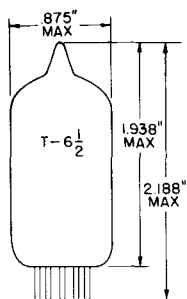


TUNG-SOL



GLASS BULB
MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

TRIODE PENTODE

MINIATURE TYPE

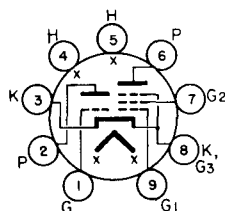
UNIPOTENTIAL CATHODE

HEATER

6.3 VOLTS 450 ± 30 MA.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 9GF

THE 6CG8A CONTAINS A MEDIUM-MU TRIODE AND SHARP CUTOFF PENTODE IN THE 9-PIN MINIATURE CONSTRUCTION. IT IS DESIGNED PRIMARILY FOR USE AS A COMBINED OSCILLATOR AND MIXER IN TELEVISION RECEIVERS UTILIZING AN INTERMEDIATE FREQUENCY IN THE ORDER OF 40 MC. 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.

DIRECT INTERELECTRODE CAPACITANCES

	WITHOUT EXTERNAL SHIELD	WITH EXTERNAL SHIELD ^A	
TRIODE UNIT:			
GRID TO PLATE	1.5	1.5	pf
GRID TO CATHODE & HEATER	2.6	3	pf
PLATE TO CATHODE & HEATER	0.05	1	pf
PENTODE UNIT:			
GRID #1 TO PLATE (MAX.)	0.03	0.016	pf
GRID #1 TO CATHODE & GRID #3, GRID #2, AND HEATER	4.8	5	pf
PLATE TO CATHODE & GRID #3, GRID #2, AND HEATER	0.9	1.6	pf
PENTODE GRID #1 TO TRIODE PLATE (MAX.)	0.05	0.04	pf
PENTODE PLATE TO TRIODE PLATE (MAX.)	0.05	0.007	pf
HEATER TO CATHODE	5.5	5.5 ^B	pf

^A WITH EXTERNAL SHIELD #315 CONNECTED TO CATHODE.^B WITH EXTERNAL SHIELD #315 CONNECTED TO GROUND.

→ MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-235

PENTODE PLATE VOLTAGE	275	VOLTS
TRIODE PLATE VOLTAGE	275	VOLTS
GRID #2 SUPPLY VOLTAGE	275	VOLTS
GRID #2 VOLTAGE	SEE J5-C4 2	
PENTODE PLATE DISSIPATION	2.3	WATTS
GRID #2 DISSIPATION:		
FOR GRID #2 VOLTAGES UP TO 137.5 V.	0.45	WATTS
FOR GRID #2 VOLTAGES BETWEEN 137.5 & 275 V.	SEE J5-C4-2	

CONTINUED ON FOLLOWING PAGE

→ INDICATES A CHANGE.

TUN-6-SOL

CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS - cont'd.

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

POSITIVE DC PENTODE GRID #1 VOLTAGE	0	VOLTS
POSITIVE DC TRIODE GRID VOLTAGE	0	VOLTS
TRIODE PLATE DISSIPATION	1.7	WATTS
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	11	SECONDS

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.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

TYPICAL OPERATION

	TRIODE UNIT ^E AS 250-MC OSCILLATOR	PENTODE ^D AS UNIT MIXER	
PLATE VOLTAGE	150	150	VOLTS
GRID #2 VOLTAGE	---	150	VOLTS
MIXER GRID #1 SUPPLY VOLTAGE	---	-3.5	VOLTS
OSCILLATOR VOLTAGE AT MIXER GRID #1 (RMS)	---	2.6	VOLTS
MIXER GRID #1 CIRCUIT RESISTANCE	---	120 000	OHMS
OSCILLATOR GRID RESISTOR	2700	---	OHMS
CONVERSION TRANSCONDUCTANCE	---	2 100	μMHOS
PLATE CURRENT	13	6.2	MA.
GRID #2 CURRENT	---	1.8	MA.
GRID #1 CURRENT	3.6	---	MA.
GRID #1 CURRENT	---	2	μAMP
OSCILLATOR POWER OUTPUT (APPROX.)	0.5	---	WATT

MAXIMUM CIRCUIT VALUES:

GRID #1 CIRCUIT RESISTANCE:		
FOR FIXED-BIAS OPERATION (MAX.)	0.1	MEGOHM
FOR CATHODE-BIAS OPERATION (MAX.)	0.5	MEGOHM

CHARACTERISTICS

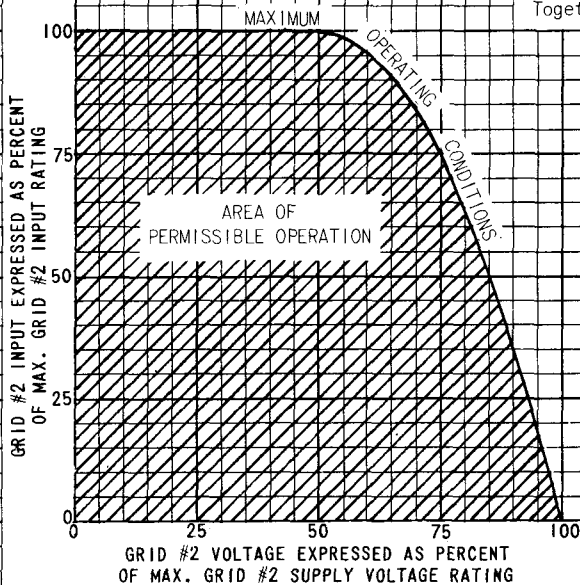
	TRIODE UNIT	PENTODE UNIT	
PLATE VOLTAGE	100	250	VOLTS
GRID #2 VOLTAGE	---	150	VOLTS
CATHODE-BIAS RESISTOR	100	200	OHMS
AMPLIFICATION FACTOR	40	---	
PLATE RESISTANCE (APPROX.)	6900	750 000	OHMS
TRANSCONDUCTANCE	5800	4 600	μMHOS
GRID #1 VOLTAGE (APPROX.)			
FOR PLATE CURRENT OF 10 μAMP	-10	-10	VOLTS
PLATE CURRENT	8.5	7.7	MA.
GRID #2 CURRENT	---	1.6	MA.

^D WITH SEPARATE EXCITATION AND TRIODE UNIT GROUNDED.

^E IN TV OR FM RECEIVERS, IT IS GENERALLY DESIRABLE TO OPERATE THE OSCILLATOR WITH LESS POWER INPUT THAN SHOWN IN THE TABULATED DATA IN ORDER TO AVOID OVER-EXCITATION AND EXCESSIVE OSCILLATOR RADIATION.

6CG8A

This Curve also Applies
To Types in which Grids
#2 and #4 are Connected
Together within the Tube

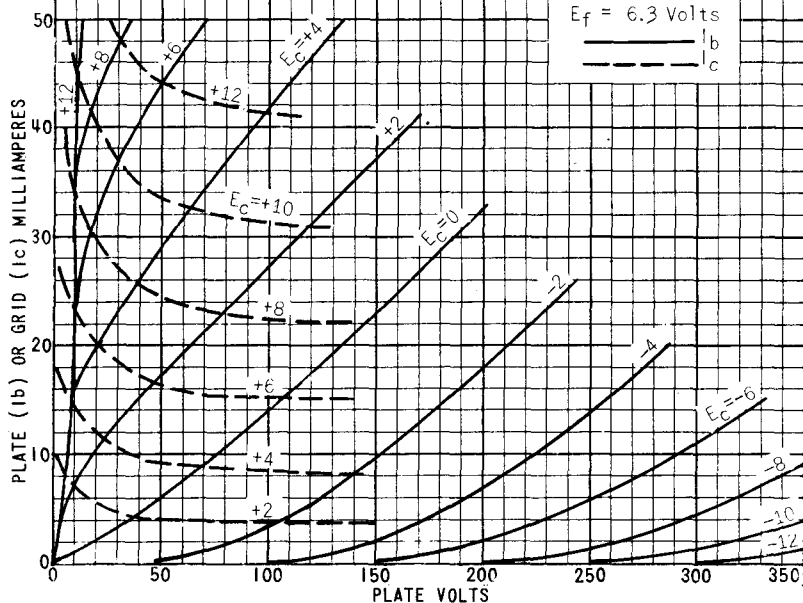


6CG8A

TRIODE UNIT

 $E_f = 6.3$ Volts

— i_b
- - - i_c



6CG8A

