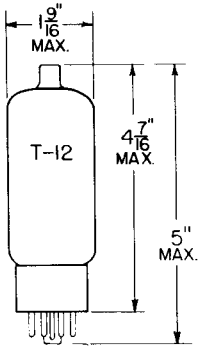
TUNG-SOL

BEAM PENTODE



GLASS BULB

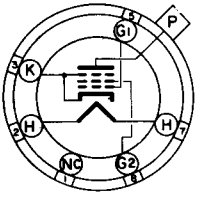
HEATER

21.5 VOLTS 0.6 AMP.

AC OR DC

VERTICAL MOUNTING POSITION

HORIZONTAL OPERATION IS PERMITTED IF PINS 2 AND 7 ARE IN A VERTICAL PLANE



BOTTOM VIEW

SHORT MEDIUM-SHELL 5 PIN OCTAL WITH EXTERNAL BARRIERS

5BT

THE 21EX6 IS A BEAM-POWER PENTODE DESIGNED PRIMARILY FOR USE AS THE HORIZONTAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS WHICH INCORPORATE LARGE-DEFLECTION-ANGLE PICTURE TUBES. FEATURES OF THE TUBE INCLUDE AN EXTREMELY HIGH PERVEANCE, HIGH PLATE CURRENT AT LOW PLATE AND SCREEN VOLTAGES, AND A HIGH RATIO OF PLATE TO SCREEN CURRENT. EXCEPT FOR HEATER RATINGS, THE 21EX6 IS IDENTICAL TO THE 6EX6.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.

GRID #1 TO PLATE	1.1	μμf
INPUT	22	μμf
OUTPUT	8.5	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE[A]

HEATER VOLTAGE	21.5	VOLTS
MAXIMUM DC PLATE-SUPPLY VOLTAGE (BOOST + DC POWER SUPPLY)	770	VOLTS
MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE (ABS. MAX.)	7000	VOLTS
MAXIMUM PEAK NEGATIVE PULSE PLATE VOLTAGE (ABS. MAX.)	1500	VOLTS
MAXIMUM SCREEN VOLTAGE	195	VOLTS
MAXIMUM PEAK NEGATIVE GRID #1 VOLTAGE	220	VOLTS
MAXIMUM PLATE DISSIPATION[B]	22	WATTS
MAXIMUM SCREEN DISSIPATION	3.5	WATTS
MAXIMUM DC CATHODE CURRENT	220	MA.
MAXIMUM PEAK CATHODE CURRENT	770	MA.
MAXIMUM HEATER CATHODE VOLTAGE:		
HEATER POSITIVE WITH RESPECT TO CATHODE		
DC COMPONENT	100	VOLTS
TOTAL DC AND PEAK	200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE		
TOTAL DC AND PEAK	200	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE	0.47	MEGOHMS
BULB TEMPERATURE AT HOTTEST POINT	225	°C
HEATER WARM-UP TIME (APPROX.)*	11.0	SECONDS

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

AVERAGE CHARACTERISTICS

HEATER VOLTAGE	21.5	21.5	21.5	VOLTS
HEATER CURRENT	0.6	0.6	0.6	AMP.
PLATE VOLTAGE	60	60	175	VOLTS
SCREEN VOLTAGE	125	150	175	VOLTS
GRID #1 VOLTAGE	0[C]	0[C]	-30	VOLTS
PLATE RESISTANCE (APPROX.)			8500	OHMS
TRANSCONDUCTANCE			7700	μMHOS
PLATE CURRENT	360	460	67	MA.
SCREEN CURRENT	30	45	3.3	MA.
GRID #1 VOLTAGE (APPROX.) FOR I_b = 1.0 MA.			-50	VOLTS
TRIODE AMPLIFICATION FACTOR WITH $E_b = E_{c2}$ = 175V.			4.2	
GRID #1 VOLTAGE WITH E_b=5000V. FOR I_b=1.0 MA.	-88	-94	-101	VOLTS

[A] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS: FEDERAL COMMUNICATIONS COMMISSION", THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

[B] IN STAGES OPERATING WITH GRID LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.

[C] APPLIED FOR VERY SHORT INTERVAL SO AS NOT TO DAMAGE TUBE.

* HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.