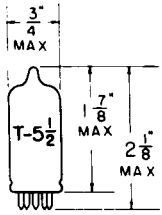
TUNG-SOL

PENTAGRID AMPLIFIER

MINIATURE TYPE



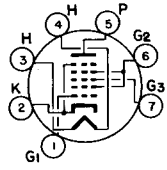
GLASS BULB

MINIATURE BUTTON
9 PIN BASE E7-1
OUTLINE DRAWING
JEDEC 5-2

COATED UNIPOTENTIAL CATHODE

HEATER
18 VOLTS 0.10 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 7CH

THE 18FX6A IS A DUAL CONTROL PENTAGRID AMPLIFIER IN THE 7 PIN MINIATURE CONSTRUCTION. IT IS ESPECIALLY SUITED FOR USE IN AC/DC RADIOS THAT EMPLOY 100 MA. SERIES CONNECTED HEATERS. EXCEPT FOR HEATER RATINGS, THE 18FX6A IS IDENTICAL TO THE 18FX6.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD[A]	WITHOUT SHIELD	
GRID #3 TO PLATE (MAX.)	0.25	0.30	μμf
GRID #3 TO GRID #1 (MAX.)	0.15	0.15	μμf
GRID #3 INPUT: G3 TO (H+K+G1+G2+4+G5+P)	7.0	7.0	μμf
GRID #1 INPUT: G1 TO (H+K+G2+4+G3+G5+P)	5.5	5.5	μμf
OUTPUT: P TO (H+K+G1+G2+4+G3+G5)	13.0	8.0	μμf
GRID #1 TO CATHODE	3.0	3.0	μμf
CATHODE TO ALL ELECTRODES EXCEPT GRID #1	20.0	15.0	μμf
GRID #1 TO PLATE	0.05	0.1	μμf

[A] SHIELD #316 CONNECTED TO CATHODE.

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM[B]

HEATER CURRENT [C]	0.100±0.006	AMP.
MAXIMUM PLATE VOLTAGE	150	VOLTS
MAXIMUM #2 & GRID #4 SUPPLY VOLTAGE	150	VOLTS
MAXIMUM GRID #2 & GRID #4 VOLTAGE	110	VOLTS
MAXIMUM PLATE DISSIPATION	1.0	WATT
MAXIMUM GRID #2 & GRID #4 DISSIPATION	1.2	WATT
MAXIMUM HEATER–CATHODE VOLTAGE	100	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE TOTAL DC AND PEAK	100	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE TOTAL DC AND PEAK	100	VOLTS
HEATER WARM-UP TIME*	20	SECONDS

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

SEPARATE EXCITATION

HEATER VOLTAGE (SERIES OPERATION)	18	VOLTS
HEATER CURRENT[D] (SERIES OPERATION)	0.10	AMP.
PLATE VOLTAGE	100	VOLTS
GRID #2 VOLTAGE	100	VOLTS
GRID #3 VOLTAGE	-1.5	VOLTS
GRID #1 RESISTANCE	20 000	OHMS
GRID #1 CURRENT	0.5	MA.
PLATE CURRENT	2.3	MA.
GRID #2 CURRENT	6.2	MA.
CONVERSION TRANSCONDUCTANCE	480	μMHOS
PLATE RESISTANCE (APPROX.)	0.4	MEGOHM
CATHODE CURRENT	9	MA.
GRID #3 VOLTAGE (APPROX.) FOR G_c = 10 μMHOS	-21	VOLTS

OSCILLATOR SECTION – NON OSCILLATING

GRID #3 VOLTAGE	0	VOLTS
GRID #1 VOLTAGE	0	VOLTS
GRID #2 CONNECTED TO PLATE	100	VOLTS
CATHODE CURRENT	24	MA.
TRANSCONDUCTANCE BETWEEN GRID #1, GRID #2 & GRID #4 CONNECTED TO PLATE	7000	μMHOS
AMPLIFICATION FACTOR BETWEEN GRID #1, GRID #2 & #4 CONNECTED TO PLATE	22	
GRID #1 VOLTAGE (APPROX.) FOR I_b = 20 μA	-9.2	VOLTS

[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]HEATER VOLTAGE SUPPLY VARIATIONS SHALL BE RESTRICTED TO MAINTAIN HEATER CURRENT WITHIN THE SPECIFIED VALUES.

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

*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.