrid No.1 to Shell, Grid No.5, and All
Other Electrodes Except Cathode 4.4 μuf

Grid No.1 to Cathode 2.6 μuf

Cathode to Shell, Grid No.5, and All
Other Electrodes Except Cathode 5 μuf**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 BR

Pin 1 - Shell, Pin 5 - Grid No.1

Grid No.5 Pin 6 - Cathode

Pin 2 - Heater Pin 7 - Heater

Pin 3 - Plate Pin 8 - Grid No.3

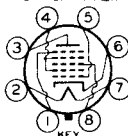
Pin 4 - Grids No.2 &
No.4CONVERTER**Maximum Ratings, Design-Center Values:**

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.

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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.

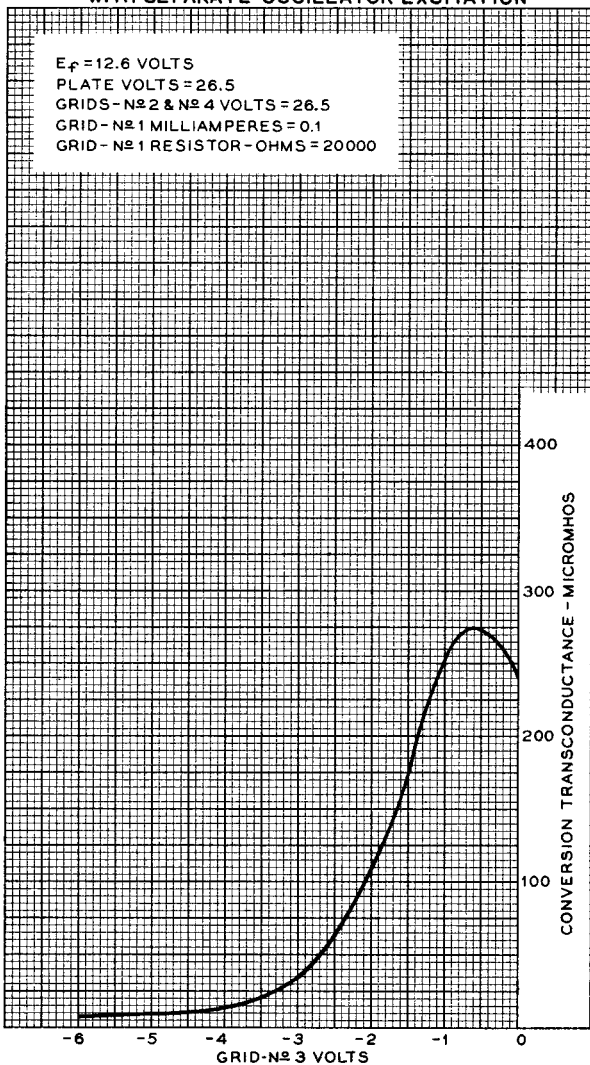
□ With grid-No.3 bias of -35 volts.

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



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OPERATION CHARACTERISTICS
WITH SEPARATE OSCILLATOR EXCITATION

JULY 29, 1946

TUBE DEPARTMENT

92C M - 6786

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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OPERATION CHARACTERISTICS WITH SEPARATE OSCILLATOR EXCITATION

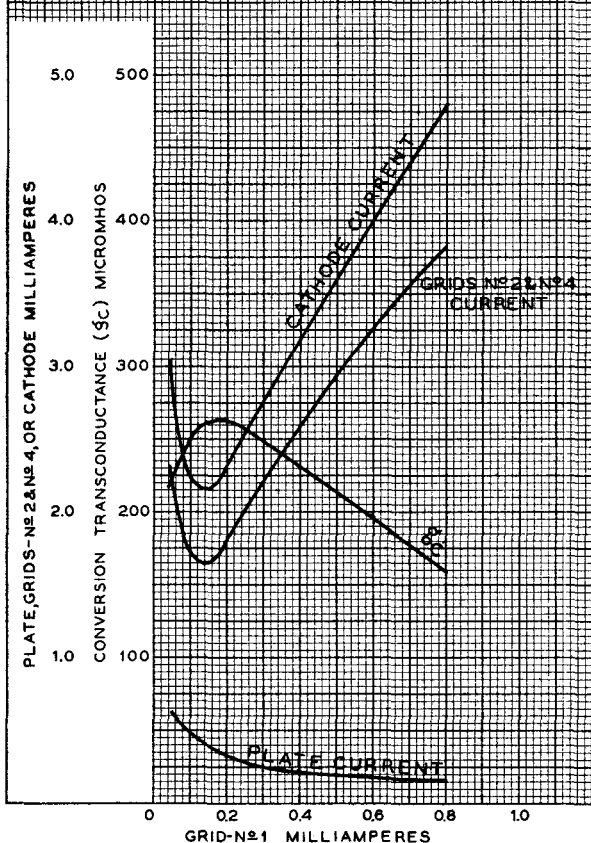
 $E_f = 12.6$ VOLTS

PLATE VOLTS = 26.5

GRIDS-№ 2 & № 4 VOLTS = 26.5

GRID-№ 1 RESISTOR - OHMS = 20 000

GRID-№ 3 VOLTS = -1



JULY 30, 1946

TUBE DEPARTMENT

92CM-6787

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY