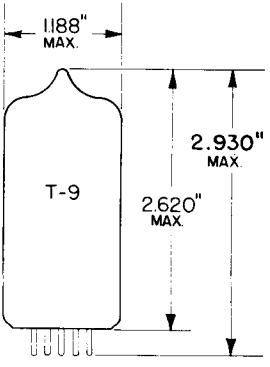
TUNG-SOL

DOUBLE TRIODE



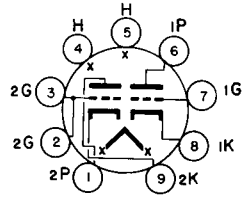
GLASS BULB
BASE E9-68
JEDEC OUTLINE 9-70

COATED UNIPOTENTIAL CATHODE

HEATER

9.7 VOLTS 0.60 AMP.

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 9HF

THE 10EW7 IS A DISSIMILAR DOUBLE TRIODE UTILIZING THE 9T9 BULB AND PIN CONFIGURATION. THE TUBE IS DESIGNED TO SERVE AS A COMBINED VERTICAL DEFLECTION OSCILLATOR AND AMPLIFIER. EXCEPT FOR HEATER CHARACTERISTICS AND HEATER WARM-UP TIME, THE 10EW7 IS IDENTICAL TO THE 6EW7.

THE 9T9 DESIGN UTILIZES A T-9 (1 1/8" DIA.)BULB BASED TO FIT MOST STANDARD 9 PIN MINIATURE SOCKETS.

DIRECT INTERELECTRODE CAPACITANCES

WITHOUT EXTERNAL SHIELD

	SECT #1	SECT. 2	
GRID TO PLATE	4.2	9.0	μμf
INPUT: G TO (H+K)	2.2	7.0	μμf
OUTPUT: P TO (H+K)	0.4	1.2	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM [B]

VERTICAL DEFLECTION OSCILLATOR AND AMPLIFIER [C]

	SECT. #1 OSCILLATOR [D]	SECT. #2 AMPLIFIER [D]	
HEATER VOLTAGE	9.7		VOLTS
MAXIMUM PLATE VOLTAGE	330	330	VOLTS
MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE	---	1500	VOLTS
MAXIMUM PEAK NEGATIVE PULSE GRID VOLTAGE	400	250	VOLTS
MAXIMUM PLATE DISSIPATION [E]	1.5	10	WATTS
MAXIMUM AVERAGE CATHODE CURRENT	22	50	MA.
MAXIMUM PEAK CATHODE CURRENT	77	175	MA.
MAXIMUM GRID CIRCUIT RESISTANCE:			
SELF BIAS	2.2	2.2	MEGOHMS

→ INDICATES A CHANGE.

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RATINGS - CONT'D.
INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM [B]

VERTICAL DEFLECTION OSCILLATOR AND AMPLIFIER[C]

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
HEATER WARM-UP TIME (APPROX.)*	11.0	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.

AVERAGE CHARACTERISTICS

	SECT. #1[D]	SECT. #2[D]	
HEATER VOLTAGE		9.7	VOLTS
HEATER CURRENT[A]		0.60	AMP.
PLATE VOLTAGE	250	150	VOLTS
GRID #1 VOLTAGE	-11	-17.5	VOLTS
PLATE CURRENT	5.5	45	MA.
TRANSCONDUCTANCE	2000	7500	μMHOS
AMPLIFICATION FACTOR	17.5	6.0	
PLATE RESISTANCE (APPROX.)	8750	800	OHMS
E_c FOR I_b = 10 μA (APPROX.)	-20	---	VOLTS
E_c FOR I_b = 100 μA (APPROX.)	---	-40	VOLTS
I_b AT E_c =-25 VDC	---	8	MA.
I_b WITH E_b =60 V AND E_c=0 V (INSTANTANEOUS VALUES)		95	MA.

[A] FOR SERIES HEATER OPERATION, EQUIPMENT SHOULD BE SO DESIGNED SO THAT AT NORMAL SUPPLY VOLTAGE BOGEY TUBES WILL OPERATE AT THIS VALUE OF HEATER CURRENT.

[B] DESIGN-MAXIMUM RATINGS ARE LIMITING VALUES OF OPERATING AND ENVIRONMENTAL CONDITIONS APPLICABLE TO A BOGEY ELECTRON DEVICE OF A SPECIFIED TYPE AS DEFINED BY ITS PUBLISHED DATA, AND SHOULD NOT BE EXCEEDED UNDER THE WORST PROBABLE CONDITIONS. THE DEVICE MANUFACTURER CHOOSES THESE VALUES TO PROVIDE ACCEPTABLE SERVICEABILITY OF THE DEVICE, TAKING RESPONSIBILITY FOR THE EFFECTS OF CHANGES IN OPERATING CONDITIONS DUE TO VARIATIONS IN DEVICE CHARACTERISTICS. THE EQUIPMENT MANUFACTURER SHOULD DESIGN SO THAT INITIALLY AND THROUGHOUT LIFE NO DESIGN-MAXIMUM VALUE FOR THE INTENDED SERVICE IS EXCEEDED WITH A BOGEY DEVICE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, SIGNAL VARIATION, AND ENVIRONMENTAL CONDITIONS.

[C] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION". THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15 PERCENT OF A SCANNING CYCLE.

[D] SECTION #1 CONNECTS TO PINS 6, 7 AND 8. SECTION #2 CONNECTS TO PINS 1, 2, 3 AND 9.

[E] IN STAGES OPERATING WITH GRID LEAK BIAS, AN ADEQUATE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.