

SHARP-CUTOFF PENTODE TYPES 3AU6, 4AU6, 6AU6, 6AU6-A AND 12AU6

The 3AU6, 4AU6, 6AU6, 6AU6-A and 12AU6 are 7-pin miniature sharp-cutoff pentode types designed for service as a wide-band, high gain, high frequency amplifier. The low grid-plate capacity and high transconductance of these types allows good performance as an intermediate frequency amplifier. They are also commonly employed as audio voltage amplifiers.

The 3AU6, 4AU6 and 6AU6-A have been designed for use in receivers which employ series-connected heaters, especially in television receivers where the picture-tube heater is in series with other heaters. When each is employed in this type of circuit with other tubes similarly designed, heater voltage surges across individual tubes are minimized inasmuch as the heater warm-up characteristic is controlled.

ELECTRICAL

Cathode..... Coated Unipotential
Heater:

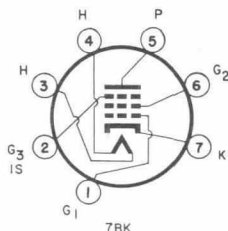
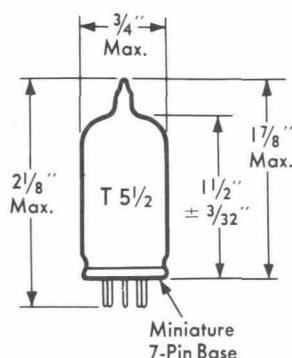
	3AU6	4AU6	6AU6	6AU6-A	12AU6	
Voltage (ac or dc)	3.15	4.2	6.3	12.6		Volts
Current	0.60	0.45	0.30	0.15		Ampere
Warm-up Time (Note 1)	11	11	11	--		Seconds

Direct Interelectrode Capacitances:

Pentode Connection:	Unshielded	Shielded (Note 2)	
Grid to Plate (Max.)	0.0035	0.0035	$\mu\mu\text{f}$
Input	5.5	5.5	$\mu\mu\text{f}$
Output	5.0	5.0	$\mu\mu\text{f}$
Triode Connection (Note 3):			
Grid to Plate	2.6	2.6	$\mu\mu\text{f}$
Input	3.2	3.2	$\mu\mu\text{f}$
Output	1.2	8.5	$\mu\mu\text{f}$

MECHANICAL

Bulb	T-5½
Base	Miniature 7-Pin (JEDEC E7-1)
Outline	5-2
Basing	7BK
Mounting Position	Any



MAXIMUM RATINGS

Design Maximum Values

	Triode Connection	Pentode Connection	
Plate Voltage	275	330	max. Volts
Grid 2 Supply Voltage	(Note 3)	330	max. Volts
Grid 2 Voltage	(Note 3)	See Grid 2 Input Rating Chart	
Plate Dissipation	3.5	3.5	max. Watts
Grid 2 Dissipation	—	0.75	max. Watts
Grid 1 Voltage, Positive Bias Value	0	0	max. Volts
Heater-Cathode Voltage:			
Heater Negative with Respect to Cathode			
Total DC + Peak	200		max. Volts
Heater Positive with Respect to Cathode			
DC Component	100		max. Volts
DC + Peak	200		max. Volts

AMPLIFIER - CLASS A

CHARACTERISTICS AND TYPICAL OPERATION

Plate Voltage	100	250	250	Volts
Grid 2 Voltage	100	125	150	Volts
Grid 3 Voltage	Connected to Cathode			
Cathode Resistor	150	100	68	Ohms
Transconductance	3900	4500	5200	μmhos
Plate Resistance	0.5	1.5	1.0	Megohm
Grid 1 Cutoff Bias (Note 4)	-4.2	-5.5	-6.5	Volts
Plate Current	5.0	7.6	10.6	Ma.
Grid 2 Current	2.1	3.0	4.3	Ma.

CHARACTERISTICS (Triode Connected)

Plate Voltage	250	Volts
Cathode Resistor	330	Ohms
Amplification Factor	36	—
Plate Resistance (Approx.)	.0075	Megohm
Transconductance	4800	μmhos
Plate Current	12.2	Ma.

NOTES

1. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three times rated heater voltage divided by rated heater current.
2. With JEDEC shield No. 316 connected to cathode.
3. Grids 2 and 3 connected to plate.
4. For Plate Current of 10 μa .

