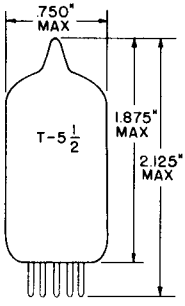
TUNG-SOL



GLASS BULB

MINIATURE BUTTON
7 PIN BASE E7-1

OUTLINE DRAWING
JEDEC 5-2

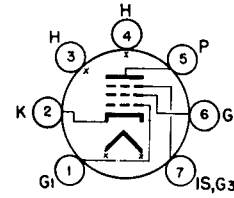
PENTODE

MINIATURE TYPE

COATED UNIPOTENTIAL CATHODE

HEATER
6.3±0.6 VOLTS 300 MA.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 7CM

THE 6CB6 AND 6CB6A ARE SHARP CUTOFF PENTODES USING THE MINIATURE BUTTON 7 PIN BASE. THEY ARE ESPECIALLY DESIGNED FOR USE AS IF AMPLIFIERS OPERATING AT FREQUENCIES ABOVE 20MC, BUT THEY ARE ALSO WELL SUITED FOR USE AS RF AMPLIFIERS IN VHF TELEVISION TUNERS. IN ADDITION, THERMAL CHARACTERISTICS OF THE 6CB6A 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 THE CONTROLLED HEATER WARM-UP TIME THE TWO TUBES ARE IDENTICAL.

DIRECT INTERELECTRODE CAPACITANCES

	WITHOUT SHIELD	WITH[A] SHIELD	
GRID TO PLATE: (G_1 TO P) MAX.	0.025	.015	pf
INPUT: G_1 TO (H+K+G_2+G_3&IS)	6.5	6.5	pf
OUTPUT: P TO (H+K+G_2+G_3&IS)	2.0	3.0	pf

[A] EXTERNAL SHIELD #316 CONNECTED TO PIN #2.

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM[B]

MAXIMUM PLATE VOLTAGE	330	VOLTS
MAXIMUM GRID #2 VOLTAGE	SEE J5-C4-2	
MAXIMUM GRID #2 SUPPLY VOLTAGE	330	VOLTS
MAXIMUM PLATE DISSIPATION	2.3	WATTS
MAXIMUM GRID #2 DISSIPATION	0.55	WATT
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE		
TOTAL DC AND PEAK	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		
DC	100	VOLTS
TOTAL DC AND PEAK	200	VOLTS
HEATER WARM-UP TIME (APPROX.)* (6CB6A ONLY)	11.0	SECONDS

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

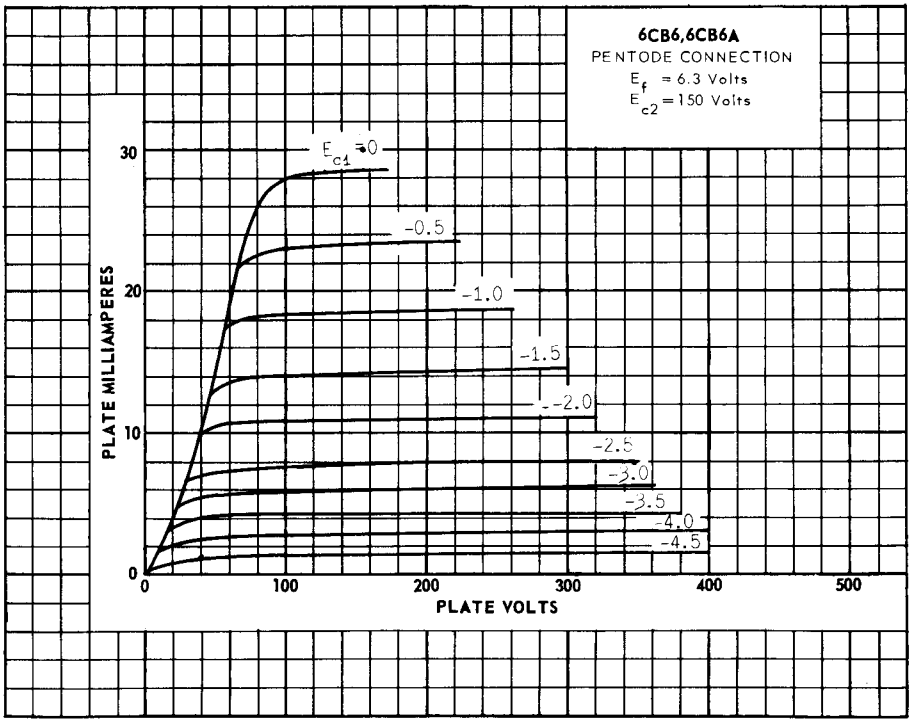
CONTINUED FROM PRECEDING PAGE

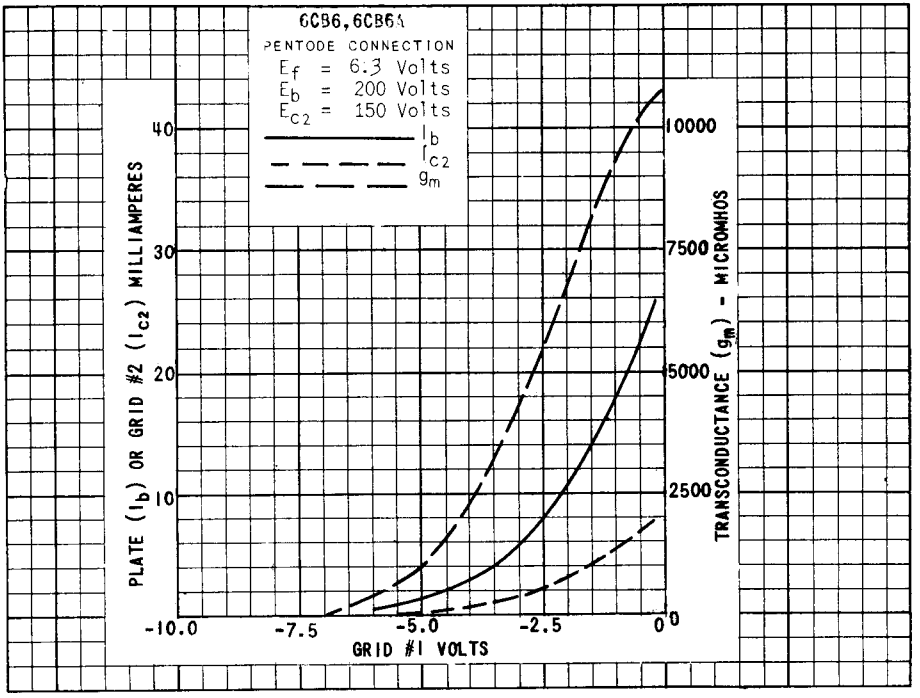
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

PLATE VOLTAGE	125	VOLTS
GRID #2 VOLTAGE	125	VOLTS
GRID #3 VOLTAGE		
CATHODE BIAS RESISTOR	56	OHMS
PLATE RESISTANCE (APPROX.)	0.28	MEGOHM
TRANSCONDUCTANCE	8 000	μMHOS
PLATE CURRENT	13.0	MA.
GRID #2 CURRENT	3.7	MA.
GRID #1 VOLTAGE (APPROX.) FOR I_b=20 μA.	-6.5	VOLTS
PLATE CURRENT AT E_{c1}=-3V., R_k=0	2.8	MA.

[B] DESIGN MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR IN THE TYPES OF SERVICE FOR WHICH THE TUBE IS RATED. THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT INITIALLY AND THROUGHOUT EQUIPMENT LIFE 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.

*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.




6CB6, 6CB6A
PENTODE CONNECTION
E_f = 6.3 Volts
E_b = 200 Volts
E_{c2} = 150 Volts
I_b
I_{c2}
g_m
PLATE (I_b) OR GRID #2 (I_{c2}) MILLIAMPERES
40
30
20
10
TRANSCONDUCTANCE (g_m) - MICROMHOS
10000
7500
5000
2500
0
-10.0
-7.5
-5.0
-2.5
0
GRID #1 VOLTS