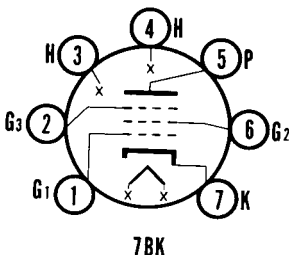


# SYLVANIA TYPE 7543



## HUM CRITERIA

The hum level at the plate averages 1.2 millivolts when used as a normal voltage amplifier with a stage gain of 340 and the 6.3 Vac heater supply balanced to ground for minimum hum.

The stage gain of 340 is obtained with a supply voltage of 250 volts, a plate resistor of 270,000 ohms, a grid No. 2 resistor of 680,000, a grid No. 1 resistor of 100,000 ohms, a cathode resistor (bypassed) of 1000 ohms and a following stage loading resistor of 10 megohms. (Loading resistance of VTVM.)

When utilizing the R-C data specified, removal of the cathode bypass condenser will reduce the hum level at the plate to 0.9 millivolts and the stage gain to 110.

## MECHANICAL DATA

Bulb.....	T-5 1/2
Base.....	E7-1, Miniature Button 7-Pin
Outline.....	5-2
Basing.....	7BK
Cathode.....	Coated Unipotential
Mounting Position.....	Any

## ELECTRICAL DATA

### HEATER CHARACTERISTICS

Heater Voltage.....	6.3 Volts
Heater Current.....	300 Ma
Heater-Cathode Voltage (Design-Center Values)	
Heater Negative with Respect to Cathode	
Total D C and Peak.....	200 Volts Max.
Heater Positive with Respect to Cathode	
D C.....	100 Volts Max.
Total D C and Peak.....	200 Volts Max.

### DIRECT INTERELECTRODE CAPACITANCES

	Shielded <sup>1</sup>	Unshielded
<b>Pentode Connection</b>		
Grid No. 1 to Plate.....	.0035	.0035 $\mu\text{mf}$ Max.
Input: g1 to (h+k+g2+g3+I.S.).....	5.5	5.5 $\mu\text{mf}$
Output: p to (h+k+g2+g3+I.S.).....	5.0	5.0 $\mu\text{mf}$
<b>Triode Connection<sup>2</sup></b>		
Grid to Plate: g1 to (p+g2+g3+I.S.).....	2.6	2.6 $\mu\text{mf}$
Input: g1 to (h+k).....	3.2	3.2 $\mu\text{mf}$
Output: p+g2+g3+I.S. to (h+k).....	8.5	1.2 $\mu\text{mf}$

### RATINGS (Design-Center Values)

	Triode Conn. <sup>2</sup>	Pentode Conn.
Plate Voltage.....	250	300 Volts Max.
Grid No. 2 Supply Voltage.....		300 Volts Max.
Grid No. 2 Voltage.....	See Rating Chart	
Plate Dissipation.....	3.2	3.0 Watts Max.
Grid No. 2 Dissipation.....		0.65 Watts Max.
Positive Grid No. 1 Voltage.....	0	0 Volts Max.

### CHARACTERISTICS AND TYPICAL OPERATION

	Triode Conn. <sup>2</sup>	Pentode Connected		
Plate Voltage.....	250	100	250	250 Volts
Grid No. 3 Voltage.....		Connected to Cathode at Socket		
Grid No. 2 Voltage.....		100	125	150 Volts
Cathode Bias Resistor.....	330	150	100	68 Ohms
Plate Current.....	12.2	5.0	7.6	10.6 Ma
Grid No. 2 Current.....		2.1	3.0	4.3 Ma
Transconductance.....	4800	3900	4500	5200 $\mu\text{mhos}$
Amplification Factor.....	36			
Plate Resistance (approx.)		0.5	1.5	1.0 Megohms
E <sub>c1</sub> for I <sub>b</sub> = 10 $\mu\text{a}$				
(approx.).....		-4.2	-5.5	-6.5 Volts

# SYLVANIA TYPE 7543 (Cont'd)

## NOTES:

1. Shield No. 316 connected to Cathode Pin No. 7.
2. When operated as a triode Grid No. 2 and Grid No. 3 should be tied to the plate.  
See Resistance Coupled data section (Chart XXI) for R-C data. See Type 6AU6 for curve information.

## APPLICATION

The Sylvania Type 7543 is designed to provide low hum, non-microphonic operation through the incorporation of a helical wound heater and rigid mounting of the internal components.

The 7543 is otherwise similar to, and a replacement for, the Type 6AU6.