

TUNG-SOL**TWIN TRIODE
MINIATURE TYPE**

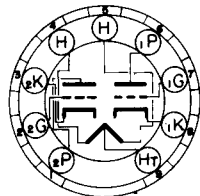
COATED UNIPOTENTIAL CATHODE

HEATER

SERIES	PARALLEL
12.6 VOLTS	6.3 VOLTS
0.15 AMP.	0.3 AMP.

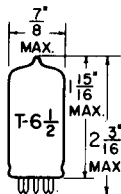
AC OR DC

FOR 12.6 VOLT OPERATION APPLY HEATER VOLTAGE BETWEEN PINS #4 AND #5. FOR 6.3 VOLT OPERATION APPLY HEATER VOLTAGE BETWEEN PIN #9 AND PINS #4 AND #5 CONNECTED TOGETHER.



BOTTOM VIEW
SMALL BUTTON
9 PIN BASE

9A

**GLASS BULB**

ANY MOUNTING POSITION

THE 12DF7 IS A 9 PIN MINIATURE TWIN TRIODE DESIGNED FOR SERVICE AS A LOW LEVEL INPUT VOLTAGE AMPLIFIER FOR TAPE RECORDERS AND HIGH QUALITY AUDIO PREAMPLIFIERS. THE 12DF7 IS A LOW MICROPHONICS VERSION OF THE 12AX7 AND MAY BE USED AS A REPLACEMENT FOR THAT TYPE.

DIRECT INTERELECTRODE CAPACITANCES

	SEC. #1	SEC. #2	
GRID TO PLATE	1.4	1.4	μ f
INPUT	1.6	1.6	μ f
OUTPUT	0.4	0.3	μ f
			μ f

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER VALUES

EACH SECTION

HEATER VOLTAGE	12.6	6.3	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE		180	VOLTS
MAXIMUM PLATE VOLTAGE		300	VOLTS
MAXIMUM POSITIVE DC GRID VOLTAGE		0	VOLTS
MAXIMUM NEGATIVE DC GRID VOLTAGE		-50	VOLTS
MAXIMUM PLATE DISSIPATION		1	WATT

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TUNG-SOL

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

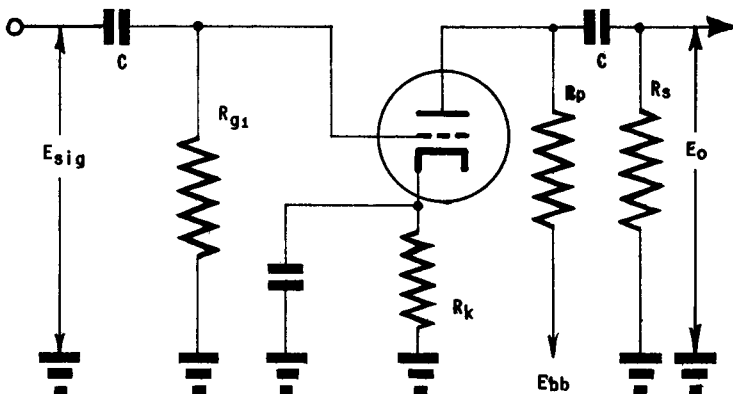
CLASS A_1 AMPLIFIER - EACH SECTION

HEATER VOLTAGE	12.6	6.3	12.6	6.3	VOLTS
HEATER CURRENT	0.15	0.3	0.15	0.3	AMP.
PLATE VOLTAGE	100		250		VOLTS
GRID VOLTAGE	-1		-2		VOLTS
AMPLIFICATION FACTOR	100		100		
PLATE RESISTANCE	70 000		55 000		OHMS
TRANSCONDUCTANCE	1 250		1 600		μ MHOS
PLATE CURRENT	0.5		1.2		MA.

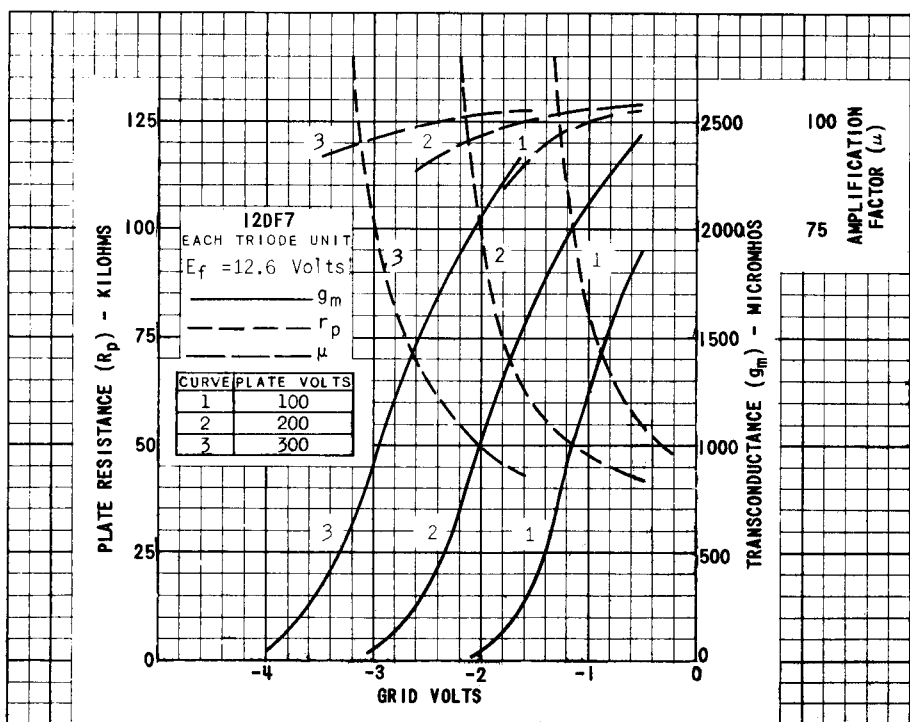
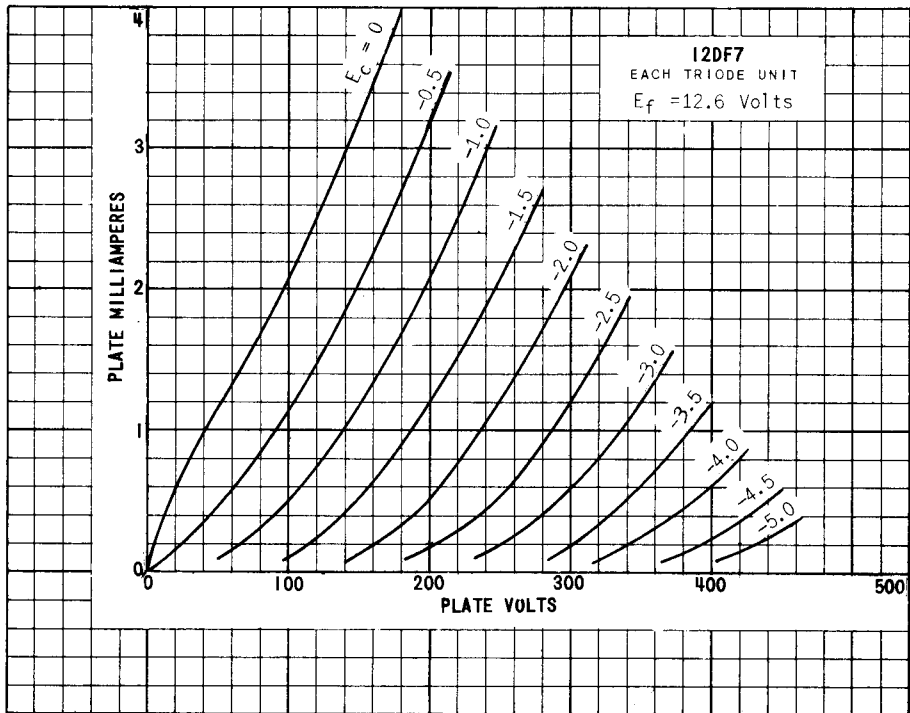
RESISTANCE COUPLED AMPLIFIER

R_p MEG.	R_s MEG.	R_{g1} MEG.	$E_{bb} = 90$ VOLTS			$E_{bb} = 180$ VOLTS			$E_{bb} = 300$ VOLTS		
			R_k	GAIN	E_o	R_k	GAIN	E_o	R_k	GAIN	E_o
0.10	0.10	0.1	1700	31	5.0	1000	40	15	760	43	30
0.10	0.24	0.1	2000	38	6.9	1100	46	20	900	50	40
0.24	0.24	0.1	3500	43	6.5	2000	54	18	1600	58	37
0.24	0.51	0.1	3900	49	8.6	2300	59	24	1800	64	47
0.51	0.51	0.1	7100	50	7.4	4300	62	19	3100	66	39
0.51	1.0	0.1	7800	53	9.1	4800	64	24	3600	69	46
0.24	0.24	10	0	37	3.9	0	53	15	0	62	32
0.24	0.51	10	0	44	5.4	0	60	19	0	67	41
0.51	0.51	10	0	44	5.0	0	61	17	0	69	35
0.51	1.0	10	0	49	6.4	0	66	21	0	71	41

E_o IS MAXIMUM RMS VOLTAGE OUTPUT FOR FIVE PERCENT TOTAL HARMONIC DISTORTION.
GAIN MEASURED AT 2.0 VOLTS RMS OUTPUT.
FOR ZERO-BIAS DATA, GENERATOR IMPEDANCE IS NEGLIGIBLE.



NOTE: COUPLING CAPACITORS (C) SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE. R_k SHOULD BE ADEQUATELY BY-PASSED.



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