TUNG-SOL

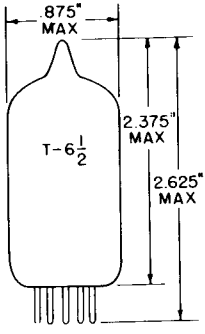
TWIN PENTODE

MINIATURE TYPE

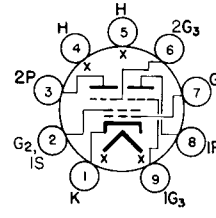
COATED UNIPOTENTIAL CATHODE

FOR T.V. APPLICATIONS

ANY MOUNTING POSITION



GLASS BULB
SMALL BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-3



BOTTOM VIEW
BASING DIAGRAM
JEDEC 9FG

THE 4HS8 IS A MINIATURE TWIN PENTODE THAT INCORPORATES SEPARATE PLATES AND #3 GRIDS FOR THE TWO SECTIONS TOGETHER WITH A COMMON SCREEN, #1 GRID, AND CATHODE. IT IS INTENDED FOR USE AS A COMBINED SYNC-AGC TUBE IN TELEVISION RECEIVERS.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.

WITHOUT EXTERNAL SHIELD

GRID #3 TO PLATE, EACH SECTION	2.0	pf
GRID #1 TO ALL	6.0	pf
GRID #3 (EACH SECTION) TO ALL	3.6	pf
PLATE (EACH SECTION) TO ALL	3.0	pf
GRID #3 (SECTION 1) TO GRID #3 (SECTION 2), MAX.	0.015	pf

HEATER RATINGS AND CHARACTERISTICS

DESIGN-MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	4.2 VOLTS	450	MA.
HEATER SUPPLY LIMITS:			
CURRENT OPERATION		450±25	MA.
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC COMPONENT		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK		200	VOLTS
HEATER WARM-UP TIME[A]		11	SECONDS

A
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.

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PLATE VOLTAGE, EACH SECTION	300	VOLTS
SCREEN VOLTAGE	150	VOLTS
POSITIVE DC GRID #3 VOLTAGE, EACH SECTION	3.0	VOLTS
NEGATIVE DC GRID #3 VOLTAGE, EACH SECTION	50	VOLTS
PEAK POSITIVE GRID #3 VOLTAGE, EACH SECTION	50	VOLTS
NEGATIVE DC GRID #1 VOLTAGE	50	VOLTS
PLATE DISSIPATION, EACH SECTION	1.1	WATTS
SCREEN DISSIPATION	0.75	WATT
DC CATHODE CURRENT	12	MA.
GRID #1 CIRCUIT RESISTANCE	0.5	MEGOHM
GRID #3 CIRCUIT RESISTANCE, EACH SECTION	0.5	MEGOHM

TYPICAL OPERATING CHARACTERISTICS

AVERAGE CHARACTERISTICS - BOTH SECTIONS OPERATING

PLATE VOLTAGE, EACH SECTION	100	100	VOLTS
SCREEN VOLTAGE	67.5	67.5	VOLTS
GRID #3 VOLTAGE, EACH SECTION	-10	0	VOLTS
GRID #1 VOLTAGE [B]			
PLATE CURRENT, EACH SECTION	---	2.0	MA.
SCREEN CURRENT	7.0	4.4	MA.
CATHODE CURRENT	7.1	8.5	MA.

AVERAGE CHARACTERISTICS - EACH SECTION SEPARATELY

WITH PLATE & GRID #3 OF OPPOSITE SECTION GROUNDED

PLATE VOLTAGE	100	100	VOLTS
SCREEN VOLTAGE	67.5	67.5	VOLTS
GRID #3 VOLTAGE	0	0	VOLTS
GRID #1 VOLTAGE	0	B	VOLTS
GRID #3 TRANSCONDUCTANCE	---	450	μMHOS
GRID #1 TRANSCONDUCTANCE	1100	---	μMHOS
PLATE CURRENT	---	2.0	MA.
GRID #3 VOLTAGE, (APPROX.) AT Ib = 100 μA	---	-3.5	VOLTS
GRID #1 VOLTAGE, (APPROX.) Ib = 100 μAMPS.	---	-2.3	VOLTS

[B] WITH GRID CURRENT ADJUSTED FOR 100 MICROAMPERES DC.

SIMILAR TYPE REFERENCE: *Except for heater ratings, and heater warm-up time, the 4HS8 is identical to the 6HS8.*