



18FX6

18FX6

## PENTAGRID CONVERTER

7-PIN MINIATURE TYPE

## GENERAL DATA

## Electrical:

Heater, for Unipotential Cathode:

|                              |          |       |
|------------------------------|----------|-------|
| Voltage (AC or DC) . . . . . | 18 ± 10% | volts |
| Current . . . . .            | 0.1      | amp   |

Direct Interelectrode Capacitances:

|                                                                   | Without<br>External<br>Shield | With<br>External<br>Shield <sup>o</sup> |    |
|-------------------------------------------------------------------|-------------------------------|-----------------------------------------|----|
| Grid No.3 to all other elec-<br>trodes (RF input) . . . . .       | 7                             | 7                                       | μf |
| Plate to all other electrodes<br>(Mixer input) . . . . .          | 8                             | 13                                      | μf |
| Grid No.1 to all other elec-<br>trodes (Oscillator input) . .     | 5.5                           | 5.5                                     | μf |
| Grid No.3 to plate. . . . .                                       | 0.30 max.                     | 0.25 max.                               | μf |
| Grid No.3 to grid No.1. . . .                                     | 0.15 max.                     | 0.15 max.                               | μf |
| Grid No.1 to plate. . . . .                                       | 0.1                           | 0.05                                    | μf |
| Grid No.1 to cathode & grid No.5.                                 | 3                             | 3                                       | μf |
| Cathode & grid No.5 to all other<br>electrodes except grid No.1 . | 15                            | 20                                      | μf |

## 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. . . . . 7CH

Pin 1 - Grid No.1  
Pin 2 - Cathode,  
Grid No.5  
Pin 3 - Heater  
Pin 4 - Heater



Pin 5 - Plate  
Pin 6 - Grid No.2,  
Grid No.4  
Pin 7 - Grid No.3

## CONVERTER

## Maximum Ratings, Design-Maximum Values:

|                                                             |          |       |
|-------------------------------------------------------------|----------|-------|
| PLATE VOLTAGE . . . . .                                     | 150 max. | volts |
| GRIDS-No.2 & No.4 (SCREEN-GRIDS)<br>SUPPLY VOLTAGE. . . . . | 150 max. | volts |
| GRIDS-No.2 & No.4 VOLTAGE . . . . .                         | 110 max. | volts |
| GRIDS-No.2 & No.4 INPUT . . . . .                           | 1.2 max. | watts |
| PLATE DISSIPATION . . . . .                                 | 1 max.   | watt  |

18FX6



18FX6

## PENTAGRID CONVERTER

## PEAK HEATER-CATHODE VOLTAGE:

|                                                  |          |       |
|--------------------------------------------------|----------|-------|
| Heater negative with respect to cathode. . . . . | 100 max. | volts |
| Heater positive with respect to cathode. . . . . | 100 max. | volts |

## Characteristics:

*With Separate Excitation\**

|                                                                                         |       |            |
|-----------------------------------------------------------------------------------------|-------|------------|
| Plate Voltage . . . . .                                                                 | 100   | volts      |
| Grids-No.2 & No.4 Voltage . . . . .                                                     | 100   | volts      |
| Grid-No.3 Voltage . . . . .                                                             | -1.5  | volts      |
| Grid-No.1 Resistor. . . . .                                                             | 20000 | ohms       |
| Plate Resistance (Approx.). . . . .                                                     | 0.4   | megohm     |
| Conversion Transconductance . . . . .                                                   | 480   | $\mu$ mhos |
| Plate Current . . . . .                                                                 | 2.3   | ma         |
| Grids-No.2 & No.4 Current . . . . .                                                     | 6.2   | ma         |
| Grid-No.1 Current . . . . .                                                             | 0.5   | ma         |
| Total Cathode Current . . . . .                                                         | 9     | ma         |
| Grid-No.3 Voltage (Approx.) for conversion transconductance ( $\mu$ mhos) = 10. . . . . | -21   | volts      |

Oscillator Characteristics (Not Oscillating):<sup>■</sup>

|                                                              |      |            |
|--------------------------------------------------------------|------|------------|
| Plate & Grids-No.2 & No.4 Voltage . . .                      | 100  | volts      |
| Grid-No.3 Voltage . . . . .                                  | 0    | volts      |
| Grid-No.1 Voltage . . . . .                                  | 0    | volts      |
| Amplification Factor† . . . . .                              | 22   |            |
| Oscillator Transconductance†. . . . .                        | 7000 | $\mu$ mhos |
| Cathode Current . . . . .                                    | 24   | ma         |
| Grid-No.1 Voltage (Approx.) for plate $\mu$ a = 20 . . . . . | -9.2 | volts      |

<sup>o</sup> With external shield JEDEC No.316 connected to cathode.

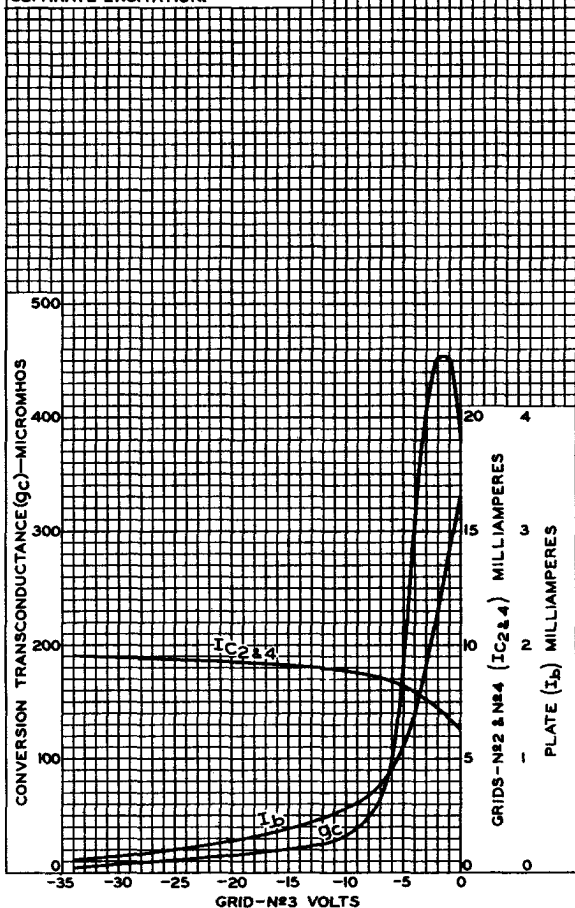
\* The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited-oscillator circuit operating with zero bias.

<sup>■</sup> With grids No.2 & No.4 connected to plate.

† Between grid No.1 and grids No.2 &amp; No.4 connected to plate.

## AVERAGE CHARACTERISTICS

$E_f = 18$  VOLTS  
 PLATE VOLTS = 100  
 GRIDS-N $\#$  2 & N $\#$  4 VOLTS = 100  
 GRID-N $\#$  1 MILLIAMPERES = 0.5  
 GRID-N $\#$  1 RESISTOR (OHMS) = 20 000  
 SEPARATE EXCITATION.



92CM-10777

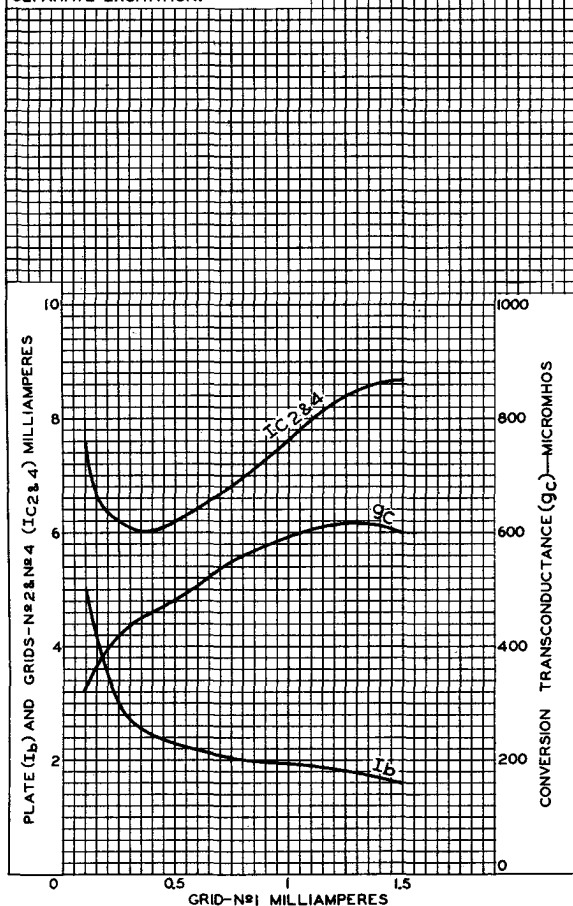


RADIO CORPORATION OF AMERICA  
 Electron Tube Division  
 Harrison, N. J.

DATA 2  
 1-61

## AVERAGE CHARACTERISTICS

$E_f = 18$  VOLTS  
 PLATE VOLTS = 100  
 GRIDS-N $\circ$  2 & N $\circ$  4 VOLTS = 100  
 GRID-N $\circ$  3 VOLTS = -1.5  
 GRID-N $\circ$  1 RESISTOR (OHMS) = 20000  
 SEPARATE EXCITATION.



92CM-10782