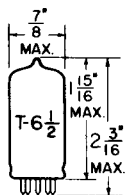


TUNG-SOL**TRIODE PENTODE**
MINIATURE TYPE**GLASS BULB**

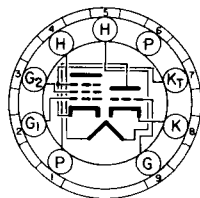
COATED UNIPOTENTIAL CATHODE

HEATER

18.9 VOLTS 0.15 AMP.

AC OR DC

ANY MOUNTING POSITION

**BOTTOM VIEW**SMALL BUTTON
9 PIN BASE

9AE

THE 19EA8 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 19EA8 IS IDENTICAL TO THE 6EA8.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD ^A	WITHOUT SHIELD	
PENTODE SECTION:			
GRID #1 TO PLATE (MAX.)	0.01	0.02	$\mu\mu\text{f}$
INPUT	5.0	5.0	$\mu\mu\text{f}$
OUTPUT	3.4	2.6	$\mu\mu\text{f}$
TRIODE SECTION:			
GRID TO PLATE	1.7	1.7	$\mu\mu\text{f}$
INPUT	3.2	3.0	$\mu\mu\text{f}$
OUTPUT	1.1	0.3	$\mu\mu\text{f}$
HEATER TO CATHODE (EACH SECTION) ^B	3.0	3.0	$\mu\mu\text{f}$

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

	PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	18.9	18.9	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	0.55	---	WATTS

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	18.9	18.9	VOLTS
HEATER CURRENT	0.15	0.15	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.

