



5654

# SHARP-CUTOFF PENTODE

MINIATURE TYPE

5654  
PREMIUM TYPE

Intended for RP and IP 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: <sup>▲</sup>		
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 A<sub>1</sub>

#### 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

<sup>▲</sup> According to RTMA Standard ET-109A with external shield No.316.

565A



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## SHARP-CUTOFF PENTODE

Cathode-Bias Resistor . . . . .	180	180	ohms
Plate Resistance (Approx.) . . . .	0.30	0.50	megohm
Transconductance . . . . .	5000	5100	$\mu$ 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 $\mu$ amp .	-8.5	-8.5	volts

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . .	0.5 max.	megohm
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### SPECIAL RATINGS & PERFORMANCE DATA

#### Shock Rating:

Impact Acceleration . . . . .	500 max.	g
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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
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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	$\mu$ f
Input Capacitance . . . . .	-	3.4	4.6	$\mu$ f
Output Capacitance . . . . .	-	2.45	3.25	$\mu$ f
Plate Current . . . . .	1,2	3.0	12.0	ma
Transconductance . . . . .	1,2	3500	6500	$\mu$ hos
Reverse Grid Current . . . . .	1,3	-	0.1	$\mu$ 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