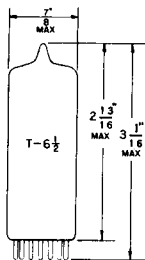


TUNG-SOL

BEAM POWER PENTODE
MINIATURE TYPE

GLASS BULB

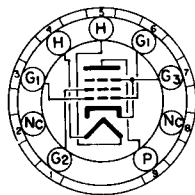
COATED UNIPOTENTIAL CATHODE

HEATER

12.6 VOLTS 0.6 AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

SMALL BUTTON
9 PIN BASE
9CK

THE 12DW5 IS A BEAM POWER PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED PRIMARILY FOR VERTICAL DEFLECTION AMPLIFIER SERVICE IN TELEVISION RECEIVERS EMPLOYING 110° DEFLECTION SYSTEMS. IT HAS A HIGH ZERO BIAS PLATE CURRENT AND IS DESIGNED TO OPERATE AT RELATIVELY LOW B SUPPLY VOLTAGES. IN ADDITION, THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. EXCEPT FOR HEATER RATINGS AND HEATER WARM-UP TIME THE 12DW5 IS IDENTICAL TO THE 6DW5.

DIRECT INTERELECTRODE CAPACITANCES
WITHOUT EXTERNAL SHIELD

GRID TO PLATE: (G ₁ TO P)	0.5	μf
INPUT: (G ₁ TO H+K)	14	μf
OUTPUT: (P TO H+K)	9	μf

RATINGS^A

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM
VERTICAL DEFLECTION AMPLIFIER^B
(PENTODE CONNECTED)

HEATER VOLTAGE	12.6	VOLTS
MAXIMUM DC PLATE VOLTAGE	330	VOLTS
MAXIMUM DC GRID #2 VOLTAGE	220	VOLTS
MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE (ABS. MAX.)	2 200	VOLTS
MAXIMUM PEAK NEGATIVE PULSE GRID VOLTAGE	250	VOLTS
MAXIMUM PLATE DISSIPATION ^C	11	WATTS
MAXIMUM GRID #2 DISSIPATION ^C	2.5	WATTS
MAXIMUM AVERAGE CATHODE CURRENT	65	MA.
MAXIMUM PEAK CATHODE CURRENT	225	MA.
MAXIMUM GRID CIRCUIT RESISTANCE: SELF BIAS	2.2	MEG OHMS

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS - CONT'D.
 INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM
VERTICAL DEFLECTION AMPLIFIER^B
 (PENTODE CONNECTED)

MAXIMUM HEATER-CATHODE VOLTAGE			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
HEATER WARM-UP TIME (APPROX.) ^D	11.0		SECONDS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS
VERTICAL DEFLECTION AMPLIFIER^B
 (PENTODE CONNECTED)

HEATER VOLTAGE	12.6	VOLTS
HEATER CURRENT	0.6	AMP.
PLATE VOLTAGE	200	VOLTS
GRID #1 VOLTAGE	-22.5	VOLTS
GRID #2 VOLTAGE	150	VOLTS
PLATE CURRENT	55	MA.
GRID #2 CURRENT	2.0	MA.
TRANSCONDUCTANCE	5 500	μ MHOS
PLATE RESISTANCE (APPROX.)	15 000	OHMS
GRID VOLTAGE FOR $I_b = 0.1$ MA.	-55	VOLTS
ZERO BIAS WITH $E_b = 60\text{VDC}$; $E_{c1} = 0$; $E_{c2} = 150\text{VDC}$ (INSTANTANEOUS VALUES)		
PLATE CURRENT	260	MA.
GRID #2 CURRENT	20	MA.
TRIODE AMPLIFICATION FACTOR WITH $E_b = E_{c2} = 150$ V; $E_{c1} = -22.5$	4.3	

^A DESIGN-MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR. TO OBTAIN SATISFACTORY CIRCUIT PERFORMANCE, THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT NO DESIGN-MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.

^B 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.

^C 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.

^D 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.