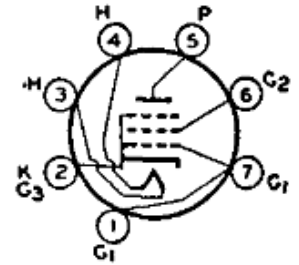


BEAM POWER TUBE

6AQ5

Miniature type used as output amplifier primarily in automobile receivers and in ac-operated receivers. Within its maximum ratings, the performance of the 6AQ5 is equivalent to that of larger types 6V6 and 6V6-GT.



For typical circuits employing type 6AQ5, both singly and in push-pull, refer to **CIRCUIT SECTION**.

| | | |
|--|------|---------------|
| HEATER VOLTAGE (AC/DC) | 6.3 | volts |
| HEATER CURRENT | 0.45 | ampere |
| DIRECT INTERELECTRODE CAPACITANCES (Approx.): | | |
| Grid No. 1 to Plate | 0.35 | μf |
| Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3. | 8.3 | μf |
| Plate to Cathode, Heater, Grid No.2, and Grid No.3. | 8.2 | μf |

CLASS A₁ AND CLASS AB₁ PUSH-PULL AMPLIFIER

Maximum Ratings:

| | | |
|---|----------------|-------|
| PLATE VOLTAGE | 250 <i>max</i> | volts |
| GRID-NO. 2 VOLTAGE | 250 <i>max</i> | volts |
| PLATE DISSIPATION | 12 <i>max</i> | watts |
| GRID-NO.2 INPUT | 2 <i>max</i> | watts |
| PEAK HEATER-CATHODE VOLTAGE: | | |
| Heater negative with respect to cathode | 90 <i>max</i> | volts |
| Heater positive with respect to cathode | 90 <i>max</i> | volts |

Typical Operation:

Same as for type 6V6-GT within the limitations of the maximum ratings.

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

| | | |
|----------------------------------|----------------|--------|
| For fixed-bias operation | 0.1 <i>max</i> | megohm |
| For cathode-bias operation | 0.5 <i>max</i> | megohm |

INSTALLATION AND APPLICATION

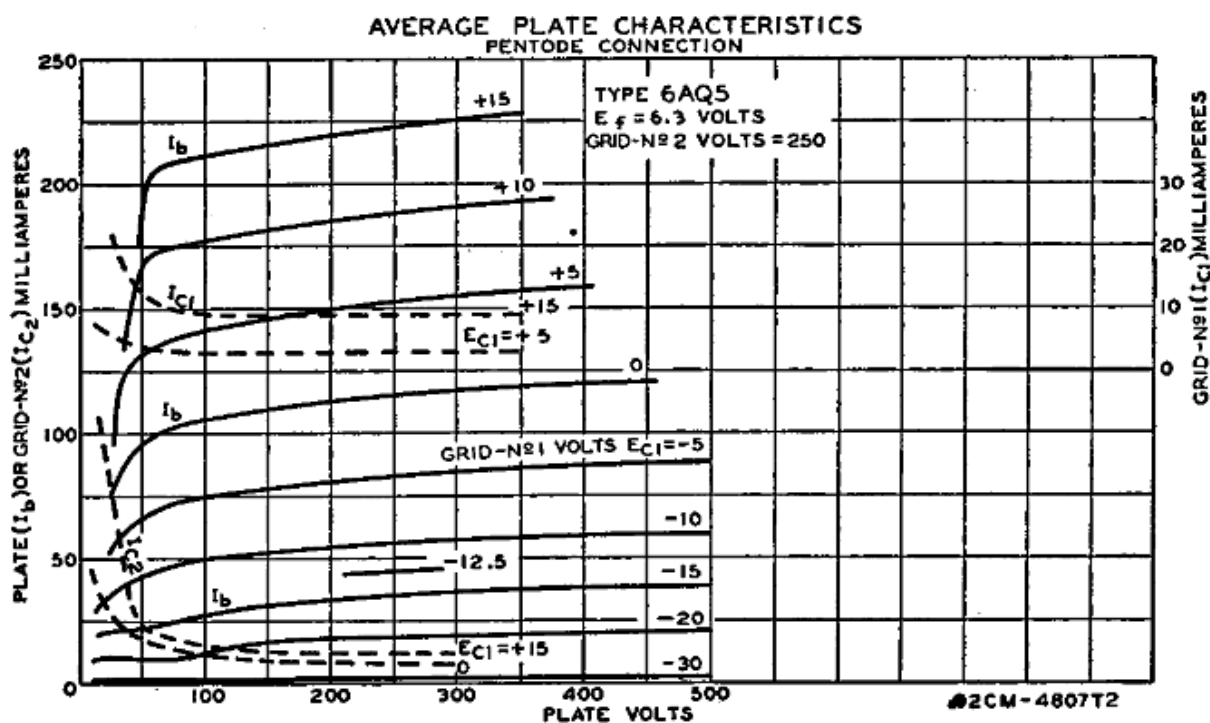
Type 6AQ5 requires a miniature seven-contact socket and may be mounted in any position. Outline 16, OUTLINES SECTION.

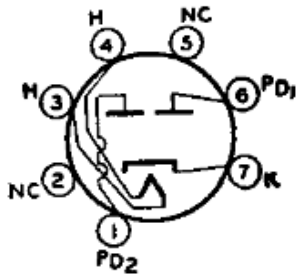
When the heater is operated on ac with a transformer, the winding of the transformer which supplies the heater circuit should operate the heater at the recommended value for full-load operating conditions at average line voltage. Under any condition of operation, the heater voltage should not be allowed to vary more than 10% from the rated value. When the 6AQ5 is used in automobile receivers, the heater terminals should be connected directly across the 6-volt battery.

Use of type 6AQ5 in a series string arrangement should be limited to tubes with the same heater-current rating. If it is necessary to use the 6AQ5 in series with tubes having different heater ratings, shunt resistors are required. Refer to ELECTRON TUBE INSTALLATION SECTION for additional heater considerations.

The **cathode** of the 6AQ5 should preferably be connected directly to the electrical mid-point of the heater circuit when the heater voltage is supplied from a transformer. When the 6AQ5 is operated in receivers employing a 6-volt storage battery for the heater supply, its cathode circuit is tied in either directly or through bias resistors to the negative side of the dc plate supply which is furnished either by the dc power line or the ac line through a rectifier. Under any circumstances, the heater-cathode voltage should be kept within ratings. If the use of a large resistor is necessary in some circuit designs, it should be bypassed by a suitable filter network or objectionable hum may develop.

In all services, precautions should be taken to insure that the dissipation rating is not exceeded with expected line-voltage variations, especially in the cases of fixed-bias operation. When the push-pull connection is used, fixed-bias values up to 10% of each typical screen voltage can be used without increasing distortion.





FULL-WAVE VACUUM RECTIFIER

6X4

Miniature type used in power supply of automobile and ac-operated radio receivers. Equivalent in performance to larger types 6X5 and 6X5-GT. Type 6X4 requires miniature seven-contact

socket and may be mounted in any position. Outline 16, OUTLINES SECTION. It is especially important that this tube, like other power-handling tubes, be adequately ventilated. For discussion of Rating Chart and Operation Characteristics, refer to type 6AX5-GT.

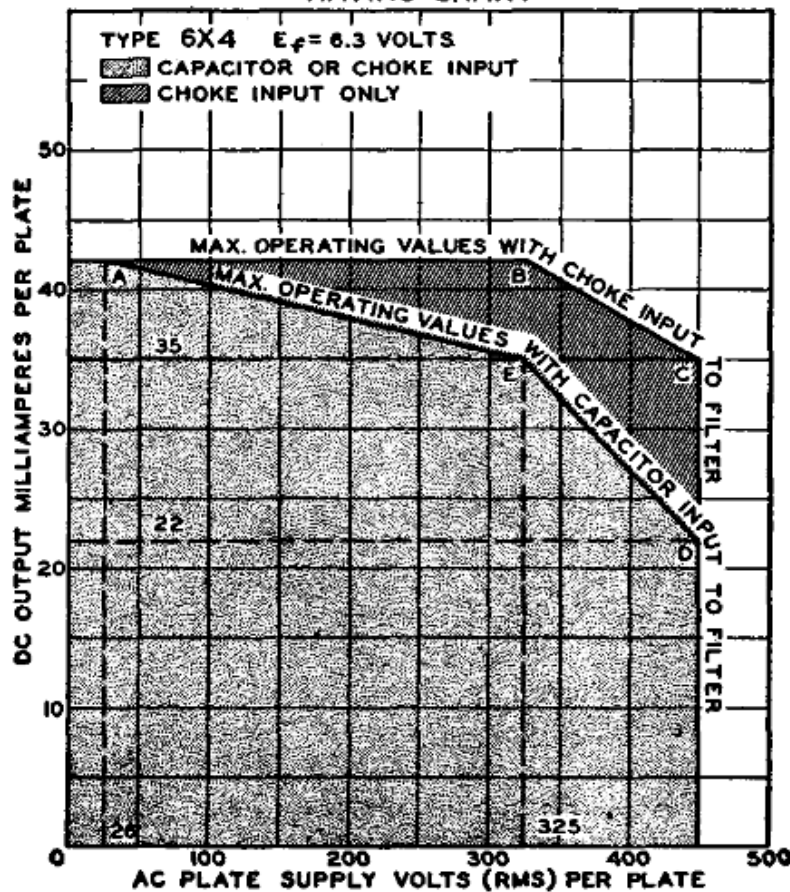
| | | |
|-----------------------------|-----|--------|
| HEATER VOLTAGE (AC/DC)..... | 6.3 | volts |
| HEATER CURRENT..... | 0.6 | ampere |

Maximum Ratings:

FULL-WAVE RECTIFIER

| | | |
|--|------------------|-------|
| PEAK INVERSE PLATE VOLTAGE..... | 1250 max | volts |
| PEAK PLATE CURRENT PER PLATE..... | 210 max | ma |
| AC PLATE SUPPLY VOLTAGE (RMS) PER PLATE..... | See Rating Chart | |
| DC OUTPUT CURRENT PER PLATE..... | See Rating Chart | |
| HOT-SWITCHING TRANSIENT PLATE CURRENT..... | # | |
| PEAK HEATER-CATHODE VOLTAGE: | | |
| Heater negative with respect to cathode..... | 450 max | volts |
| Heater positive with respect to cathode..... | 450 max | volts |

RATING CHART



Typical Operation:

| Filter Input | Capacitor | Choke | |
|--|-----------|-------|---------|
| AC Plate-to-Plate Supply Voltage (rms)..... | 650 | 900 | volts |
| Filter Input Capacitor..... | 10* | - | μ f |
| Effective Plate Supply Impedance per Plate..... | 520 | - | ohms |
| Minimum Filter Input Choke..... | - | 10 | henries |
| DC Output Voltage at Input to Filter (Approx.): | | | |
| At half-load current of 35 ma..... | 360 | 385 | volts |
| At full-load current of 70 ma..... | 300 | 370 | volts |

If hot-switching is regularly required in operation, the use of choke-input circuits is recommended. Such circuits limit the hot-switching current to a value no higher than that of the peak plate current. When capacitor-input circuits are used, a maximum peak current value per plate of 1 ampere during the initial cycles of the hot-switching transient should not be exceeded.

* Higher values of capacitance than indicated may be used, but the effective plate-supply impedance should be increased to prevent exceeding the maximum rating for peak plate current.

