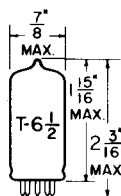


TUNG-SOL

TRIODE PENTODE
MINIATURE TYPE

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

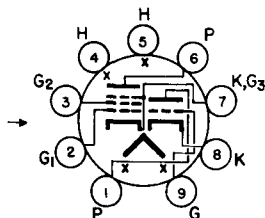
COATED UNIPOTENTIAL CATHODE

HEATER

6.3 VOLTS 0.45±6% AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 9AE

THE 6EA8 IS A SHARP CUTOFF PENTODE AND A TRIODE IN THE 9-PIN MINIATURE CONSTRUCTION. EACH SECTION HAS ITS OWN CATHODE AND IS ELECTRICALLY INDEPENDENT. THE TUBE IS INTENDED PRIMARILY FOR USE AS A COMBINED TRIODE OSCILLATOR AND PENTODE MIXER IN TELEVISION RECEIVERS. 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. EXCEPT FOR HEATER RATINGS, THE 6EA8 IS IDENTICAL TO THE 5EA8.

DIRECT INTERELECTRODE CAPACITANCES

	WITH ^A SHIELD	WITHOUT SHIELD	
PENTODE SECTION:			
GRID #1 TO PLATE: (Pg1 TO Pp) (MAX.)	0.01	0.02	pf
INPUT: Pg1 TO (H+Pk+Pg2+Pg3+I.S.)	5.0	5.0	pf
OUTPUT: Pp TO (H+Pk+Pg2+Pg3+I.S.)	3.4	2.6	pf
HEATER TO CATHODE: (Pk TO h)	3.0 ^B	3.0	pf
TRIODE SECTION:			
GRID TO PLATE: (Tg TO Tp)	1.7	1.7	pf
INPUT: Tg TO (Tk+H+Pk+Pg3+I.S.)	3.2	3.0	pf
OUTPUT: Tp TO (Tk+H+Pk+Pg3+I.S.)	1.9	1.4	pf
HEATER TO CATHODE: (Tk TO h)	3.0 ^B	3.0	pf

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

	PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	6.3	6.3	VOLTS
MAXIMUM PLATE VOLTAGE	330	330	VOLTS
MAXIMUM SCREEN SUPPLY VOLTAGE	330	---	VOLTS
MAXIMUM SCREEN VOLTAGE			
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	0	VOLTS
MAXIMUM PLATE DISSIPATION	3.1	2.5	WATTS
MAXIMUM SCREEN DISSIPATION	0.55	---	WATTS

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS — CONT'D.
 INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

	PENTODE SECTION	TRIODE SECTION	
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC COMPONENT	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200	200	VOLTS
HEATER WARM-UP TIME*		11.0	SECONDS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

AVERAGE CHARACTERISTICS

	PENTODE SECTION	TRIODE SECTION	
PLATE VOLTAGE	125	150	VOLTS
SCREEN VOLTAGE	125	---	VOLTS
GRID #1 VOLTAGE	-1.0	---	
CATHODE-BIAS RESISTOR	---	56	OHMS
AMPLIFICATION FACTOR	---	40	
PLATE RESISTANCE (APPROX.)	200 000	5 000	OHMS
TRANSCONDUCTANCE	6 400	8 500	μAMPS
PLATE CURRENT	12	18	MA.
SCREEN CURRENT	4.0	---	MA.
GRID #1 VOLTAGE (APPROX.)			
$I_b = 10 \mu\text{AMPS.}$	-9	-12	VOLTS

^A WITH EXTERNAL SHIELD 315 CONNECTED TO CATHODE OF SECTION UNDER TEST UNLESS OTHERWISE INDICATED.

^B WITH EXTERNAL SHIELD 315 CONNECTED TO GROUND.

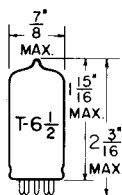
* HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

→ INDICATES A CHANGE.

TUNG-SOL

TRIODE PENTODE

MINIATURE TYPE



GLASS BULB

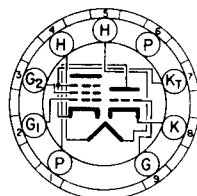
COATED UNIPOTENTIAL CATHODE

HEATER

6.3 VOLTS 0.45±6% AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

SMALL BUTTON
9 PIN BASE

9AE

THE 6EA8 IS A SHARP CUTOFF PENTODE AND A TRIODE IN THE 9-PIN MINIATURE CONSTRUCTION. EACH SECTION HAS ITS OWN CATHODE AND IS ELECTRICALLY INDEPENDENT. THE TUBE IS INTENDED PRIMARILY FOR USE AS A COMBINED TRIODE OSCILLATOR AND PENTODE MIXER IN TELEVISION RECEIVERS. 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. EXCEPT FOR HEATER RATINGS, THE 6EA8 IS IDENTICAL TO THE 5EA8.

DIRECT INTERELECTRODE CAPACITANCES ←

	WITH ^A SHIELD	WITHOUT SHIELD	
PENTODE SECTION:			
GRID #1 TO PLATE: (Pg1 TO Pp) (MAX.)	0.01	0.02	μuf
INPUT: Pg1 TO (H+Pk+Pg2+Pg3+I.S.)	5.0	5.0	μuf
OUTPUT: Pp TO (H+Pk+Pg2+Pg3+I.S.)	3.4	2.6	μuf
HEATER TO CATHODE: (Pk TO h)	3.0 ^B	3.0	μuf
TRIODE SECTION:			
GRID TO PLATE: (Tg TO Tp)	1.7	1.7	μuf
INPUT: Tg TO (Tk+H+Pk+Pg3+I.S.)	3.2	3.0	μuf
OUTPUT: Tp TO (Tk+H+Pk+Pg3+I.S.)	1.9	1.4	μuf
HEATER TO CATHODE: (Tk TO H)	3.0 ^B	3.0	μuf

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

	PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	6.3	6.3	VOLTS
MAXIMUM PLATE VOLTAGE	330	330	VOLTS
MAXIMUM SCREEN SUPPLY VOLTAGE	330	---	VOLTS
MAXIMUM SCREEN VOLTAGE			
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	0	VOLTS
MAXIMUM PLATE DISSIPATION	3.1	3.0	WATTS
MAXIMUM SCREEN DISSIPATION	0.5 ^B	---	WATTS

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS — CONT'D.

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

	PENTODE SECTION	TRIODE SECTION	
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC COMPONENT	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200	200	VOLTS
HEATER WARM-UP TIME*	11.0		SECONDS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

AVERAGE CHARACTERISTICS

	PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	6.3	6.3	VOLTS
HEATER CURRENT	0.45	0.45	AMP.
PLATE VOLTAGE	125	150	VOLTS
SCREEN VOLTAGE	125	---	VOLTS
GRID #1 VOLTAGE	-1.0	---	
CATHODE-BIAS RESISTOR	---	56	OHMS
AMPLIFICATION FACTOR	---	40	
PLATE RESISTANCE (APPROX.)	80 000	5 000	OHMS
TRANSCONDUCTANCE	6 400	8 500	μAMPS
PLATE CURRENT	12	18	MA.
SCREEN CURRENT	4.0	---	MA.
GRID #1 VOLTAGE (APPROX.)			
$I_b = 10 \mu\text{AMPS.}$	-9	-12	VOLTS

^A WITH EXTERNAL SHIELD 315 CONNECTED TO CATHODE OF SECTION UNDER TEST UNLESS OTHERWISE INDICATED

^B WITH EXTERNAL SHIELD 315 CONNECTED TO GROUND.

* 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.

