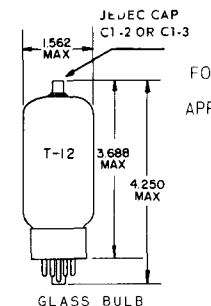


TUNG-SOL

BEAM PENTODE



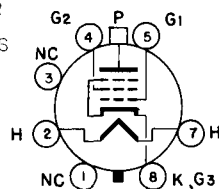
GLASS BULB
SKIRTED MINIATURE
SHORT MEDIUM-SHELL
6 PIN OCTAL B6-122,
B6-148 OR
7 PIN OCTAL
B7-111, B7-119 OR B5-190
OUTLINE DRAFTER
JEDEC 7-1-57

COATED UNIPOTENTIAL CATHODE

FOR HORIZONTAL DEFLECTION AMPLIFIER
APPLICATIONS IN TELEVISION RECEIVERS

ANY MOUNTING POSITION

PIN #1 IS OMITTED WHEN EITHER
A B6-122 OR B6-148 BASE IS USED



BASING DIAGRAM
JEDEC 6AM

THE 12DQ6B IS A BEAM POWER PENTODE PRIMARILY DESIGNED FOR USE AS THE HORIZONTAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. ITS HIGH ZERO-BIAS PLATE CURRENT AT LOW PLATE AND SCREEN VOLTAGES MAKES THE TUBE WELL SUITED FOR USE IN RECEIVERS THAT OPERATE AT LOW PLATE-SUPPLY VOLTAGES. EXCEPT FOR HEATER RATINGS AND HEATER WARM-UP TIME, THE 12DQ6B IS IDENTICAL TO THE 6DQ6B.

DIRECT INTERELECTRODE CAPACITANCES — APPROX.

WITHOUT EXTERNAL SHIELD

GRID TO PLATE (G TO P)	0.5	pf
INPUT: (G1 TO H+K, BP + G2)	15.0	pf
OUTPUT: (P TO H+K, BP + B2)	7.0	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES — SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	12.6 VOLTS	600	MA.
HEATER SUPPLY LIMITS:			
CURRENT OPERATION		600±40	MA.
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK		200	VOLTS
HEATER WARM-UP TIME, APPROX. *			SECONDS

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

HORIZONTAL DEFLECTION AMPLIFIER^A

PLATE SUPPLY VOLTAGE, DC (BOOST+DC POWER SUPPLY)	770	VOLTS
PLATE VOLTAGE, PEAK PULSE, POSITIVE	6500	VOLTS
PLATE VOLTAGE, PEAK PULSE, NEGATIVE	1500	VOLTS
PLATE DISSIPATION, ^B	18	WATTS
GRID #1 VOLTAGE, PEAK PULSE, NEGATIVE	330	VOLTS
GRID #2 VOLTAGE, DC	220	VOLTS
GRID #2 DISSIPATION	3.6	WATTS
CATHODE CURRENT, AVERAGE	175	MA.
CATHODE CURRENT, PEAK	610	MA.
GRID #1 CIRCUIT RESISTANCE, ^B	1.0	MEGOHM
BULB TEMPERATURE, (AT HOTTEST POINT)	220	°C

AVERAGE CHARACTERISTICS

PENTODE OPERATION: $E_b = 250V$, $E_{c2} = 150V$, $E_{c1} = -22.5V$.

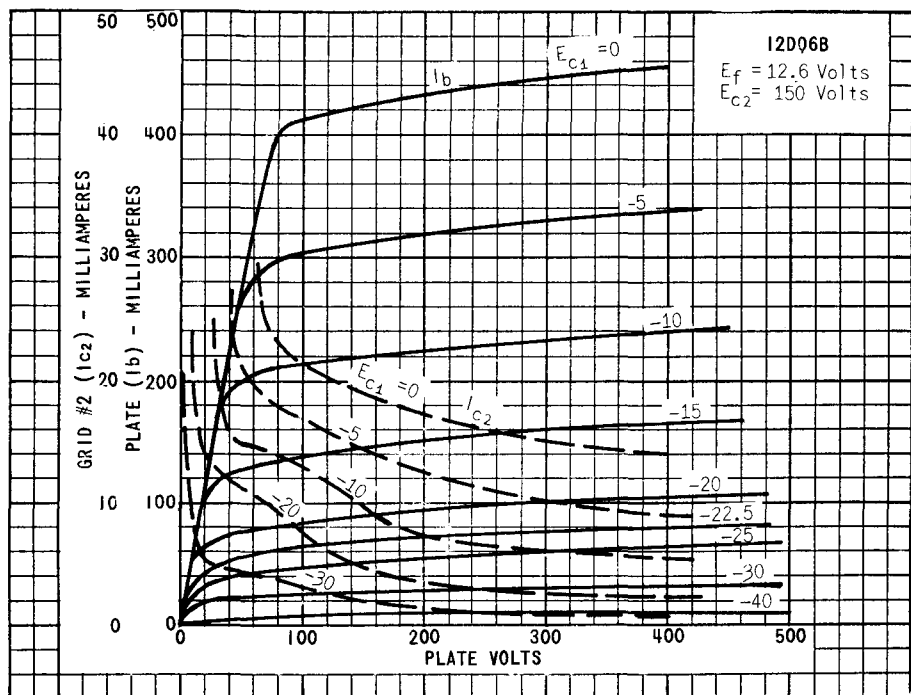
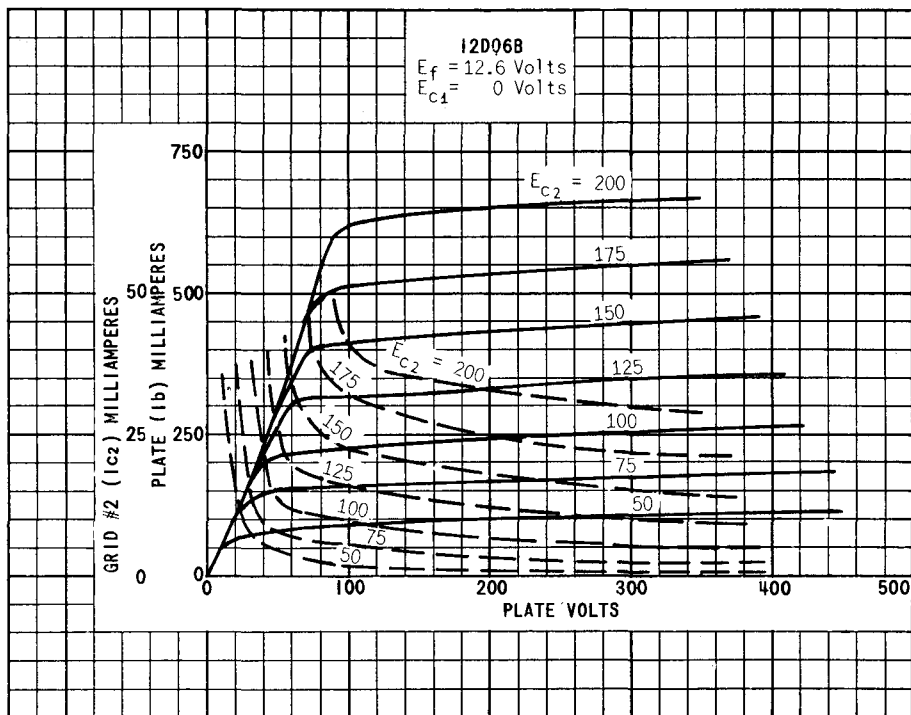
PLATE CURRENT	65	MA.
GRID #2 CURRENT	1.8	MA.
TRANSCONDUCTANCE	7300	μ MHOS
PLATE RESISTANCE, APPROX.	18,000	OHMS
ZERO BIAS: $E_b = 60V$, $E_{c2} = 150V$. (INSTANTANEOUS VALUES)		
PLATE CURRENT	345	MA.
GRID #2 CURRENT	27	MA.
CUTOFF: $I_b = 1$ MA, $E_b = 250$ V, $E_{c2} = 150$ V.		
GRID #1 VOLTAGE, APPROX.	-42	VOLTS
CUTOFF: $I_b = 1$ MA, $E_b = 5000$ V, $E_{c2} = 150$ V.		
GRID #1 VOLTAGE, APPROX.	-100	VOLTS
TRIODE μ : $E_b = E_{c2} = 150$ V, $E_{c1} = -22.5$ V.	4.4	

→ INDICATES A CHANGE.

^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 TUBES 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.

*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.



12DQ6B

$E_f = 12.6$ Volts
 $E_b = 250$ Volts

— I_b
 - - - I_{c2}

GRID VOLTS

PLATE (I_b) MILLIAMPERES
 GRID #2 (I_{c2}) - MILLIAMPERES

The graph shows two sets of curves for the 12DQ6B tube. The top set of curves represents the plate current (I_b) and the bottom set represents the control grid current (I_{c2}). Both sets of curves are plotted against grid voltage (ranging from -60V to 0V). The plate current curves are labeled with values 100, 125, 150, 175, and 200 mA. The control grid current curves are labeled with values 50, 75, 100, 125, 150, 175, and 200 mA. The plate current curves are solid lines, and the control grid current curves are dashed lines. The plate current curves show a sharp increase in current as the grid voltage approaches 0V, while the control grid current curves show a more gradual increase.

