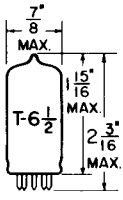
TUNG-SOL

DUPLEX-DIODE TRIODE

MINIATURE TYPE



GLASS BULB

COATED UNIPOTENTIAL CATHODE

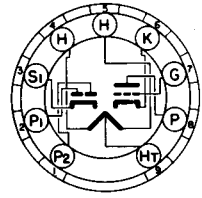
HEATER

SERIES	PARALLEL
8.4 VOLTS	4.2 VOLTS
0.225 AMP.	0.45 AMP.

AC OR DC

ANY MOUNTING POSITION

CONTROL OF HEATER WARM-UP TIME APPLIES ONLY TO PARALLEL CONNECTION.



BOTTOM VIEW

SMALL BUTTON
9 PIN BASE

9EN

THE 8CN7 IS A DUPLEX DIODE HIGH-MU TRIODE IN WHICH SEPARATE CATHODES ARE PROVIDED FOR THE DIODE AND TRIODE SECTIONS. IT IS INTENDED PRIMARILY FOR SERVICE AS A COMBINED HORIZONTAL PHASE DETECTOR AND REACTANCE TUBE IN TELEVISION RECEIVERS. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. EXCEPT FOR HEATER RATINGS, THE 8CN7 IS IDENTICAL TO THE 6CN7.

DIRECT INTERELELECTRODE CAPACITANCES

WITHOUT EXTERNAL SHIELD

TRIODE GRID TO PLATE	1.8	μμf
TRIODE INPUT	1.5	μμf
TRIODE OUTPUT	0.5	μμf
GRID TO EACH DIODE PLATE	0.006	μμf
DIODE #1 PLATE TO DIODE CATHODE AND HEATER	3.6	μμf
DIODE #2 PLATE TO DIODE CATHODE AND HEATER	3.6	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE	8.4	4.2	VOLTS
MAXIMUM PLATE VOLTAGE	300		VOLTS
MAXIMUM POSITIVE DC GRID VOLTAGE	0		VOLTS
MAXIMUM PLATE DISSIPATION	1.0		WATTS
MAXIMUM HEATER-CATHODE VOLTAGE			
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC COMPONENT	100		VOLTS
TOTAL DC AND PEAK	200		VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200		VOLTS
MAXIMUM DIODE CURRENT FOR CONTINUOUS OPERATION, (EACH DIODE)	5.0		MA.
HEATER WARM-UP TIME*	11.0		SECONDS

*HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

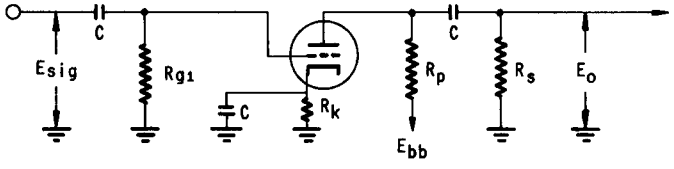
CLASS A_1 AMPLIFIER

PLATE VOLTAGE	8.4	4.2	8.4	4.2	VOLTS
PLATE CURRENT	0.225	0.45	0.225	0.45	AMP.
PLATE VOLTAGE	100		250		VOLTS
GRID VOLTAGE	-1.0		-3.0		VOLTS
AMPLIFICATION FACTOR	70		70		
PLATE RESISTANCE (APPROX.)	54 000		58 000		OHMS
TRANSCONDUCTANCE	1 300		1 200		μMHOS
PLATE CURRENT	0.8		1.0		MA.
AVERAGE DIODE CURRENT (EACH DIODE) WITH 5.0 VOLTS DC APPLIED			20		MA.

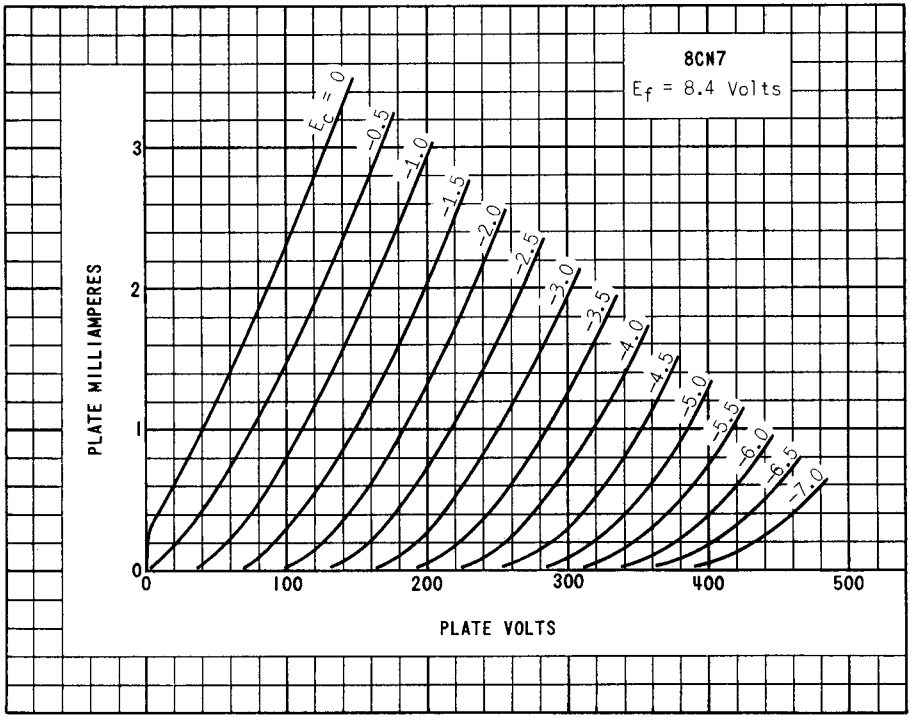
CLASS A RESISTANCE - COUPLED AMPLIFIER

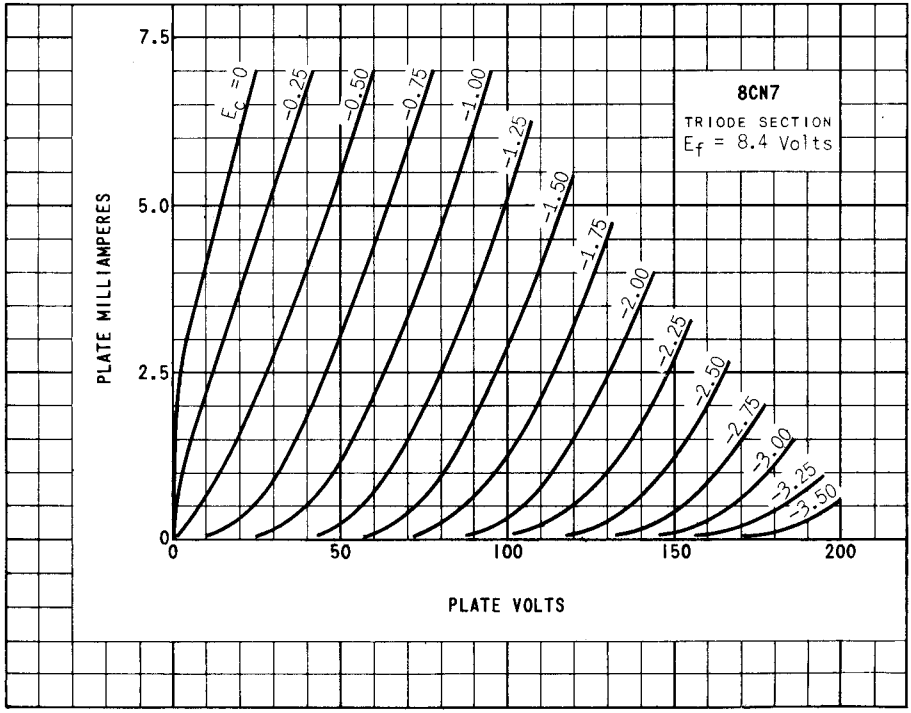
Rp Meg.	Rs Meg.	Rg_1 Meg.	Ebb = 90 Volts			Ebb = 180 Volts			Ebb = 300 Volts		
			Rk	Gain	Eo	Rk	Gain	Eo	Rk	Gain	Eo
0.10	0.10	0.10	5700	21	7.0	2400	29	18	1800	33	35
0.10	0.24	0.10	6100	26	9.0	2700	34	23	2000	38	42
0.24	0.24	0.10	9100	30	10	4300	40	24	3000	44	43
0.24	0.51	0.10	10000	34	13	4700	45	31	3300	49	52
0.51	0.51	0.10	15000	37	14	7500	47	28	5600	51	50
0.51	1.0	0.10	16000	40	16	8200	50	35	6200	55	60
0.24	0.24	10	0	31	5.0	0	44	19	0	48	40
0.24	0.51	10	0	37	7.0	0	49	25	0	52	52
0.51	0.51	10	0	39	7.5	0	51	22	0	54	44
0.51	1.0	10	0	42	10	0	54	28	0	58	56

Eo 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.

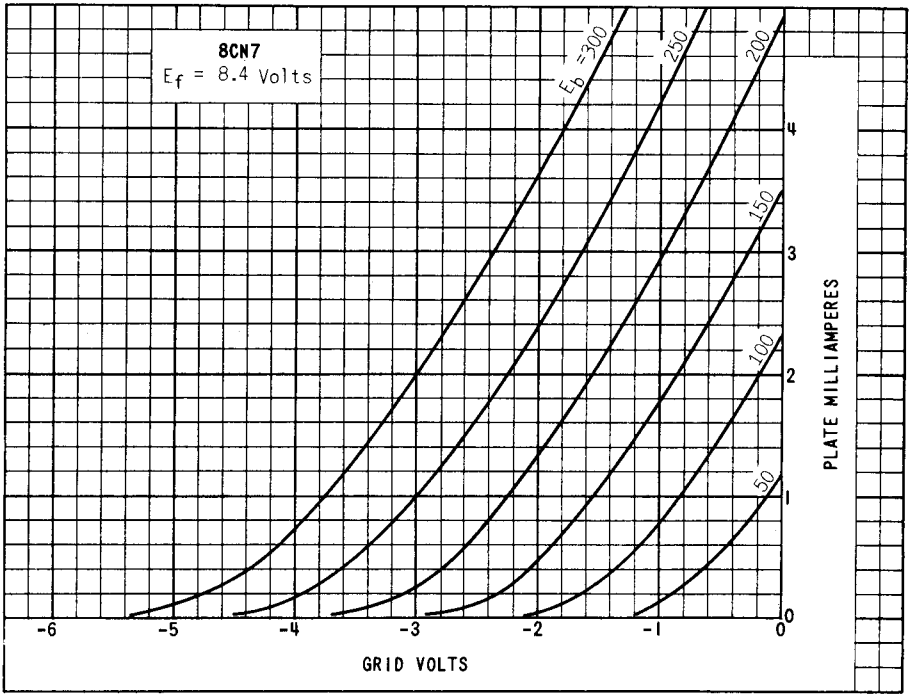


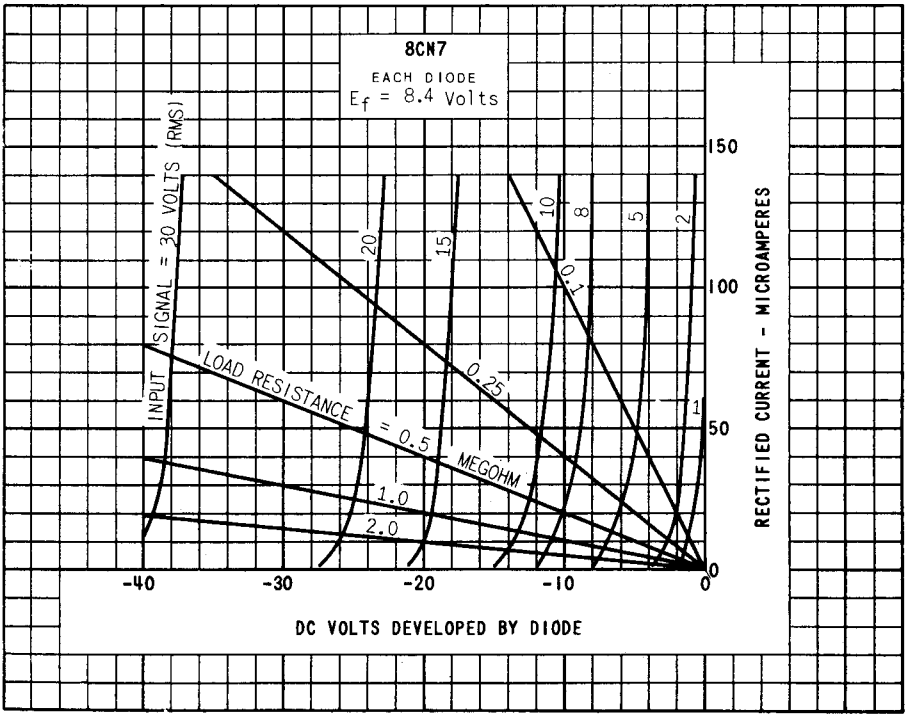
NOTE: COUPLING CAPACITORS (C) SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE. Rk SHOULD BE ADEQUATELY BY-PASSED.

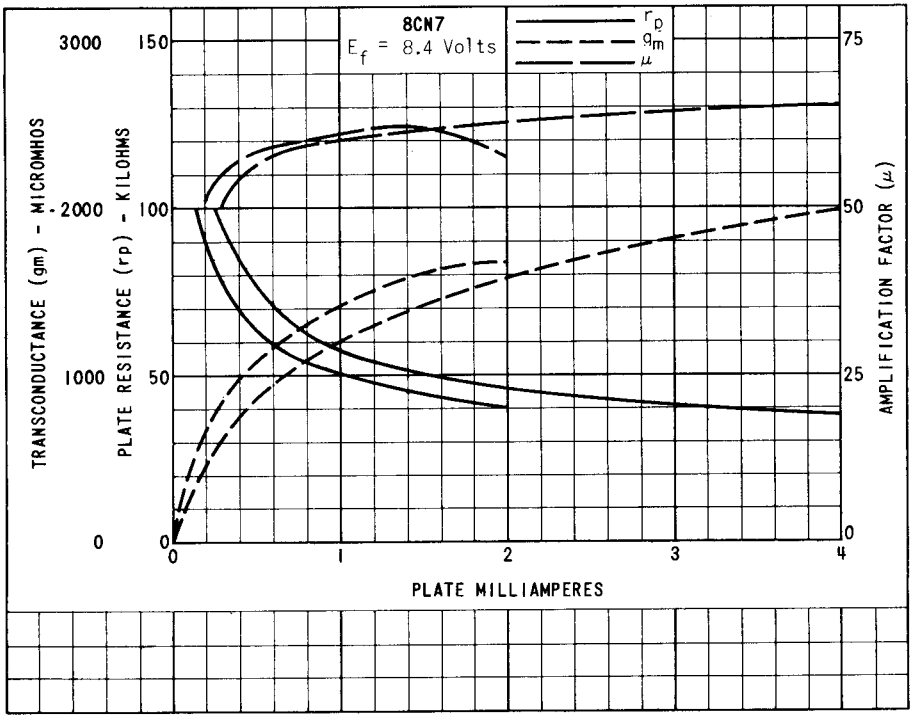




8CN7


8CN7
E_f = 8.4 Volts
E_b =300
250
200
150
100
50
PLATE MILLIAMPERES
0
1
2
3
4
-6
-5
-4
-3
-2
-1
0
GRID VOLTS


8CN7
EACH DIODE
E_f = 8.4 Volts
INPUT SIGNAL = 30 VOLTS (RMS)
LOAD RESISTANCE
= 0.5 MEGOHM
0.25
1.0
2.0
20
15
10
8
5
2
1.0
0.1
150
100
50
0
RECTIFIED CURRENT - MICROAMPERES
-40
-30
-20
-10
0
DC VOLTS DEVELOPED BY DIODE



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