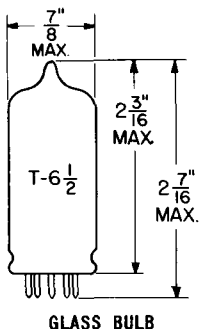


TUNG-SOL

TRIODE-HEPTODE

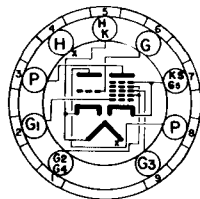
MINIATURE TYPE



COATED UNIPOTENTIAL CATHODES-(2)

HEATER

12.6 VOLTS 0.27 AMP.



BOTTOM VIEW
MINIATURE BOTTOM
9 PIN BASE
9KV

THE 12FX8 IS A TRIODE AND HEPTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR SERVICE IN SUPERHETERODYNE RECEIVERS AS A TRIODE RF AMPLIFIER AND FREQUENCY CONVERTER WHERE THE PLATE, HEATER AND SCREEN POTENTIALS ARE OBTAINED DIRECTLY FROM AN AUTOMOTIVE BATTERY.

DIRECT INTERELECTRODE CAPACITANCES

HEPTODE:

	WITHOUT SHIELD	
MIXER GRID TO PLATE (G3 TO P) (MAX.)	0.28	$\mu\mu\text{f}$
MIXER GRID TO OSCILLATOR GRID (G3 TO G4) (MAX.)	0.12	$\mu\mu\text{f}$
RF INPUT (G3 TO H+K+G1+G2, 4+G5+P)	6.0	$\mu\mu\text{f}$
MIXER OUTPUT (P TO H+K+G1+G2, 4+G5)	5.0	$\mu\mu\text{f}$
OSCILLATOR INPUT (G4 TO H+K+G2, 4+G3+G5)	5.0	$\mu\mu\text{f}$
OSCILLATOR GRID TO CATHODE (G4 TO K)	3.0	$\mu\mu\text{f}$
OSCILLATOR OUTPUT (K TO H+G2, 4+G3+P)	17	$\mu\mu\text{f}$
OSCILLATOR GRID TO PLATE (G4 TO P) (MAX.)	0.16	$\mu\mu\text{f}$

TRIODE:

GRID TO PLATE	1.3	$\mu\mu\text{f}$
INPUT	2.2	$\mu\mu\text{f}$
OUTPUT	0.25	$\mu\mu\text{f}$

COUPLING:

TRIODE GRID TO MIXER GRID (MAX.)	.01	$\mu\mu\text{f}$
TRIODE PLATE TO MIXER GRID (MAX.)	0.18	$\mu\mu\text{f}$
TRIODE PLATE TO HEPTODE PLATE (MAX.)	0.20	$\mu\mu\text{f}$

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE ^A	12.6	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE	± 16	VOLTS
MAXIMUM HEPTODE PLATE VOLTAGE	16	VOLTS
MAXIMUM TRIODE PLATE VOLTAGE	16	VOLTS
MAXIMUM GRIDS #2 & #4 VOLTAGE	16	VOLTS
MAXIMUM GRIDS #2 & #4 SUPPLY VOLTAGE	16	VOLTS
MAXIMUM NEGATIVE DC GRID #3 VOLTAGE	16	VOLTS
MAXIMUM POSITIVE GRID #3 VOLTAGE	0	VOLTS
MAXIMUM GRID #3 CIRCUIT RESISTANCE	10	MEGOHMS
MAXIMUM TRIODE GRID CIRCUIT RESISTANCE	10	MEGOHMS

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

	HEPTODE ^C	TRIODE	
HEATER VOLTAGE	12.6	12.6	VOLTS
PLATE VOLTAGE	12.6	12.6	VOLTS
GRID VOLTAGE	----	-8 ^B	VOLTS
GRID #1 VOLTAGE (OSCILLATOR GRID)	1.6	----	VOLTS
GRID #2 & #4 VOLTAGE (SCREEN GRID)	12.6	----	VOLTS
GRID #3 VOLTAGE (SIGNAL GRID)	.5 ^B	----	VOLTS
PLATE RESISTANCE	.5	----	MEGOHM
TRANSCONDUCTANCE	----	1400	μMHOS
PLATE CURRENT	290	1300	μA
GRID #2 CURRENT	1250	----	μA
CONVERSION TRANSCONDUCTANCE	300	----	μMHOS
AMPLIFICATION FACTOR	----	10	
GRID VOLTAGE FOR I_b OF 10μA (APPROX.)	----	-3.2	VOLTS
GRID #3 VOLTAGE FOR CONVERSION TRANS- CONDUCTANCE OF 10 μMHOS (APPROX.)	-3.0	----	VOLTS

HEPTODE OSCILLATOR CHARACTERISTICS - NOT OSCILLATING

GRID #3 VOLTAGE	0	VOLTS
GRID #1 VOLTAGE (OSCILLATOR GRID)	0	VOLTS
GRIDS #2 & #4 CONNECTED TO PLATE	12.6	VOLTS
TRANSCONDUCTANCE BETWEEN GRID #1 & GRIDS #2 & #4 CONNECTED TO PLATE	3600	μMHOS
AMPLIFICATION FACTOR BETWEEN GRID #1 & GRIDS #2 & #4 CONNECTED TO PLATE	9.0	
CATHODE CURRENT	4.4	MA.
GRID #1 VOLTAGE (APPROX.) FOR $I_b = 10 \mu A$	-4.5	VOLTS

A

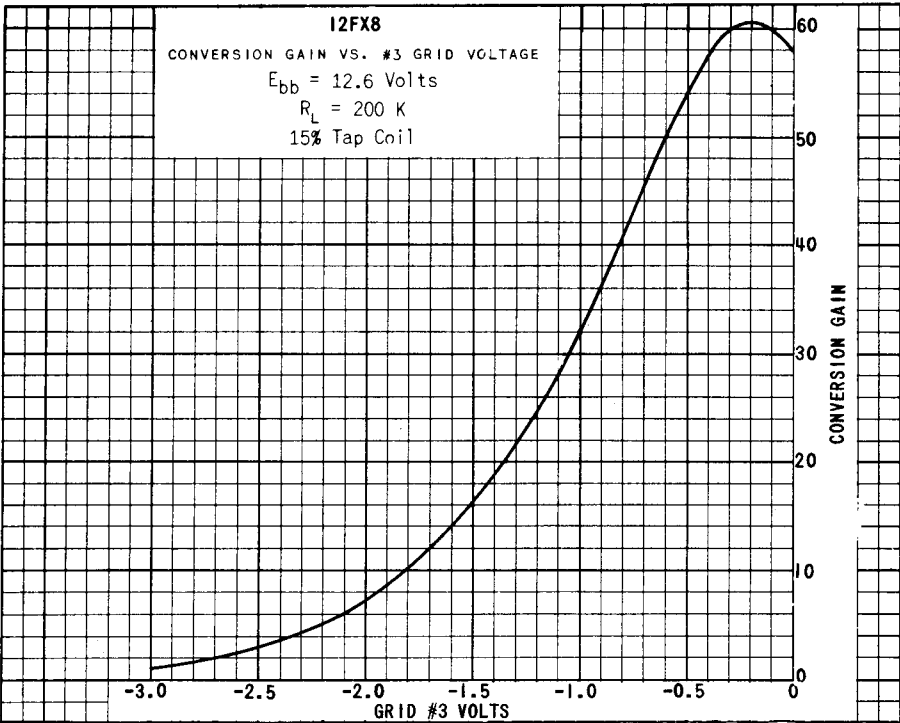
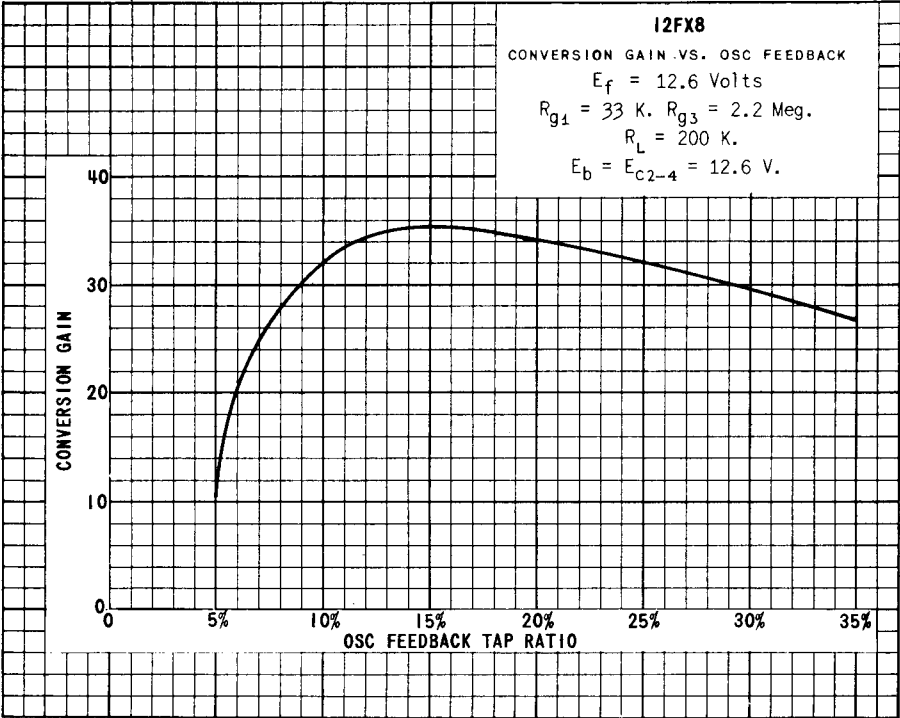
THIS TUBE IS INTENDED TO BE USED IN AUTOMOTIVE SERVICE FROM A NOMINAL 12 VOLT BATTERY SOURCE. THE HEATER IS THEREFORE DESIGNED TO OPERATE OVER THE 10.0 TO 15.9 VOLTAGE RANGE ENCOUNTERED IN THIS SERVICE. THE MAXIMUM RATINGS OF THE TUBE PROVIDE FOR AN ADEQUATE SAFETY FACTOR SUCH THAT THE TUBE WILL WITHSTAND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

B

AVERAGE BIAS DEVELOPED ACROSS 2.2 MEGOHM GRID RESISTOR.

C

CONVERTER SERVICE-SELF EXCITATION, SCREEN FEED BACK. OSCILLATOR GRID RESISTOR 33,000 OHMS.



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