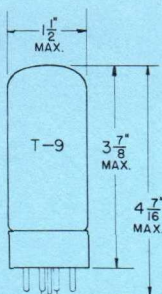


TUNG-SOL

PENTODE

MINIATURE TYPE



GLASS BULB

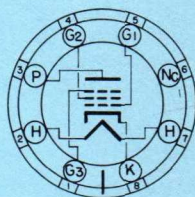
COATED UNIPOTENTIAL CATHODE

HEATER

6.3 VOLTS 1.5 AMPS.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

8 PIN OCTAL

8ET

THE 6CA7 IS A POWER PENTODE OF THE GLASS OCTAL TYPE. THIS TUBE IS SUITABLE FOR ALL APPLICATIONS WHICH REQUIRE PEAK POWERS OF UP TO 11 WATTS FROM A SINGLE TUBE OR UP TO 100 WATTS FROM TWO TUBES IN THE NORMAL PUSH-PULL ARRANGEMENT. IT IS EQUALLY SUITABLE FOR DOMESTIC AMPLIFIERS AND PUBLIC ADDRESS EQUIPMENT.

DIRECT INTERELECTRODE CAPACITANCES

GRID #1 TO ALL OTHER ELEMENTS EXCEPT PLATE	15.5	$\mu\mu\text{f}$
PLATE TO ALL OTHER ELEMENTS EXCEPT GRID #1	7.2	$\mu\mu\text{f}$
PLATE TO GRID #1 (MAX.)	1.0	$\mu\mu\text{f}$
GRID #1 TO HEATER (MAX.)	1.0	$\mu\mu\text{f}$
HEATER TO CATHODE	11	$\mu\mu\text{f}$

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE	6.3	VOLTS
MAXIMUM PLATE VOLTAGE	800	VOLTS
MAXIMUM PLATE VOLTAGE WITHOUT PLATE CURRENT	2000	VOLTS
MAXIMUM PLATE DISSIPATION	25	WATTS
MAXIMUM PLATE DISSIPATION WITHOUT INPUT SIGNAL	27.5	WATTS
MAXIMUM GRID #2 VOLTAGE	425	VOLTS
MAXIMUM GRID #2 VOLTAGE WITHOUT PLATE CURRENT	800	VOLTS
MAXIMUM GRID #2 DISSIPATION	8	WATTS
CATHODE CURRENT	150	MAmps
MAXIMUM GRID CURRENT STARTING POINT. GRID #1 VOLTAGE WHEN GRID #1 CURRENT IS 0.3 μA	-1.3	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE (CLASS A & AB)	0.7	MEGOHM
MAXIMUM GRID #1 CIRCUIT RESISTANCE (CLASS B)	0.5	MEGOHM
MAXIMUM EXTERNAL RESISTANCE BETWEEN HEATER AND CATHODE	20000	OHMS
MAXIMUM VOLTAGE BETWEEN HEATER AND CATHODE	100	VOLTS

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A - ONE TUBE

HEATER VOLTAGE	6.3		VOLTS
HEATER CURRENT	1.5		AMPS.
SUPPLY VOLTAGE	265	265	VOLTS
PLATE VOLTAGE	250	250	VOLTS
GRID #2 SERIES RESISTOR	2000	0	OHMS
GRID #3 VOLTAGE	0	0	VOLT
GRID #1 BIAS	-14.5	-13.5	VOLTS
PLATE CURRENT	70	100	MAMPS
GRID #2 CURRENT	10	15	MAMPS
TRANSCONDUCTANCE	9000	11000	μ MHOS
AMPLIFICATION FACTOR OF GRID #2 WITH RESPECT TO GRID #1	11	11	
PLATE RESISTANCE	18000	15000	OHMS
PLATE LOAD RESISTANCE	3000	2000	OHMS
INPUT VOLTAGE (RMS)	9.3	8.7	VOLTS
MAX. SIGNAL POWER OUTPUT	8	11	WATTS
TOTAL HARMONIC DISTORTION	10	10	PERCENTS
INPUT VOLTAGE FOR POWER OUTPUT OF 50 MWATTS (RMS)	0.65	0.5	VOLT

CLASS B - TWO TUBES

SUPPLY VOLTAGE 425 VOLTS			
COMMON GRID #2 RESISTOR	1000		OHMS
GRID #1 BIAS	-38		VOLTS
GRID #3 VOLTAGE	0		VOLT
INPUT BOLTAGE (RMS)	0	27	27
LOAD RESISTANCE, PLATE TO PLATE	-	3400	4000
SUPPLY VOLTAGE	425	425	400
PLATE VOLTAGE	420	400	375
PLATE CURRENT	2X30	2X120	2X100
GRID #2 CURRENT	2X4.4	2X25	2X25
MAX. SIGNAL POWER OUTPUT	0	55	45
TOTAL HARMONIC DISTORTION	-	5	6

CLASS B - TWO TUBES

SUPPLY BOLTAGE 375 VOLTS

COMMON GRID #2 RESISTOR	470		OHMS
GRID #1 BIAS	-32		VOLTS
GRID #3 VOLTAGE	0		VOLT
INPUT VOLTAGE (RMS)	0	22.7	22.7
LOAD RESISTANCE, PLATE TO PLATE	-	2800	3800
SUPPLY VOLTAGE	375	375	350
PLATE VOLTAGE	370	350	325
PLATE CURRENT	2X35	2X120	2X93
GRID #2 CURRENT	2X4.7	2X25	2X25
MAX. SIGNAL POWER OUTPUT	0	44	36
TOTAL HARMONIC DISTORTION	-	5	6

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

(CONT'D.)

CLASS B - TWO TUBES

SUPPLY VOLTAGE 500/400 VOLTS

COMMON GRID #2 RESISTOR	750			OHMS
GRID #1 BIAS	-36			VOLTS
GRID #3 VOLTAGE	0			VOLT
INPUT VOLTAGE (RMS)	0	25.8	25.8	VOLTS
LOAD RESISTANCE, PLATE TO PLATE	-	4000	5000	OHMS
PLATE SUPPLY VOLTAGE	500	500	475	VOLTS
PLATE VOLTAGE	495	475	450	VOLTS
GRID #2 SUPPLY VOLTAGE	400	400	375	VOLTS
PLATE CURRENT	2X30	2X125	2X102	MAMPS
GRID #2 CURRENT	2X4	2X25	2X25	MAMPS
MAX. SIGNAL POWER OUTPUT	0	70	58	WATTS
TOTAL HARMONIC DISTORTION	-	5	6	PERCENTS

CLASS B - TWO TUBES

SUPPLY VOLTAGE 800/400 VOLTS

COMMON GRID #2 RESISTOR	750			OHMS
GRID #1 BIAS	-39			VOLTS
GRID #3 VOLTAGE	0			VOLT
INPUT VOLTAGE (RMS)	0	23.4	23.4	VOLTS
LOAD RESISTANCE, PLATE TO PLATE	-	11000	11000	OHMS
PLATE SUPPLY VOLTAGE	800	800	750	VOLTS
PLATE VOLTAGE	795	775	725	VOLTS
GRID #2 SUPPLY VOLTAGE	400	400	375	VOLTS
PLATE CURRENT	2X25	2X91	2X84	MAMPS
GRID #2 CURRENT	2X3	2X19	2X19	MAMPS
MAX. SIGNAL POWER OUTPUT	0	100	90	WATTS
TOTAL HARMONIC DISTORTION	-	5	6	PERCENTS

CLASS AB - TWO TUBES

SUPPLY VOLTAGE 375 VOLTS

LOAD RESISTANCE, PLATE TO PLATE	3400			OHMS
COMMON GRID #2 RESISTOR	470			OHMS
CATHODE RESISTOR	130			OHMS
GRID #3 VOLTAGE	0			VOLT
INPUT VOLTAGE (RMS)	0		21	VOLTS
SUPPLY VOLTAGE	375		375	VOLTS
PLATE VOLTAGE + VOLTAGE ACROSS CATHODE RESISTOR	355		350	VOLTS
PLATE CURRENT	2X75		2X95	MAMPS
GRID #2 CURRENT	2X11.5		2X22.5	MAMPS
MAX. SIGNAL POWER OUTPUT	0		35	WATTS
TOTAL HARMONIC DISTORTION	-		5	PERCENTS

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

(CONT'D.)

IN TRIODE CONNECTION

(GRID #2 CONNECTED TO PLATE)

CLASS A, ONE TUBE, SUPPLY VOLTAGE 375 VOLTS

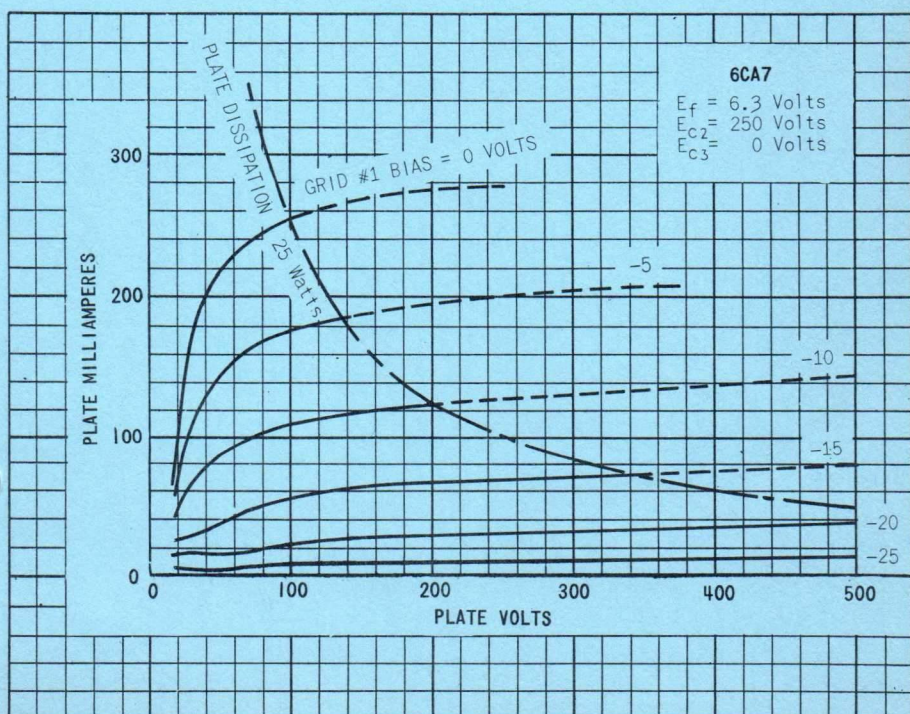
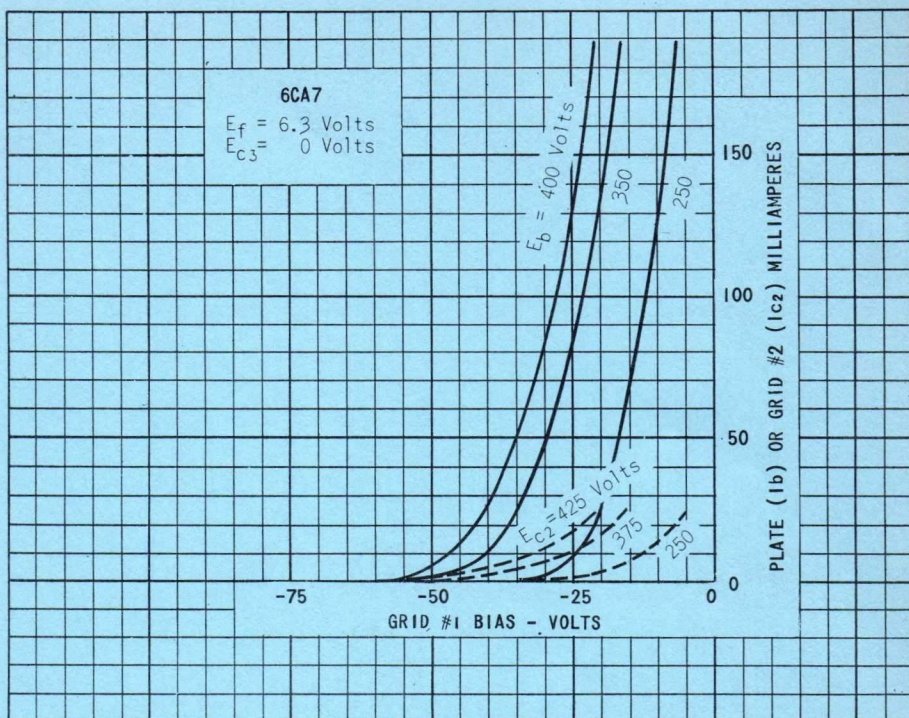
SUPPLY VOLTAGE	375	VOLTS
GRID #3 VOLTAGE	0	VOLT
CATHODE RESISTOR	370	OHMS
LOAD RESISTANCE	3000	OHMS
INPUT VOLTAGE (RMS)	18.9	VOLTS
PLATE CURRENT	70	MAMPS
MAX. SIGNAL POWER OUTPUT	6	WATTS
TOTAL HARMONIC DISTORTION	8	PERCENTS
INPUT VOLTAGE FOR POWER OUTPUT OF 50 MILLIWATTS (RMS)	1.7	VOLTS

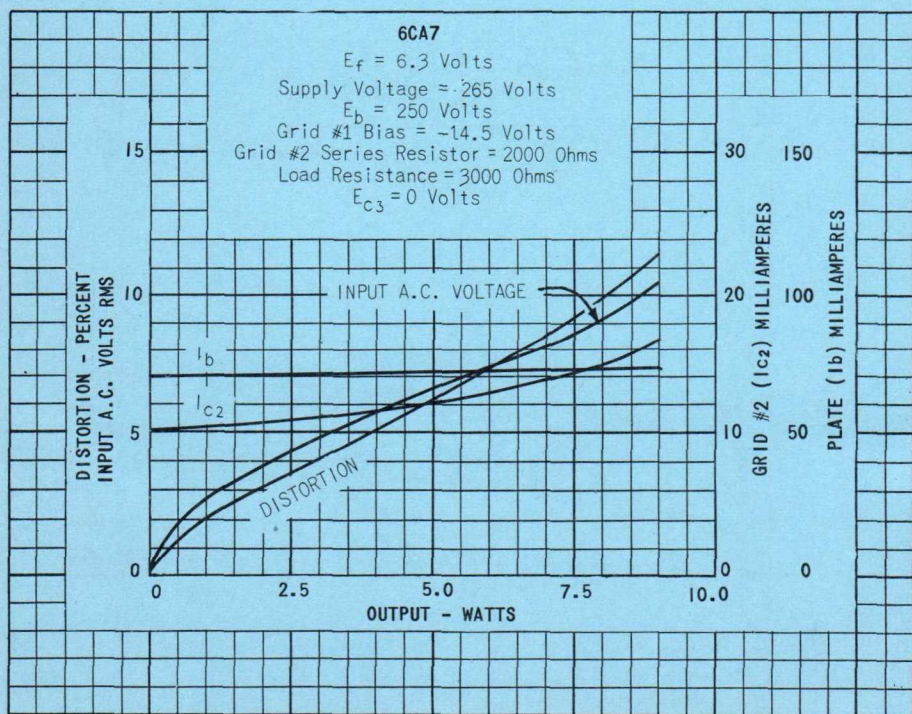
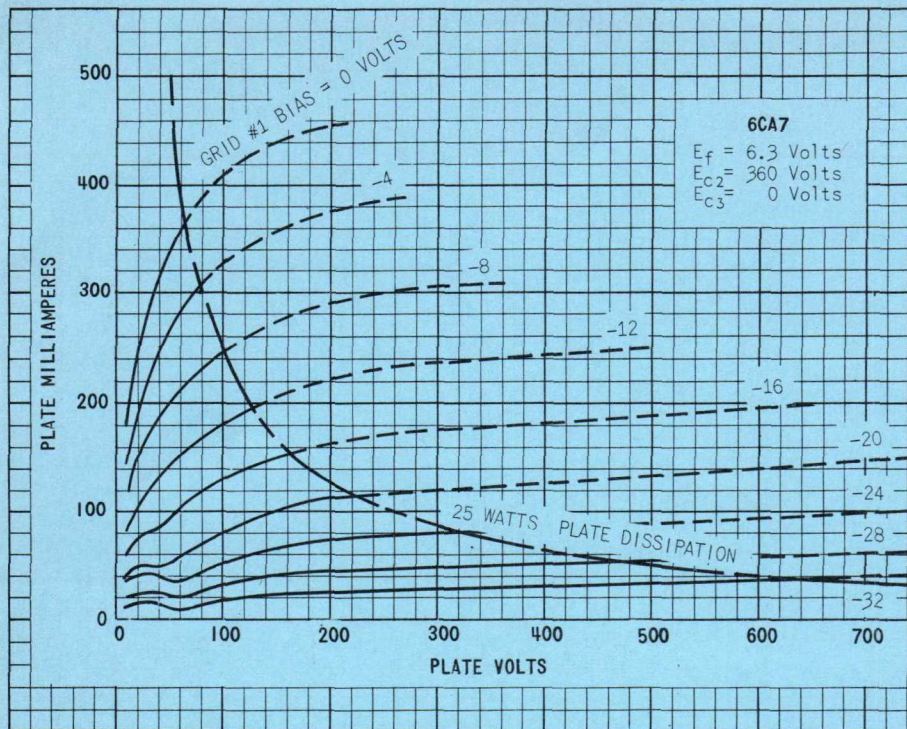
IN TRIODE CONNECTION

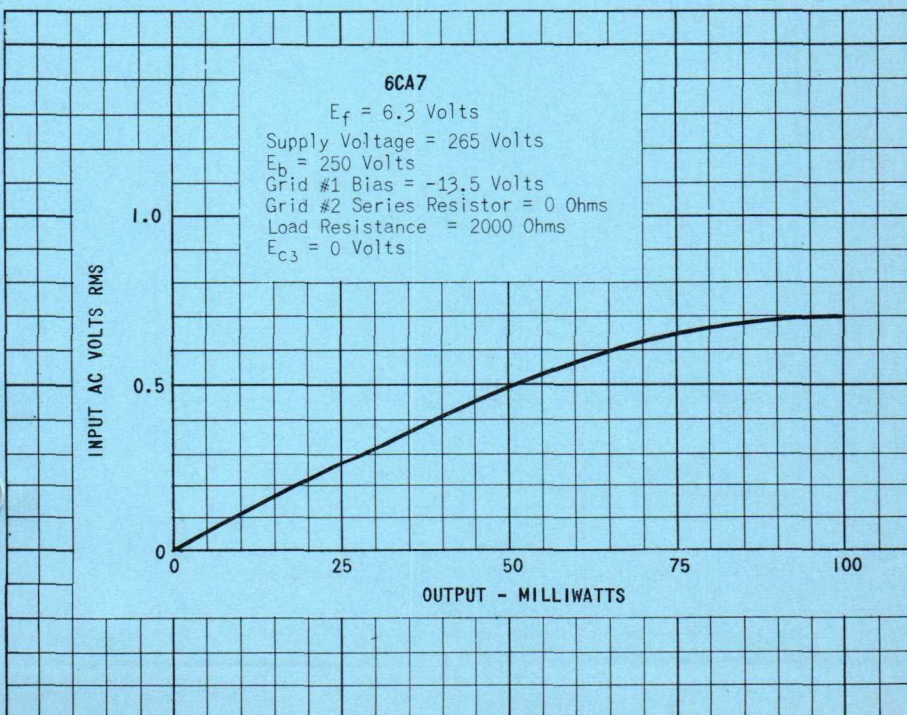
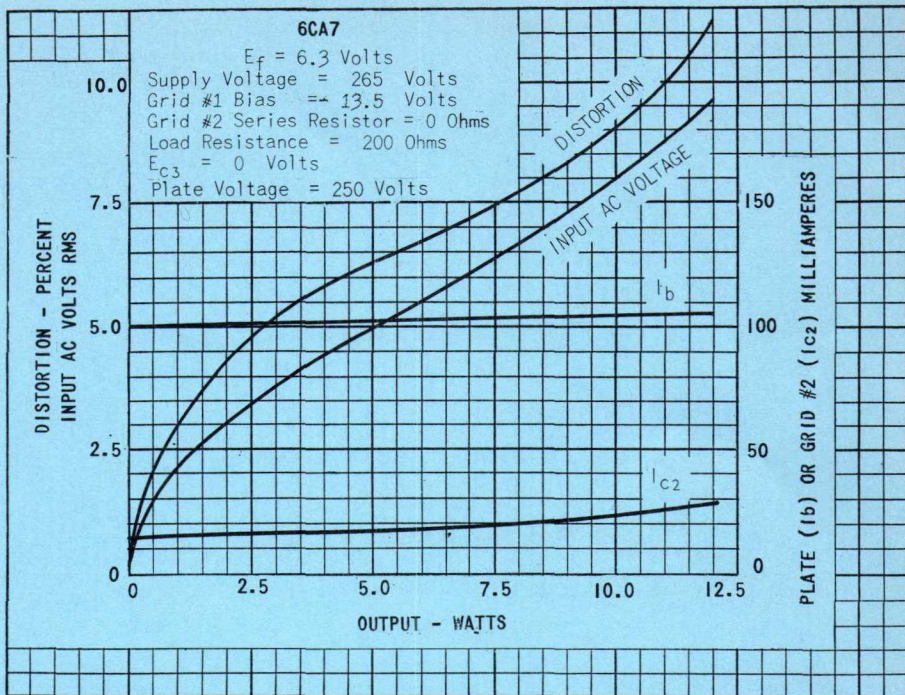
(GRID #2 CONNECTED TO PLATE)

CLASS AB, TWO TUBES, SUPPLY VOLTAGE 400 VOLTS

SUPPLY VOLTAGE	400	VOLTS	
GRID #3 VOLTAGE	0	VOLT	
CATHODE RESISTOR	220	OHMS	
LOAD RESISTANCE, PLATE TO PLATE	5000	OHMS	
INPUT VOLTAGE (RMS)	0	22	VOLTS
PLATE CURRENT	2X65	2X71	MAMPS
MAX. SIGNAL POWER OUTPUT	0	16.5	WATTS
TOTAL HARMONIC DISTORTION	-	3	PERCENTS







6CA7

TWO TUBES IN CLASS B PUSH-PULL

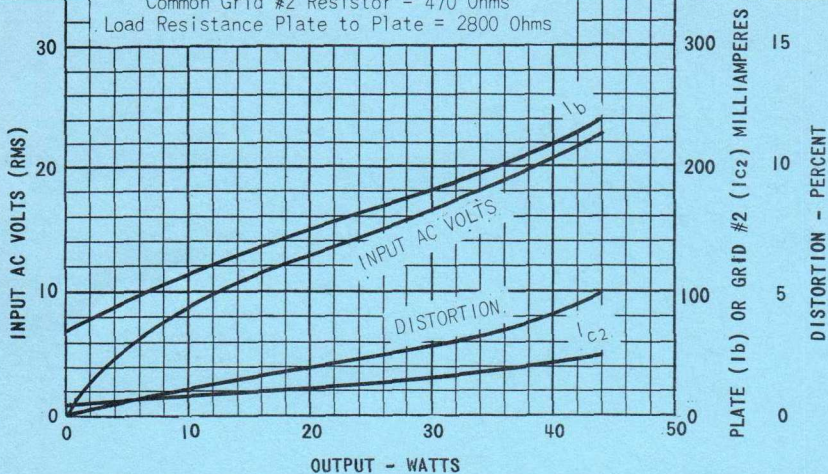
 $E_f = 6.3$ Volts

Supply Voltage = 375 Volts

Grid #1 Bias = -32 Volts

Common Grid #2 Resistor = 470 Ohms

Load Resistance Plate to Plate = 2800 Ohms



6CA7

TWO TUBES IN CLASS B PUSH-PULL

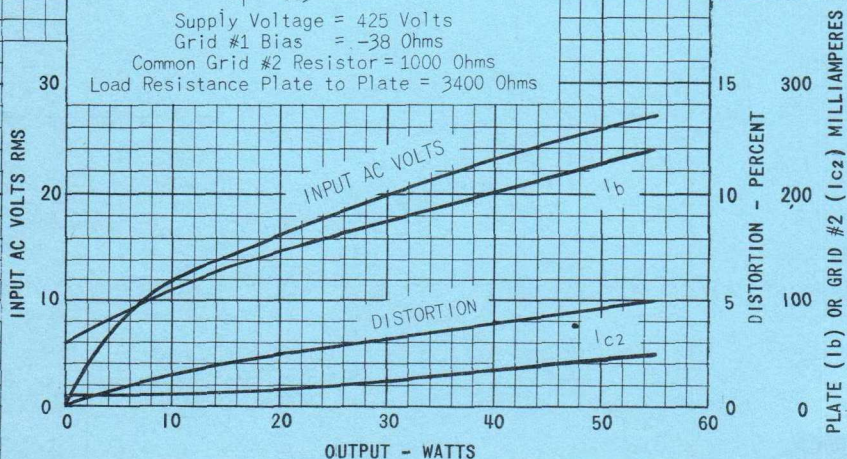
 $E_f = 6.3$ Volts

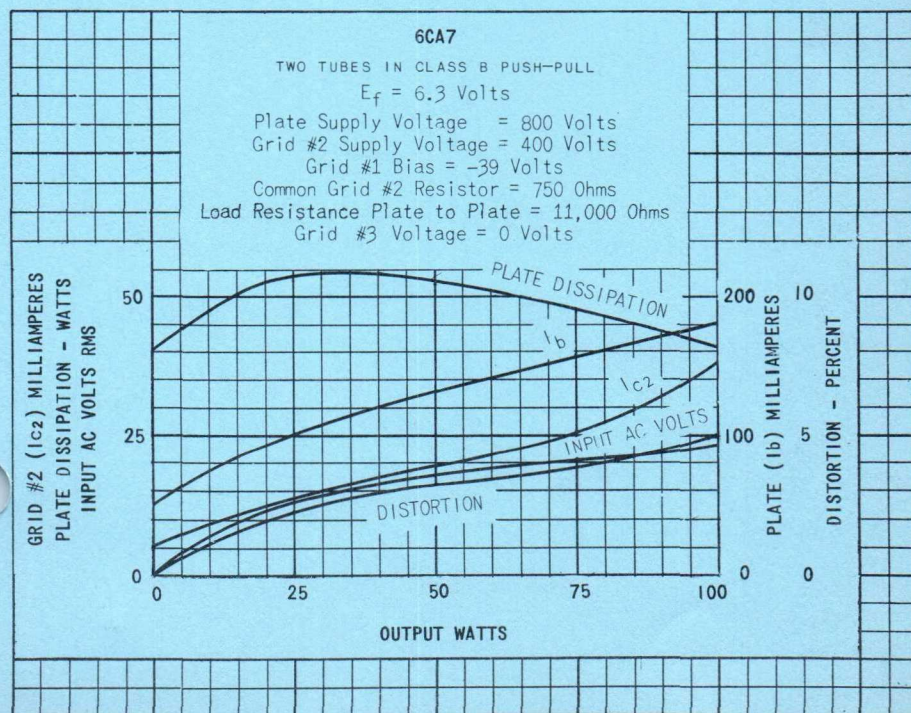
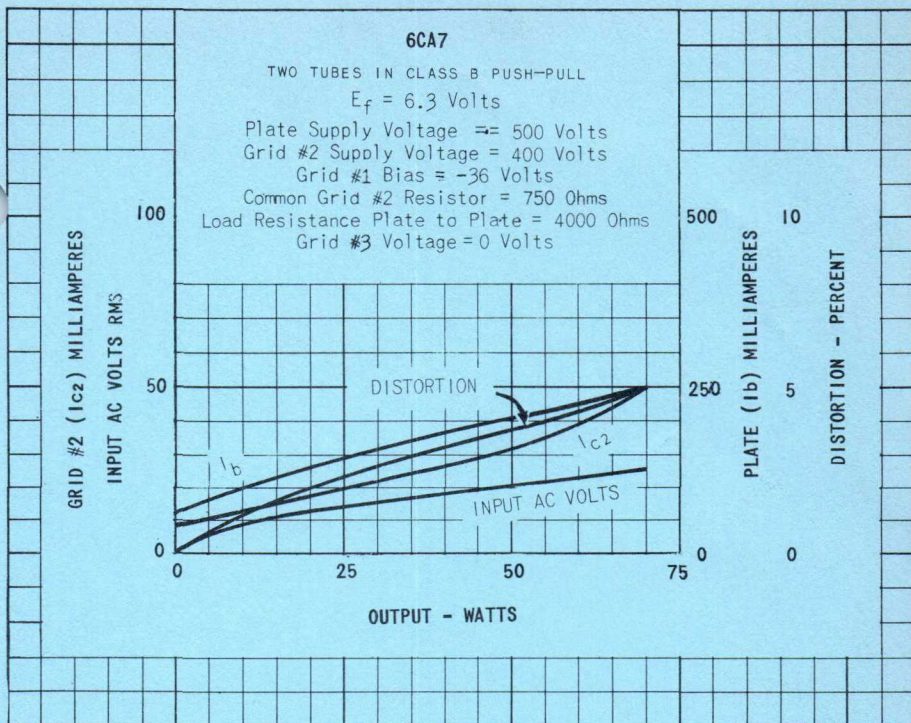
Supply Voltage = 425 Volts

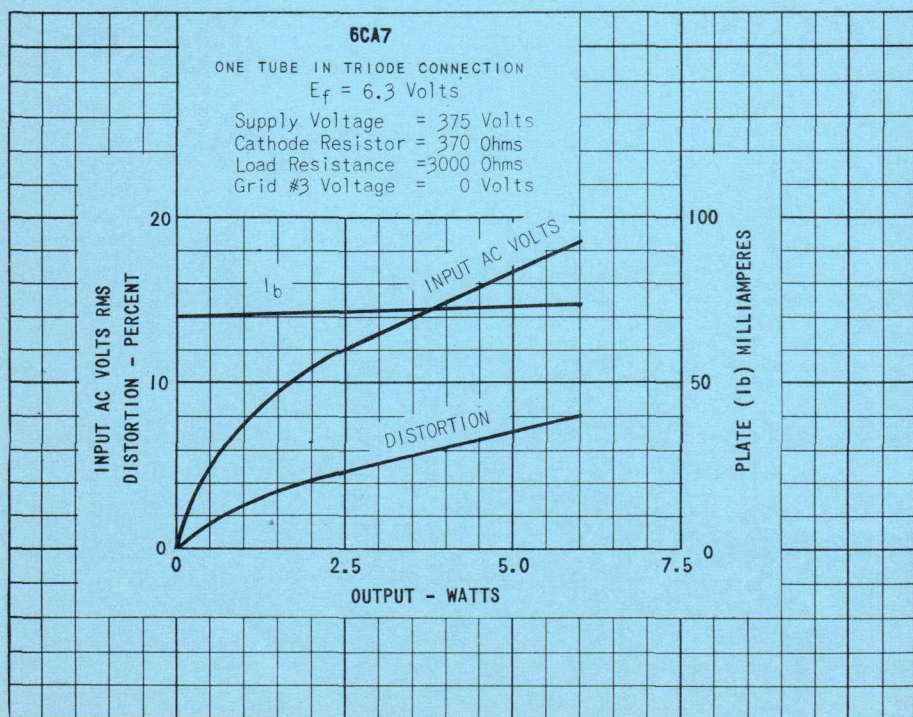
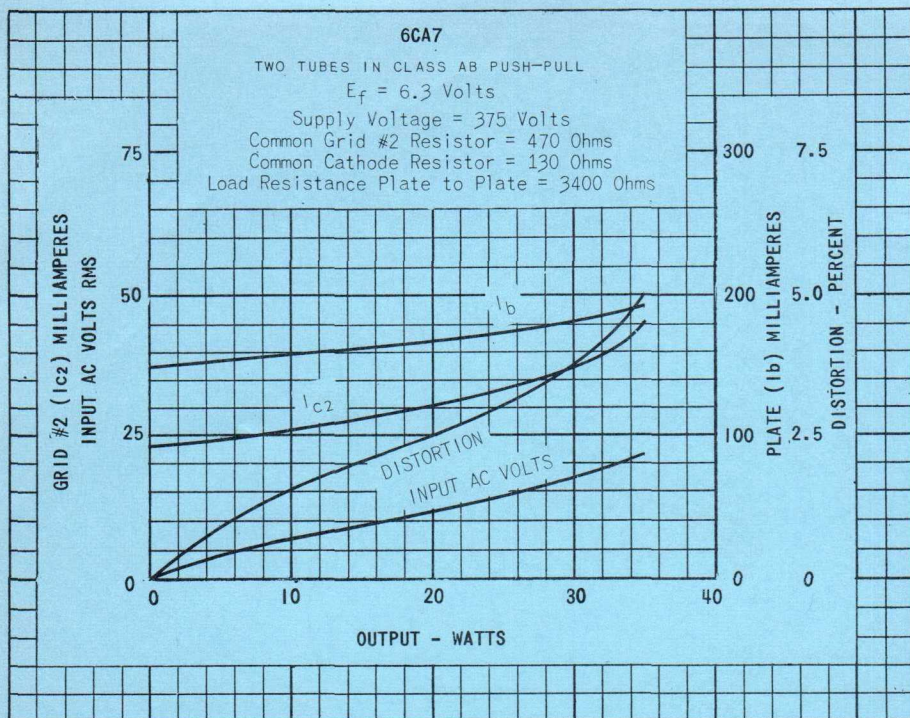
Grid #1 Bias = -38 Ohms

Common Grid #2 Resistor = 1000 Ohms

Load Resistance Plate to Plate = 3400 Ohms







6CA7

ONE TUBE IN TRIODE CONNECTION

 $E_f = 6.3$ Volts

Supply Voltage = 375 Volts

Cathode Resistor = 370 Ohms

Load Resistance = 3800 Ohms

Grid #3 Voltage = 0 Volts

