

**TUNG-SOL**

HEPTODE

MINIATURE TYPE

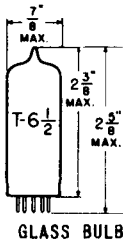
UNIPOENTIAL CATHODE

HEATER

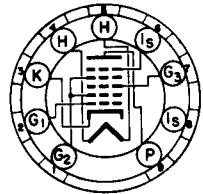
6.3 VOLTS 300 MA.

AC OR DC

ANY MOUNTING POSITION



GLASS BULB



BOTTOM VIEW  
SMALL BUTTON  
9 PIN BASE

THE 6BA7 IS A CATHODE TYPE HIGH GAIN PENTAGRID CONVERTER IN THE SMALL 9-PIN BUTTON CONSTRUCTION. IT IS DESIGNED FOR SERVICE AS A COMBINED LOCAL OSCILLATOR AND MIXER AT HIGH FREQUENCIES, ESPECIALLY IN THE FM BROADCAST BAND.

**DIRECT INTERELECTRODE CAPACITANCES**

WITH NO EXTERNAL SHIELD

GRID #3 TO PLATE: (G <sub>3</sub> TO P) MAX.	0.19	μf
GRID #1 TO GRID #3: (G <sub>1</sub> TO G <sub>3</sub> ) MAX.	0.1	μf
GRID #1 TO PLATE: (G <sub>1</sub> TO P) MAX.	0.05	μf
GRID #1 TO CATHODE: (G <sub>1</sub> TO K)	3.3	μf
GRID #1 TO ALL EXCEPT CATHODE: G <sub>1</sub> TO (H+G <sub>2</sub> +G <sub>4</sub> +G <sub>3</sub> +G <sub>5</sub> +P+IS)	3.4	μf
CATHODE TO ALL EXCEPT GRID #1: K TO (H+G <sub>2</sub> +G <sub>4</sub> +G <sub>3</sub> +G <sub>5</sub> +P+IS)	4	μf
RF INPUT: G <sub>3</sub> TO (H+K+G <sub>1</sub> +G <sub>2</sub> +G <sub>4</sub> +G <sub>5</sub> +P+IS)	9.5	μf
OSCILLATOR INPUT: G <sub>1</sub> TO (H+K+G <sub>2</sub> +G <sub>4</sub> +G <sub>3</sub> +G <sub>5</sub> +P+IS)	6.7	μf
MIXER OUTPUT: P TO (H+K+G <sub>1</sub> +G <sub>2</sub> +G <sub>4</sub> +G <sub>3</sub> +G <sub>5</sub> +IS)	8.3	μf

**RATINGS**

INTERPRETED ACCORDING TO RMA STANDARD M8-210

HEATER VOLTAGE	6.3	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE	90	VOLTS
MAXIMUM PLATE VOLTAGE	300	VOLTS
MAXIMUM GRIDS #2 & #4 VOLTAGE	100	VOLTS
MAXIMUM GRIDS #2 & #4 SUPPLY VOLTAGE	300	VOLTS
MAXIMUM NEGATIVE GRID #3 VOLTAGE	100	VOLTS
MAXIMUM POSITIVE GRID #3 VOLTAGE	0	VOLTS
MAXIMUM GRID #5 & INTERNAL SHIELD VOLTAGE <sup>A</sup>	0	VOLTS
MAXIMUM PLATE DISSIPATION	2	WATTS
MAXIMUM GRIDS #2 & #4 DISSIPATION	1.5	WATTS
MAXIMUM CATHODE CURRENT	22	MA.

<sup>A</sup> INTERNAL SHIELD (PINS #6 AND #8) CONNECTED DIRECTLY TO GROUND.

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CONTINUED FROM PRECEDING PAGE

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

## CONVERTER SERVICE - SEPARATE EXCITATION

THE CHARACTERISTICS SHOWN WITH SEPARATE EXCITATION  
CORRESPOND VERY CLOSELY WITH THOSE OBTAINED IN A  
SELF-EXCITED OSCILLATOR CIRCUIT OPERATING WITH ZERO  
BIAS.

HEATER VOLTAGE	6.3	6.3	VOLTS
HEATER CURRENT	300	300	MA.
PLATE VOLTAGE	100	250	VOLTS
GRIDS #2 & #4 VOLTAGE	100	100	VOLTS
GRID #3 VOLTAGE	-1	-1	VOLTS
GRID #5 AND INTERNAL SHIELD <sup>A</sup>	CONNECTED DIRECTLY TO GROUND		
GRID #1 RESISTOR	20 000	20 000	OHMS
PLATE RESISTANCE (APPROX.)	0.5	1	MEG OHM
CONVERSION TRANSCONDUCTANCE	900	950	μMHOS
PLATE CURRENT	3.6	3.8	MA.
GRIDS #2 & #4 CURRENT	10.2	10	MA.
GRID #1 CURRENT	0.35	0.35	MA.
TOTAL CATHODE CURRENT	14.2	14.2	MA.
CONVERSION TRANSCONDUCTANCE WITH $E_{c3} = -20$ VOLTS	3.5	3.5	μMHOS

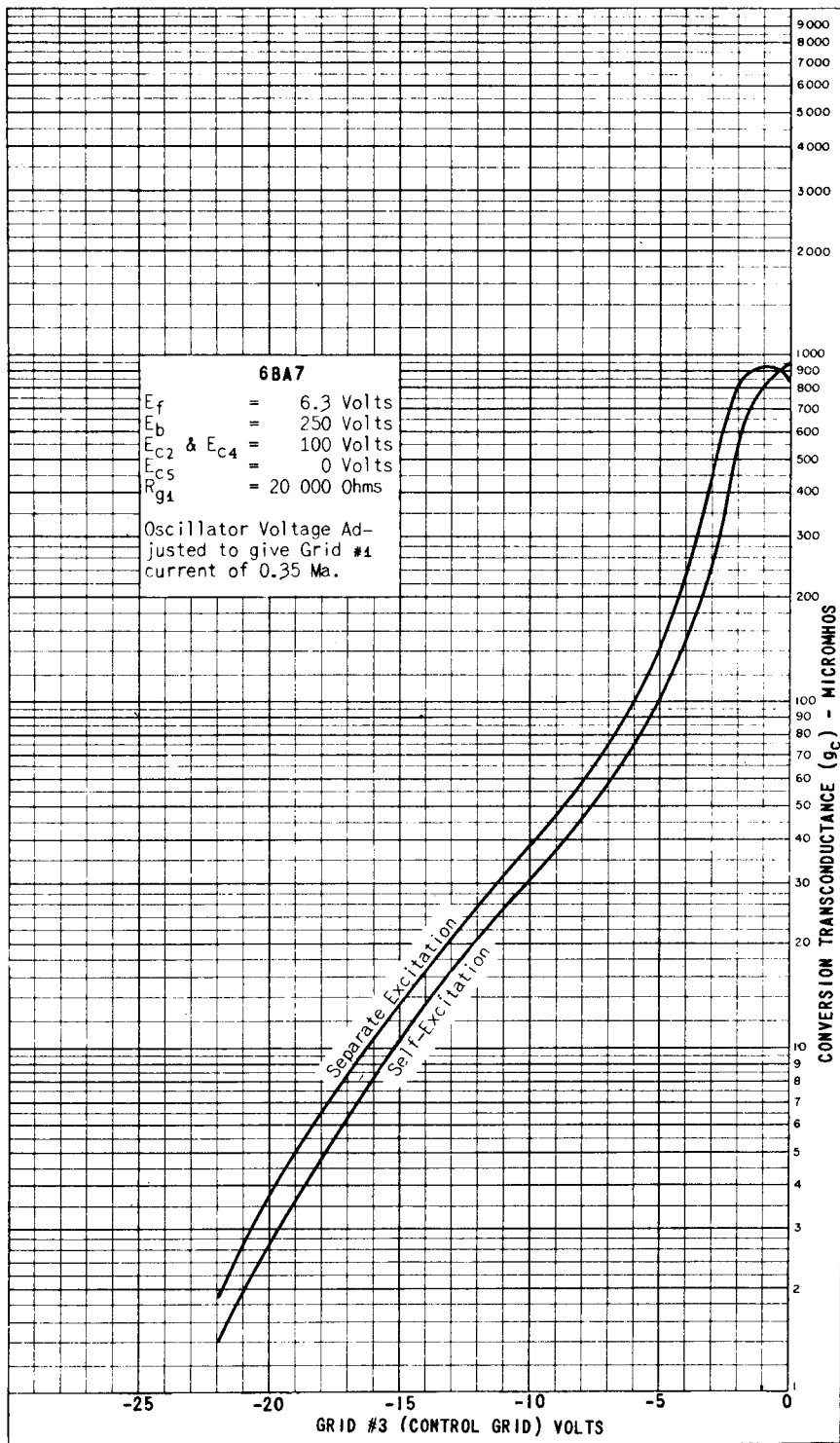
<sup>A</sup> INTERNAL SHIELD (PIRS #6 AND #8) CONNECTED DIRECTLY TO GROUND.

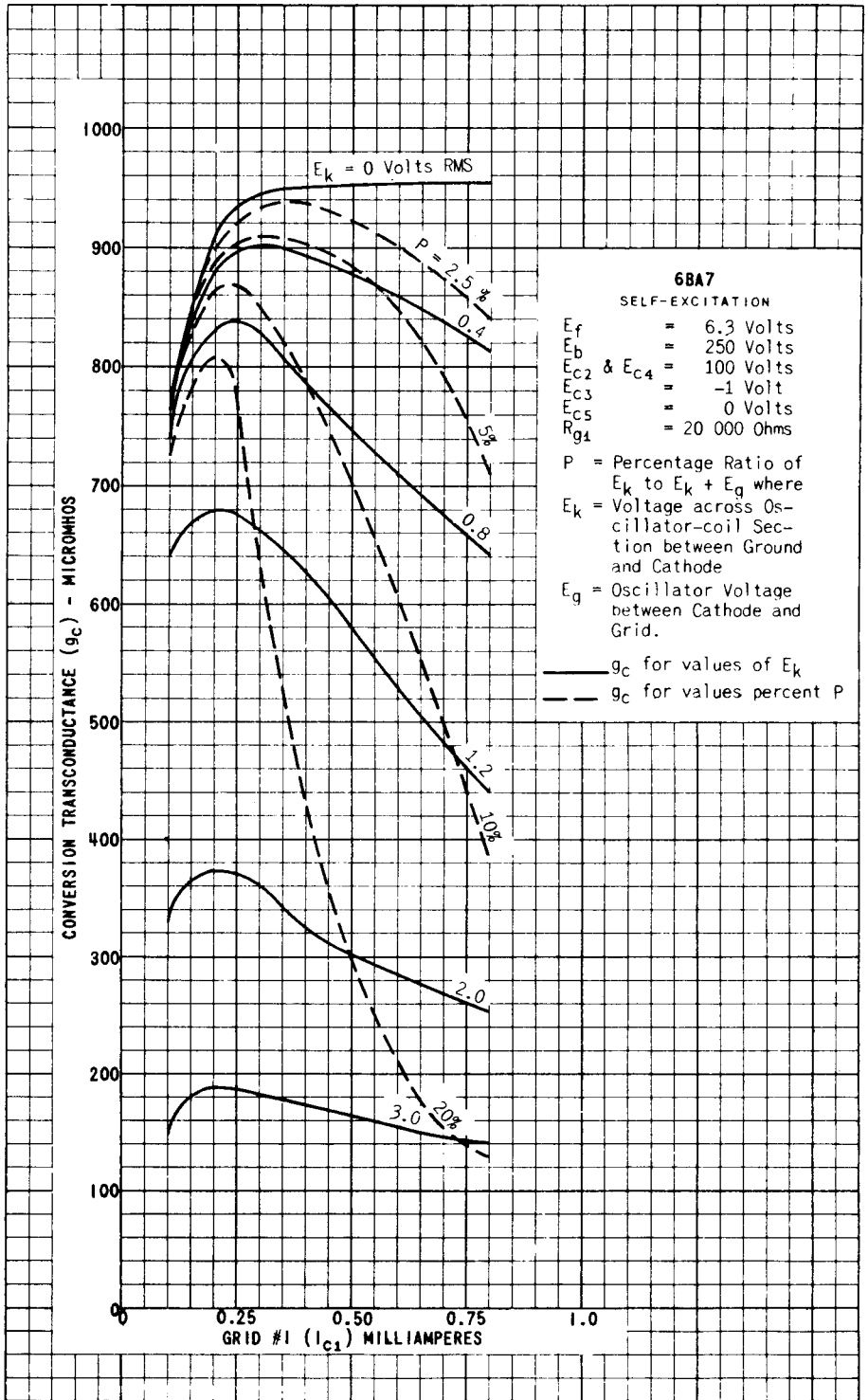
OSCILLATOR TRANSCONDUCTANCE  
NOT OSCILLATING

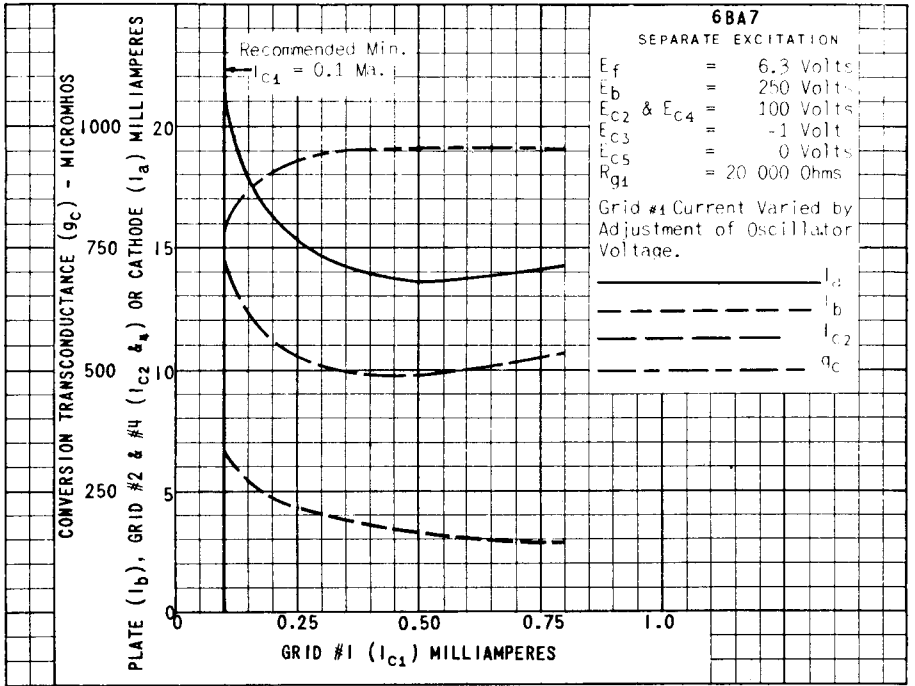
GRID #3 VOLTAGE	0	VOLTS
GRID #1 VOLTAGE	0	VOLTS
GRIDS #2 & #4 CONNECTED TO PLATE	100	VOLTS
PLATE CURRENT	32	MA.
TRANSCONDUCTANCE BETWEEN GRID #1 & GRIDS #2 & #4 CONNECTED TO PLATE	8 000	μMHOS
AMPLIFICATION FACTOR	16.5	

*SIMILAR TYPE REFERENCE: Ratings and Characteristics similar to 6SB7Y.*

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