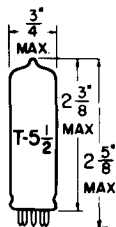


TUNG-SOL

TETRODE

MINIATURE TYPE



GLASS BULB

MINIATURE BUTTON
9 PIN BASE E7-1
OUTLINE DRAWING
JEDEC 5-3

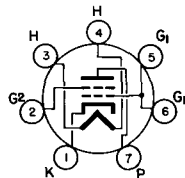
COATED UNIPOTENTIAL CATHODE

HEATER

12.6 VOLTS 0.40 AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 7FD

THE 12K5 IS A TETRODE WITH A UNIPOTENTIAL CATHODE IN THE 7-PIN MINIATURE CONSTRUCTION DESIGNED FOR SPACE-CHARGE GRID OPERATION. IT IS INTENDED FOR USE AS A POWER AMPLIFIER DRIVER WHERE THE HEATER, PLATE AND SPACE-CHARGE GRID POTENTIALS ARE OBTAINED DIRECTLY FROM AN AUTOMOTIVE BATTERY.

DIRECT INTERELECTRODE CAPACITANCES*

WITHOUT EXTERNAL SHIELD

INPUT: G2 TO (K+H+G1)	13.0	pf
OUTPUT: P TO (K+H+G1)	1.8	pf
GRID TO PLATE: G2 TO P	11.0	pf

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE	12.6	VOLTS
MAXIMUM PLATE VOLTAGE	30	VOLTS
MAXIMUM POSITIVE GRID #1 VOLTAGE (ABS. MAX.)	16	VOLTS
MAXIMUM NEGATIVE GRID #2 VOLTAGE	20	VOLTS
MAXIMUM GRID #2 CIRCUIT RESISTANCE	10	MEG OHMS
MAXIMUM HEATER-CATHODE VOLTAGE	±30	VOLTS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER - SINGLE TUBE

PLATE VOLTAGE	12.6	VOLTS
GRID #2 (CONTROL GRID) VOLTAGE ^B	-0.5	VOLTS
GRID #1 (SPACE-CHARGE GRID) VOLTAGE	12.6	VOLTS
PLATE CURRENT	40	MA.
GRID #1 (SPACE-CHARGE GRID) CURRENT	75	MA.
PLATE RESISTANCE	480	OHMS
AMPLIFICATION FACTOR ^C	7.2	
TRANSCONDUCTANCE ^C	15 000	μMHOS

*INDICATES AN ADDITION.

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS - CONT'D.

TYPICAL OPERATION

CLASS A₁ AMPLIFIER - SINGLE TUBE

HEATER VOLTAGE	12.6	VOLTS
PLATE VOLTAGE	12.6	VOLTS
GRID #2 (CONTROL GRID) VOLTAGE ^D	-2.0	VOLTS
GRID #1 (SPACE-CHARGE GRID) VOLTAGE	12.6	VOLTS
PEAK AF GRID #2 VOLTAGE	2.5	VOLTS
AF SIGNAL SOURCE RESISTANCE	100 000	OHMS
LOAD RESISTANCE	800	OHMS
PLATE CURRENT	8.0	MA.
GRID #1 (SPACE-CHARGE GRID) CURRENT	75	MA.
TOTAL HARMONIC DISTORTION (MAX.)	10	PERCENT
POWER OUTPUT	40	MW.

^A THIS TUBE IS INTENDED TO BE USED IN AUTOMOTIVE SERVICE FROM A NOMINAL 12 VOLT BATTERY SOURCE. THE HEATER IS THEREFORE DESIGNED TO OPERATE OVER THE 10.0 TO 15.9 VOLTAGE RANGE ENCOUNTERED IN THIS SERVICE. THE MAXIMUM RATINGS OF THE TUBE PROVIDE FOR AN ADEQUATE SAFETY FACTOR SUCH THAT THE TUBE WILL WITHSTAND THE WIDE VARIATION IN SUPPLY VOLTAGES.

^B AVERAGE CONTACT POTENTIAL DEVELOPED ACROSS A 2.2 MEGOHM RESISTOR.

^C FROM GRID #2 TO PLATE

^D OBTAINED ACROSS A 2.2 MEG. RESISTOR BY GRID #2 RECTIFICATION IN WHICH CASE THE ZERO SIGNAL PLATE CURRENT IS APPROXIMATELY 40 MA.