



5654

SHARP-CUTOFF PENTODE

MINIATURE TYPE

5654
PREMIUM TYPE

Intended for RF and IF Broad-Band Applications where dependable performance under shock and vibration are paramount. The 5654 is a "premium" version of the 6AX5.

GENERAL DATA

Electrical:

Heater, Pure Tungsten, for Unipotential Cathode:

| | | |
|--|------------|----------------|
| Voltage | 6.3 ± 10% | ac or dc volts |
| Current | 0.175 | amp |
| Direct Interelectrode Capacitances: [▲] | | |
| Grid No.1 to Plate | 0.020 max. | μmf |
| Input | 4.0 | μmf |
| Output | 2.85 | μmf |

Mechanical:

| | |
|--|--|
| Mounting Position | Any |
| Maximum Overall Length | 1-3/4" |
| Maximum Seated Length | 1-1/2" |
| Length from Base Seat to Bulb Top (Excluding tip) | 1-1/8" ± 3/32" |
| Maximum Diameter | 3/4" |
| Bulb | T-5-1/2" |
| Base | Small-Button Miniature 7-Pin (JETEC No.E7-1) |

BOTTOM VIEW

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



- Pin 5 - Plate
- Pin 6 - Grid No.2
- Pin 7 - Cathode,
Grid No.3,
Int. Shield

AMPLIFIER - Class A₁

Maximum Ratings, Absolute Values:

| | | |
|---|-----------|-------|
| PLATE VOLTAGE | 200 max. | volts |
| GRID-No.2 (SCREEN) VOLTAGE | 155 max. | volts |
| PLATE DISSIPATION | 1.85 max. | watts |
| GRID-No.2 INPUT | 0.55 max. | watt |
| CATHODE CURRENT | 20 max. | ma |
| PEAK HEATER-CATHODE VOLTAGE: | | |
| Heater positive with respect to cathode | 100 max. | volts |
| Heater negative with respect to cathode | 100 max. | volts |

Typical Operation and Characteristics:

| | | | |
|-----------------------------|-----|-----|-------|
| Plate Voltage | 120 | 180 | volts |
| Grid-No.2 Voltage | 120 | 120 | volts |

[▲] According to RTMA Standard ET-109A with external shield No.316.

565A



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| | | | |
|--|------|------|-----------|
| Cathode-Bias Resistor | 180 | 180 | ohms |
| Plate Resistance (Approx.) | 0.30 | 0.50 | megohm |
| Transconductance | 5000 | 5100 | μ hos |
| Plate Current | 7.5 | 7.7 | ma |
| Grid-No.2 Current | 2.5 | 2.4 | ma |
| Grid-No.1 Voltage (Approx.) for plate current of 10 μ amp . | -8.5 | -8.5 | volts |

Maximum Circuit Values:

| | | |
|--|----------|--------|
| Grid-No.1-Circuit Resistance | 0.5 max. | megohm |
|--|----------|--------|

SPECIAL RATINGS & PERFORMANCE DATA

Shock Rating:

| | | |
|-------------------------------|----------|---|
| Impact Acceleration | 500 max. | g |
|-------------------------------|----------|---|

Tubes are held rigid in three different positions in a Navy Type, High Impact (flyweight) Shock Machine and are subjected to 500 g impact acceleration.

Fatigue Rating:

| | | |
|------------------------------------|----------|---|
| Vibrational Acceleration | 2.5 max. | g |
|------------------------------------|----------|---|

Tubes are rigidly mounted and subjected in each of three positions to 2.5 g vibrational acceleration at 60 cycles per second for 32 hours.

Heater Cycling Life Performance:

Cycles of Intermittent Operation 2000 min. cycles
Under the following conditions: With heater voltage of 7.5 volts cycled 1 minute on and 1 minute off, heater positive with respect to cathode by +100 volts dc, and plate, grid-No.2, and grid-No.1 voltage = 0 volts.

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

| | Note | Min. | Max. | |
|---|------|-------|-------|-----------|
| Heater Current | 1 | 0.160 | 0.190 | amp |
| Grid-No.1-to-Plate Capacitance | - | - | 0.020 | μ mf |
| Input Capacitance | - | 3.4 | 4.6 | μ mf |
| Output Capacitance | - | 2.45 | 3.25 | μ mf |
| Plate Current | 1,2 | 3.0 | 12.0 | ma |
| Transconductance | 1,2 | 3500 | 6500 | μ hos |
| Reverse Grid Current | 1,3 | - | 0.1 | μ amp |

Note 1: With 6.3 volts ac on heater.

Note 2: With plate voltage of 120 volts, grid-No.2 voltage of 120 volts, and grid-No.1 voltage of -2 volts.

Note 3: With plate voltage of 120 volts, grid-No.2 voltage of 120 volts, grid-No.1 voltage of -2 volts, and grid-No.1 resistor of 0.1 megohm.

CURVES

are the same as shown for Type 6AK5
in the Receiving Tube Section

JAN. 1, 1953

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA