from RMA release #150, Nov. 18, 1938

**TWIN TRIODE AMPLIFIER**
Single-Ended Metal Type

The 6SC7 is a new, single-ended, metal, twin triode amplifier intended primarily for phase-inverter service. Each triode unit is designed with a high mu-factor to give high gain. Interlead shielding between grid and heater within the base reduces hum voltage picked up by the grid lead from the heater leads and permits operation with a satisfactory hum level.

**TENTATIVE CHARACTERISTICS and RATINGS**

| HEATER VOLTAGE (A.C. or D.C.) | 6.3 Volts |
| HEATER CURRENT | 0.3 Ampere |
| MAXIMUM OVERALL LENGTH | 2-5/8" |
| MAXIMUM DIAMETER | 1-5/16" |
| BASE | Small Wafer Octal 8-Pin |

**Characteristics - Each Triode Unit**

| HEATER VOLTAGE | 6.3 Volts |
| PLATE VOLTAGE | 250 max. Volts |
| GRID VOLTAGE | -2 Volts |
| AMPLIFICATION FACTOR | 70 |
| PLATE RESISTANCE | 53000 approx. Ohms |
| TRANSCONDUCTANCE | 1325 approx. Microhms |
| PLATE CURRENT | 2 Milliamperes |

**TYPICAL OPERATION AS PHASE INVERTER:**

| Plate-Voltage Supply | 90 | 300 Volts |
| Plate Load (RL) | 250000 | 250000 Ohms |
| Grid Resistor (Rg) for following stage | 0.5 | 0.5 Megohm |
| Cathode Resistor (RC) ** | 3750 | 1675 Ohms |
| Blocking Condenser | 0.006 | 0.006 pF |
| Voltage Output | 9 | 5 Volts |
| Voltage Gain3 | 30 | 42 |

1. Voltage at plate equals Plate-Supply Voltage minus voltage drop in RL and RC. For other supply voltages differing by as much as 50% from those listed, the values of resistors, condensers, and gain are approximately correct. The value of output voltage, however, for any of these other supply voltages equals the listed voltage output multiplied by the new plate-supply voltage divided by the plate-supply voltage corresponding to the listed voltage output.

2. Voltage across Rg at grid-current point.

3. Voltage gain at 5 volts (RMS) output.

**Pin Connections**

Pin 1 - Shell  
Pin 2 - Plate (Triode T1)  
Pin 3 - Grid (Triode T1)  
Pin 4 - Grid (Triode T2)  
Pin 5 - Plate (Triode T1)  
Pin 6 - Cathode  
Pin 7 - Heater  
Pin 8 - Heater

**Mounting Position**

Vertical or Horizontal - No restrictions

**OUTLINE DRAWING FOR 6SC7**

Same as for 6SA7

**November 18, 1938**
MECHANICAL DATA

Coated unipotential cathode
Outline drawing.................. 8-1
Base................................
Maximum diameter.................
Maximum overall length...........
Maximum seated height...........
Pin connections........................
Pin 1 - Shell
Pin 2 - #2 Plate
Pin 3 - #2 Grid
Pin 4 - #1 Grid
Pin 5 - #1 Plate
Pin 6 - Cathode
Pin 7 - Heater
Pin 8 - Heater

Mounting position.................. any

ELECTRICAL DATA

Direct Interelectrode Capacitances* (approx.)

Grid to plate: (g1 to p)............. 2.0 μμf
Input: g1 to (h+k+g2+g3+S)........ 2.0 μμf
Output: p to (h+k+g2+g3+S)......... 3.0 μμf

*Pin 1 connected to pin 6

Ratings

Heater voltage (ac or dc)............. 6.3 volts
Maximum heater-cathode voltage...... 90 volts
Maximum plate voltage.............. 250 volts

Typical Operating Conditions and Characteristics, Class Al Amplifier (each unit)

Heater voltage................... 6.3 volts
Heater current.................. 300 ma
Plate voltage.................... 250 volts
Grid voltage...................... -2 volts
Amplification factor............. 70
Plate resistance.................. 53,000 ohms
Transconductance................ 1325 μmhos
Plate current.................... 2 ma

Refer to “Interpretation of Receiving Tube Ratings”
Announcement

of

Electron Device Type Reregistration

Release No. 150B (Tentative)*

March 14, 1960

The Joint Electron Device Engineering Council announced the registration of the following electron device designation

6SC7

on November 2, 1938, Release No. 150, under the sponsorship of Radio Corporation of America, Harrison, New Jersey

The sponsor now proposes reregistration based on the following data:

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<th>ITEM</th>
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<tbody>
<tr>
<td>Under ELECTRICAL DATA</td>
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<tr>
<td>Direct Interelectrode</td>
<td>See Release 150A</td>
<td>Direct Interelectrode</td>
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<tr>
<td>Capacitances* (Approx.)</td>
<td>(1/29/52)</td>
<td>Capacitances* (Each</td>
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<tr>
<td>Input:</td>
<td>g1 to (h+k+g2+g3+S)</td>
<td>Unit, Approx.)</td>
</tr>
<tr>
<td>Output:</td>
<td>p to (h+k+g2+g3+S)</td>
<td>g1 to (h+k+S)</td>
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*Pin 1 connected to pin 6.

*Unless valid objection to this reregistration is lodged with the EIA Standards Laboratory prior to April 14, 1960, this reregistration will be made and this information will be considered "FINAL" WITHOUT FURTHER NOTICE!