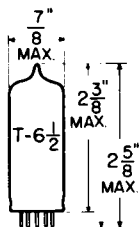


TUNG-SOL**TWIN-DIODE TETRODE**

MINIATURE TYPE

**GLASS BULB**

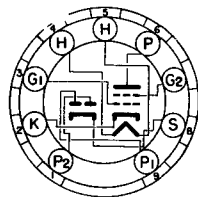
COATED UNIPOTENTIAL CATHODE

HEATER

12.6 VOLTS 0.55 AMP.

AC OR DC

ANY MOUNTING POSITION

**BOTTOM VIEW**MINIATURE BUTTON
9 PIN BASE

9HR

THE 12DL8 IS A COMBINED TWIN-DIODE AND SPACE-CHARGE GRID TETRODE WITH INDEPENDENT UNIPOTENTIAL CATHODES IN THE 9-PIN MINIATURE CONSTRUCTION. THE DIODE SECTION IS INTENDED FOR USE AS DETECTOR AND THE TETRODE SECTION IS INTENDED FOR USE AS A POWER AMPLIFIER WHERE THE HEATER PLATE, AND SPACE-CHARGE GRID POTENTIALS ARE OBTAINED DIRECTLY FROM AN AUTOMOTIVE BATTERY.

DIRECT INTERELECTRODE CAPACITANCES

#1 DIODE INPUT: (#1 Pd TO Kd+H)	1.6	$\mu\mu\text{f}$
#2 DIODE INPUT: (#2 Pd TO Kd+H)	1.6	$\mu\mu\text{f}$
#1 DIODE TO #2 DIODE (#1 Pd TO #2 Pd)	.03	$\mu\mu\text{f}$
TETRODE INPUT: (G2 TO G1+K+H)	12	$\mu\mu\text{f}$
TETRODE OUTPUT: (P TO G1+K+H)	1.3	$\mu\mu\text{f}$
TETRODE GRID #2 TO PLATE	14	$\mu\mu\text{f}$
COUPLING: (#1 DIODE PLATE TO TETRODE GRID #2) (MAX.)	.02	$\mu\mu\text{f}$
(#2 DIODE TO TETRODE GRID #2) (MAX.)	.006	$\mu\mu\text{f}$

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE ^A	12.6	VOLTS
MAXIMUM TETRODE PLATE VOLTAGE	30	VOLTS
MAXIMUM POSITIVE TETRODE GRID #1 VOLTAGE (ABS. MAX.)	16	VOLTS
MAXIMUM NEGATIVE TETRODE GRID #2 VOLTAGE	20	VOLTS
MAXIMUM TETRODE GRID #2 CIRCUIT RESISTANCE	10	MEGOHMS
MAXIMUM AVERAGE DIODE CURRENT	5	MA.
MAXIMUM HEATER-CATHODE VOLTAGE	± 30	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.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER - SINGLE TUBE

HEATER VOLTAGE	12.6	VOLTS
HEATER CURRENT	0.55	AMPL
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

DIODE UNITS - TWO

DIODE CURRENT WITH 10.0 VOLTS APPLIED (EACH DIODE)	3	MA.
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TYPICAL OPERATION

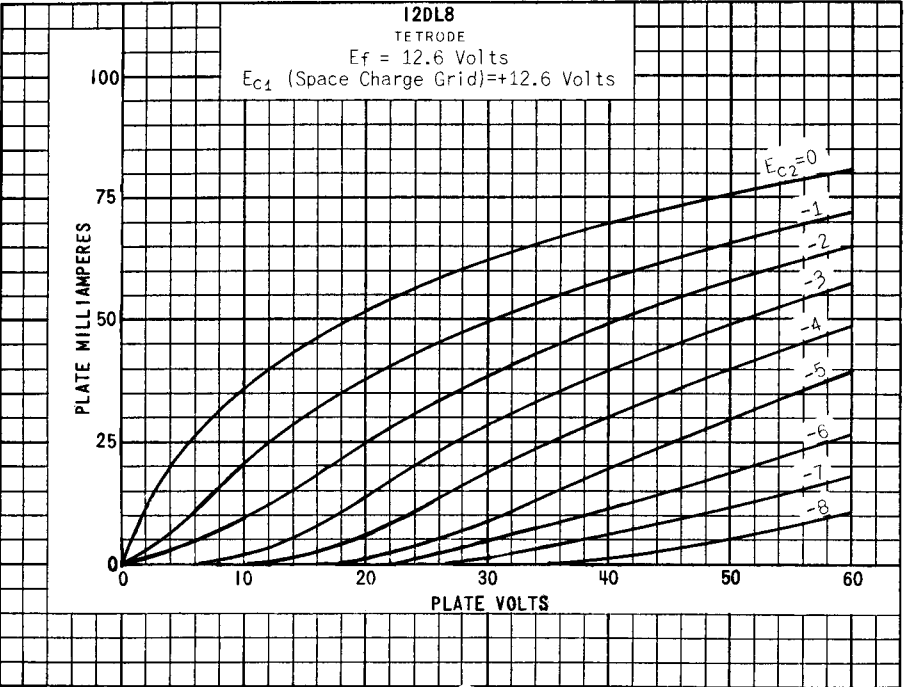
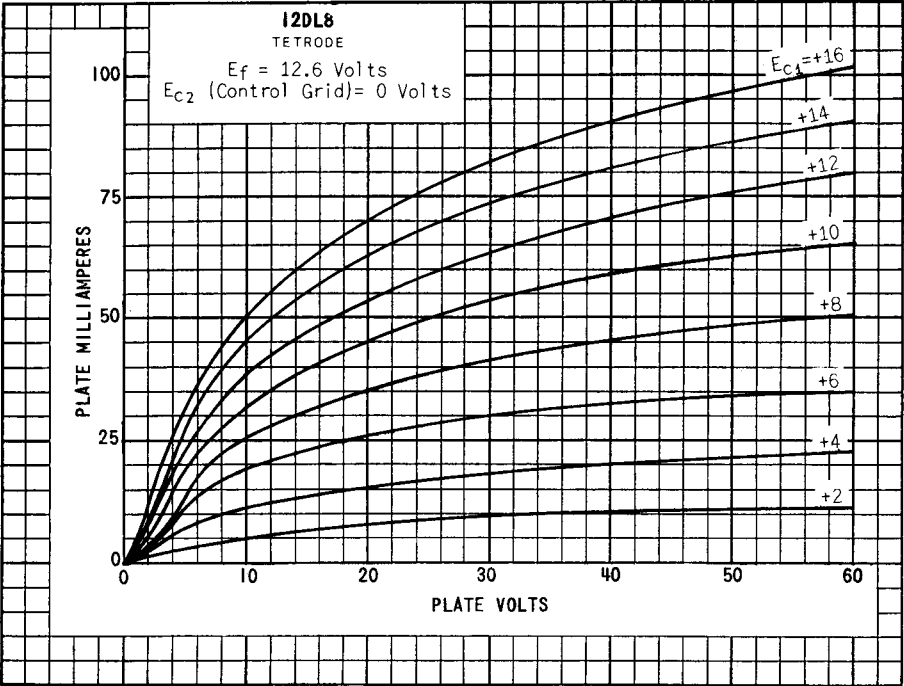
CLASS A₁ AMPLIFIER - SINGLE TUBE

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.
POWER OUTPUT	40	MW.
TOTAL HARMONIC DISTORTION (MAX.)	10	PERCENT

^B AVERAGE BIAS DEVELOPED ACROSS A 2.2 MEGOHM RESISTOR.

^C FROM GRID #2 TO PLATE.

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



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