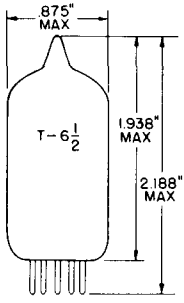
TUNG-SOL

TRIODE PENTODE

MINIATURE TYPE



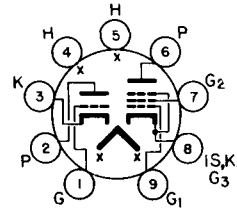
GLASS BULB
MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

COATED UNIPOTENTIAL CATHODE

FOR USE IN

FM AND TELEVISION RECEIVERS

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM

JEDEC 9FA

THE 6BR8A IS A TRIODE-PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. THE TUBE MAY BE USED AS A LOCAL OSCILLATOR PENTODE MIXER FOR FM OR TELEVISION RECEIVERS OR IN THE MANY COMBINED FUNCTIONS IN SUCH RECEIVERS. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED RROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD[A]	WITHOUT SHIELD	
PENTODE GRID 1 TO PENTODE PLATE (Pg1 TO Pp) MAX.	0.010	0.020	pf
PENTODE INPUT: Pg1 TO (H+Pg2+Pk,g3,i.s.)	4.6	4.6	pf
PENTODE OUTPUT: Pp TO (H+Pg2+Pk,g3,i.s.)	3.2	2.4	pf
PENTODE CATHODE TO HEATER: H TO (Pk,g3,i.s.)	2.4[B]	2.4	pf
TRIODE GRID TO TRIODE PLATE: (Tg TO Tp)	1.8	1.8	pf
TRIODE INPUT: Tg TO (Tk+H+Pk,g3,i.s.)	2.8	2.8	pf
TRIODE OUTPUT: Tp TO (Tk+H+Pk,g3,i.s.)	2.0	1.5	pf
TRIODE CATHODE TO HEATER (Tk TO H)	2.4[B]	2.4	pf
PENTODE GRID TO TRIODE PLATE (Pg TO Tp) (MAX.)	0.20	0.20	pf
PENTODE PLATE TO TRIODE PLATE (Pp TO Tp) (MAX)	.02	0.10	pf

[A] EXTERNAL SHIELD 315 CONNECTED TO PIN 4.

[B] EXTERNAL SHIELD 315 CONNECTED TO PIN 6.

* INDICATES AN ADDITION.

INDICATES A CHANGE.

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HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	450	MA.
HEATER WARM-UP TIME [C]		11	SECONDS
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION (HEATER IN PARALLEL)		6.3±0.6	VOLTS
CURRENT OPERATION (HEATER IN SERIES)		450±25	MA.
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

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PENTODE PLATE VOLTAGE	330	VOLTS
TRIODE PLATE VOLTAGE	330	VOLTS
GRID 2 SUPPLY VOLTAGE	330	VOLTS
GRID 2 VOLTAGE	SEE J5-C4-2	
PENTODE PLATE DISSIPATION	3.0	WATTS
GRID 2 DISSIPATION	0.55	WATT
POSITIVE DC GRID 1 VOLTAGE	0	VOLTS
POSITIVE DC TRIODE GRID VOLTAGE	0	VOLTS
TRIODE PLATE DISSIPATION	2.5	WATTS

TYPICAL OPERATING CHARACTERISTICS

CLASS A1 AMPLIFIER

	TRIODE	PENTODE	
PLATE VOLTAGE	125	125	VOLTS
GRID 2 VOLTAGE	----	110	VOLTS
GRID 1 VOLTAGE	-1.0	-1.0	VOLTS
TRANSCONDUCTANCE	7500	5000	μMHOS
PLATE CURRENT	13.5	9.5	MA.
GRID 2 CURRENT	----	3.5	MA.
PLATE RESISTANCE (APPROX.)	----	0.2	MEGOHM
AMPLIFICATION FACTOR	40	----	
GRID 1 VOLTAGE (APPROX.) FOR Ib=20 μA	-9	-9	VOLTS
ZERO BIAS TRANSCONDUCTANCE (WITH Eb=100 V; Ec2=70V)	----	6000	μMHOS

[C] 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.

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