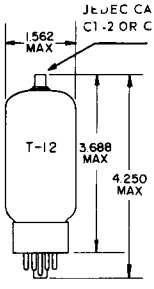
TUNG-SOL

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 B6-198 ←

OUTLINE DRAWING
JEDEC 10-82

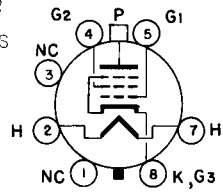
COATED UNIPOTENTIAL CATHODE

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.

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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

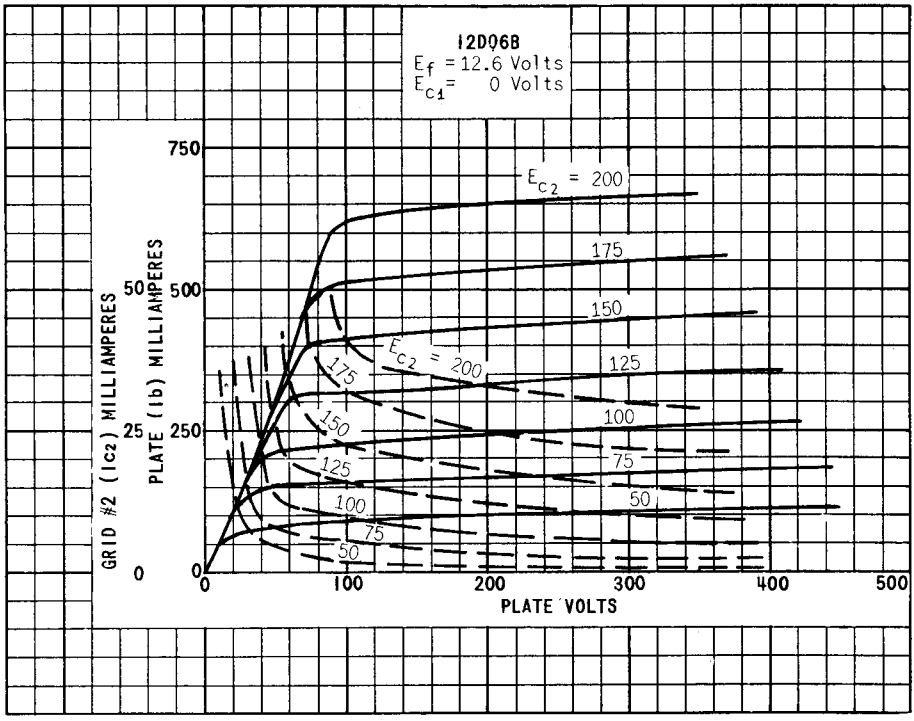
PENTODE OPERATION: Eb = 250V, Ec2 = 150V, Ec1 = -22.5V.		
PLATE CURRENT	65	MA.
GRID #2 CURRENT	1.8	MA.
TRANSCONDUCTANCE	7300	μMHOS
PLATE RESISTANCE, APPROX.	18,000	OHMS
ZERO BIAS: Eb = 60V, Ec2 = 150V. (INSTANTANEOUS VALUES)		
PLATE CURRENT	345	MA.
GRID #2 CURRENT	27	MA.
CUTOFF: Ib = 1 MA, Eb = 250 V, Ec2 = 150 V.		
GRID #1 VOLTAGE, APPROX.	-42	VOLTS
CUTOFF: Ib = 1 Ma, Eb = 5000 V, Ec2 = 150 V.		
GRID #1 VOLTAGE, APPROX.	-100	VOLTS
TRIODE MU: Eb = Ec2 = 150 V, Ec1 = -22.5 V.	4.4	

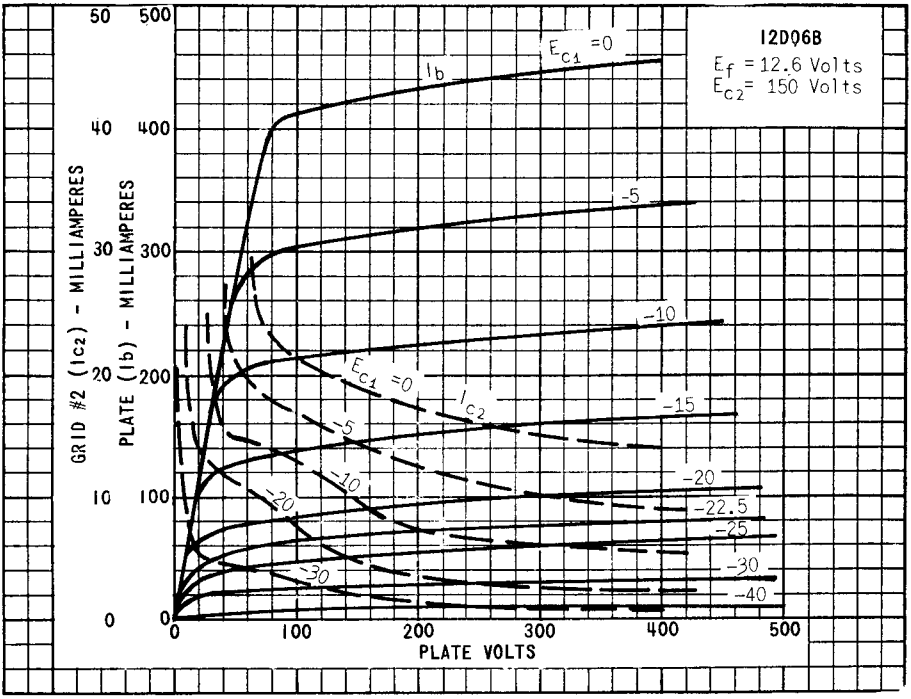
→ INDICATES A CHANGE.

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.

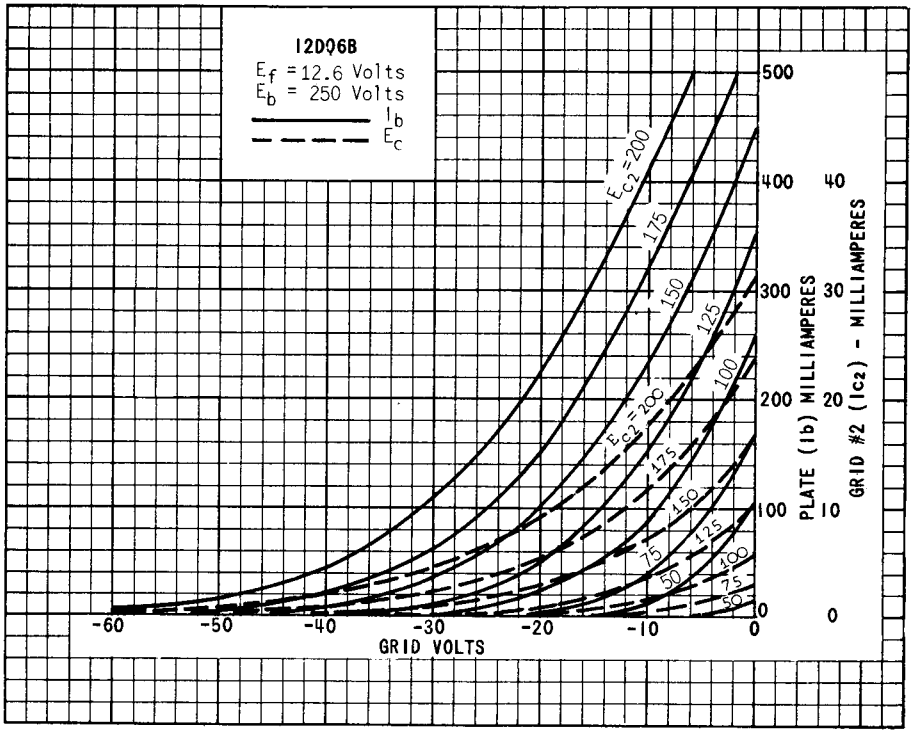
B IN STAGES OPERATING WITH GRID LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.

*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_{c1} = 0 Volts
GRID #2 (I_{c2}) MILLIAMPERES
PLATE (I_b) MILLIAMPERES
PLATE VOLTS
E_{c2} = 200
175
150
125
100
75
50
0
100
200
300
400
500
750
500
250
50
25


12DQ6B
E_f = 12.6 Volts
E_{c2} = 150 Volts
GRID #2 (I_{c2}) - MILLIAMPERES
PLATE (I_b) - MILLIAMPERES
PLATE VOLTS
I_b
I_{c2}
E_{c1} = 0
-5
-10
-15
-20
-22.5
-25
-30
-40
0
100
200
300
400
500
50
40
30
20
10

12DQ6B


12DQ6B
E_f = 12.6 Volts
E_b = 250 Volts
I_b
E_c
E_{c_2} = 200
175
150
125
100
75
50
-60
-50
-40
-30
-20
-10
0
GRID VOLTS
500
400
300
200
100
0
40
30
20
10
0
PLATE (Ib) MILLIAMPERES
GRID #2 (I_{c_2}) - MILLIAMPERES