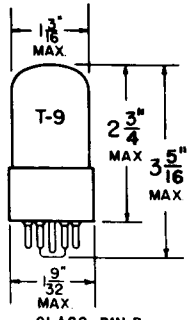
TUNG-SOL

DOUBLE TRIODE

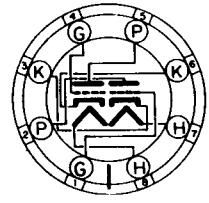


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
12.6 VOLTS 0.3 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
INTERMEDIATE SHELL
8 PIN OCTAL
8BD

THE 12SN7GTA IS A MEDIUM-MU DOUBLE TRIODE SUITABLE FOR USE IN A WIDE VARIETY OF GENERAL-PURPOSE AMPLIFIER AND PHASE-INVERTER APPLICATIONS. IT IS ALSO USEFUL AS A BLOCKING OSCILLATOR, MULTIVIBRATOR, OR VERTICAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. EXCEPT FOR HEATER AND HEATER WARM-UP TIME RATINGS, THE 12SN7GTA IS IDENTICAL TO THE 6SN7GTB.

DIRECT INTERELECTRODE CAPACITANCES

WITH NO EXTERNAL SHIELD

	TRIODE 1	TRIODE 2	
GRID TO PLATE: G TO P	4.0	3.8	μμf
INPUT: G TO (H+K)	2.2	2.6	μμf
OUTPUT: P TO (H+K)	0.7	0.7	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

EACH UNIT

	CLASS A_1 AMPLIFIER	VERTICAL[A] DEFLECTION AMPLIFIER	
HEATER VOLTAGE	12.6		VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200		VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC	100		VOLTS
TOTAL DC AND PEAK	200		VOLTS
MAXIMUM PLATE VOLTAGE	450	450	VOLTS
MAXIMUM PEAK POSITIVE PLATE VOLTAGE (ABSOLUTE MAXIMUM)	---	1 500	VOLTS
MAXIMUM PLATE DISSIPATION:			
EACH PLATE	5.0	5.0[B]	WATTS
BOTH PLATES	7.5	7.5[B]	WATTS
MAXIMUM PEAK NEGATIVE GRID VOLTAGE	---	250	VOLTS
MAXIMUM AVERAGE CATHODE CURRENT	20	20	MA.
MAXIMUM PEAK CATHODE CURRENT	---	70	MA.
MAXIMUM GRID CIRCUIT RESISTANCE			
CATHODE BIAS	1.0	2.2	MEGOHMS

[A] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION. THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15% OF A SCANNING CYCLE.

[B] IN STAGES OPERATING WITH GRID-LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS – CONT'D

	VERTICAL[C] DEFLECTION OSCILLATOR	HORIZONTAL[C] DEFLECTION OSCILLATOR	
HEATER VOLTAGE	12.6		VOLTS
MAXIMUM HEATER–CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200		VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC	100		VOLTS
TOTAL DC AND PEAK	200		VOLTS
MAXIMUM DC PLATE VOLTAGE	450	450	VOLTS
MAXIMUM PLATE DISSIPATION:			
EACH PLATE	5.0	5.0	WATTS
BOTH PLATES	7.5	7.5	WATTS
MAXIMUM PEAK NEGATIVE GRID VOLTAGE	400	600	VOLTS
MAXIMUM AVERAGE CATHODE CURRENT	20	20	MA.
MAXIMUM PEAK CATHODE CURRENT	70	300	MA.
MAXIMUM GRID CIRCUIT RESISTANCE	2.2	2.2	MEGOHMS

[C] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION. THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15% OF A SCANNING CYCLE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A_1 AMPLIFIER – EACH UNIT

HEATER VOLTAGE	12.6		VOLTS
HEATER CURRENT	0.3		AMP.
PLATE VOLTAGE	90	250	VOLTS
GRID VOLTAGE	0	−8	VOLTS
PLATE CURRENT	10	9	MA.
AMPLIFICATION FACTOR	20	20	
PLATE RESISTANCE (APPROX.)	6 700	7 700	OHMS
TRANSCONDUCTANCE	3 000	2 600	μMHOS
PLATE CURRENT	10	9.0	MA.
GRID VOLTAGE FOR I_b = 10 μA. (APPROX.)	−7.0	−18	VOLTS

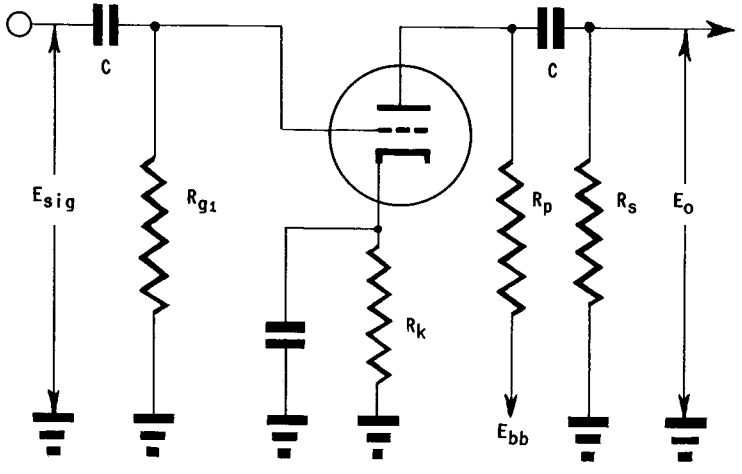
TUNG-SOL

RESISTANCE COUPLED AMPLIFIER

EACH SECTION

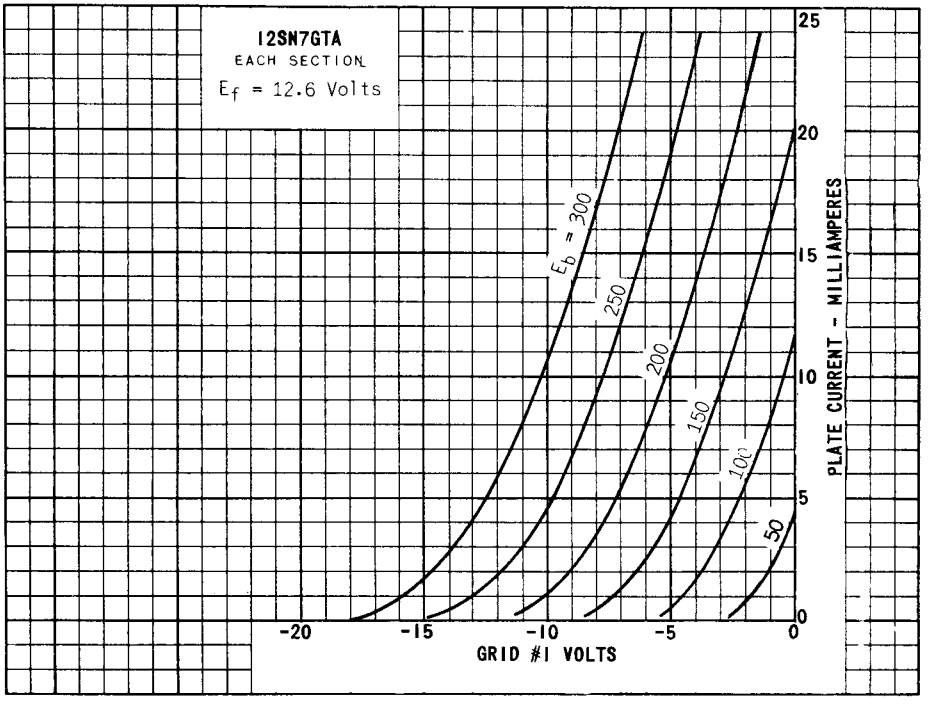
R_p MEG.	R_s MEG.	R_{g1} MEG.	E_{bb} = 90 VOLTS			E_{bb} = 180 VOLTS			E_{bb} = 300 VOLTS		
			R_k	GAIN	E_o	R_k	GAIN	E_o	R_k	GAIN	E_o
0.10	0.10	0.10	3900	10	10	3600	11	20	3500	11	30
0.10	0.24	0.10	5000	11	14	4700	12	27	4400	12	41
0.24	0.24	0.10	9400	11	13	8700	11	25	8700	12	38
0.24	0.51	0.10	11000	11	17	11000	12	32	11000	12	48
0.51	0.51	0.10	19000	11	15	18000	12	29	18000	12	43
0.51	1.0	0.10	24000	11	19	23000	12	37	23000	12	54
0.24	0.24	10	0	14	12	0	16	20	0	17	28
0.24	0.51	10	0	14	16	0	16	28	0	17	40
0.51	0.51	10	0	14	15	0	15	26	0	16	38
0.51	1.0	10	0	14	19	0	16	35	0	16	52

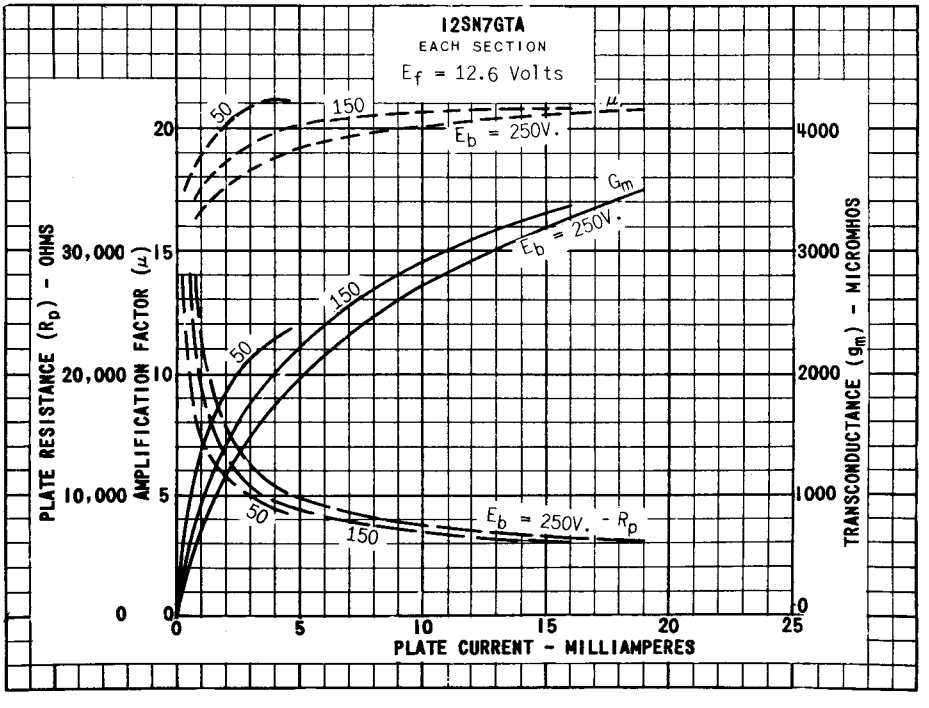
NOTES: 1. E_o IS MAXIMUM RMS VOLTAGE OUTPUT FOR FIVE PERCENT (5%) TOTAL HARMONIC DISTORTION.
2. GAIN MEASURED AT 2.0 VOLTS RMS OUTPUT.
3. FOR ZERO-BIAS DATA, GENERATOR IMPEDANCE IS NEGLIGIBLE.

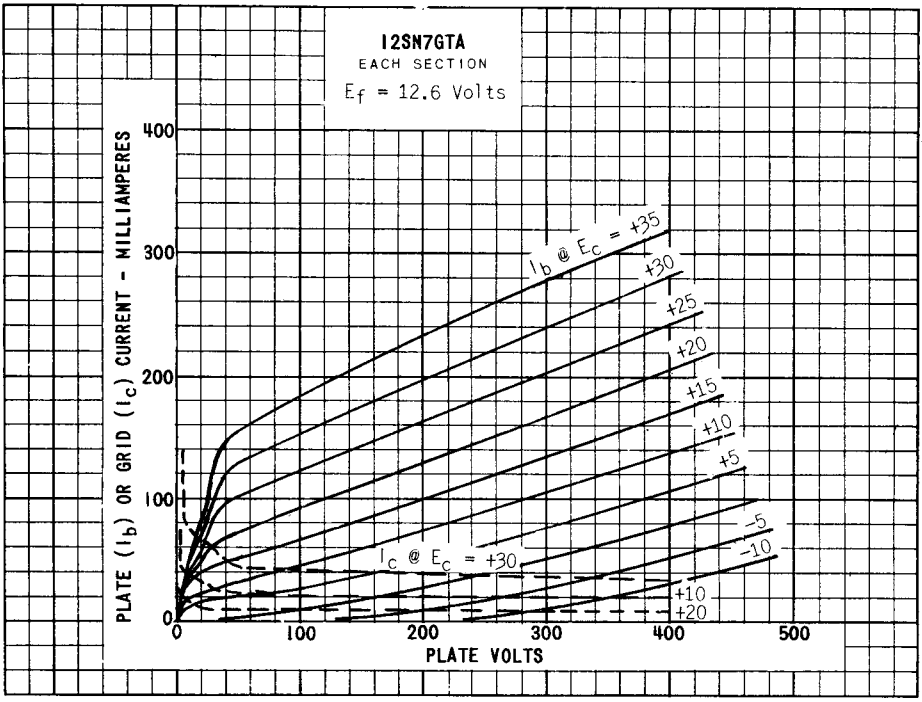


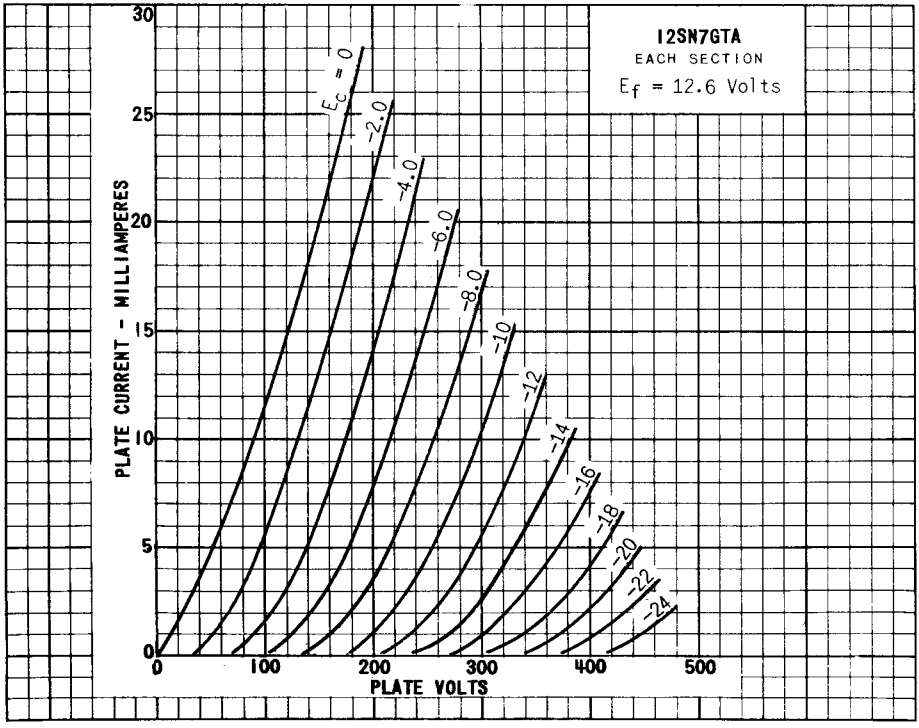
NOTES: COUPLING CAPACITORS (C) SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE. R_k SHOULD BE ADEQUATELY BY-PASSED

12SN7GTA


12SN7GTA
EACH SECTION
E_f = 12.6 Volts
E_b = 300
250
200
150
100
50
PLATE CURRENT - MILLIAMPERES
GRID #1 VOLTS
-20
-15
-10
-5
0
5
10
15
20
25


12SN7GTA
EACH SECTION
E_f = 12.6 Volts
50
150
μ
E_b = 250V.
G_m
E_b = 250V.
150
50
50
150
E_b = 250V. - R_p
PLATE RESISTANCE (R_p) - OHMS
AMPLIFICATION FACTOR (μ)
TRANSCONDUCTANCE (g_m) - MICROMHOS
PLATE CURRENT - MILLIAMPERES
30,000
20,000
10,000
0
20
15
10
5
0
4000
3000
2000
1000
0
0
5
10
15
20
25





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