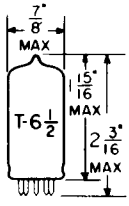
TUNG-SOL

TWIN TRIODE

MINIATURE TYPE

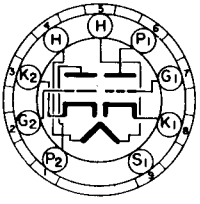


GLASS BULB

COATED UNIPOTENTIAL CATHODES

HEATER
6.3 VOLTS 0.45 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
MINIATURE BUTTON
9 PIN BASE
9AJ

IT IS RECOMMENDED THAT PIN #9 BE GROUNDED

THE 6BK7A AND 6BK7B ARE MINIATURE DOUBLE TRIODES DESIGNED PRIMARILY FOR USE AS CASCODE AMPLIFIERS AT FREQUENCIES BELOW APPROXIMATELY 300 MEGACYCLES. THE PERFORMANCE OF THE TUBES AS CASCODE AMPLIFIERS IS CHARACTERIZED BY HIGH GAIN AND A LOW NOISE FIGURE. THERMAL CHARACTERISTICS OF THE HEATER OF THE 6BK7B 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 WARM-UP TIME AND HEATER-CATHODE VOLTAGE RATINGS, THE TUBES ARE IDENTICAL.

DIRECT INTERELECTRODE CAPACITANCES

WITH NO EXTERNAL SHIELD

	SECTION 1	SECTION 2	
GRID TO PLATE	1.8	1.8	μμf
INPUT	3.0	3.0	μμf
OUTPUT	1.0	0.9	μμf
HEATER TO CATHODE	2.8	3.0	μμf
GRID TO GRID (MAX.)	0.004		μμf
PLATE TO PLATE (MAX.)	0.075		μμf
GROUNDED GRID OPERATION			
PLATE TO CATHODE	0.22	0.22	μμf
INPUT	6.0	6.0	μμf
OUTPUT	2.4	2.4	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

EACH SECTION

HEATER VOLTAGE	6.3	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:[A] ←		
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	300	VOLTS
MAXIMUM NEGATIVE DC GRID VOLTAGE	50	VOLTS
MAXIMUM PLATE DISSIPATION	2.7	WATTS
HEATER WARM-UP TIME (APPROX.)* (6BK7B ONLY)	11.0	SECONDS

[A] WHEN THE 6BK7A IS USED AS A CASCODE AMPLIFIER AND THE TWO SECTIONS ARE CONNECTED IN SERIES; THE HEATER-CATHODE VOLTAGE OF THE GROUNDED-GRID STAGE MAY BE AS HIGH AS 250 VOLTS MAXIMUM WITH RESPECT TO THE CATHODE AND AS HIGH AS 300 VOLTS MAXIMUM FOR THE 6BK7B.

*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.

→ HEATER CATHODE VOLTAGE FOR 6BK7A, NOW IDENTICAL TO 6BK7B.

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

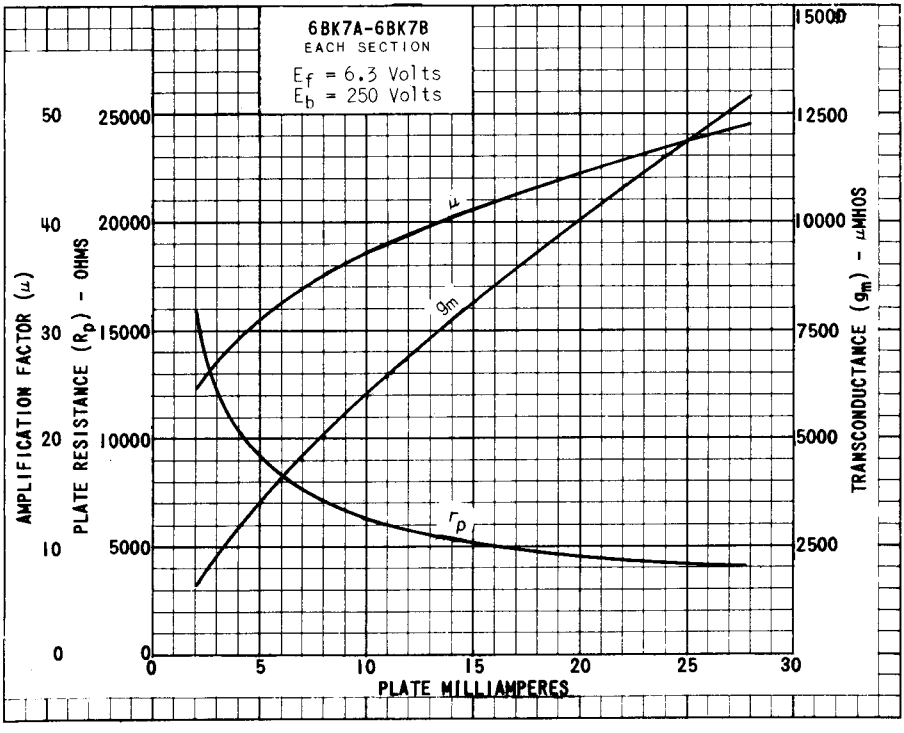
CONTINUED FROM PRECEDING PAGE

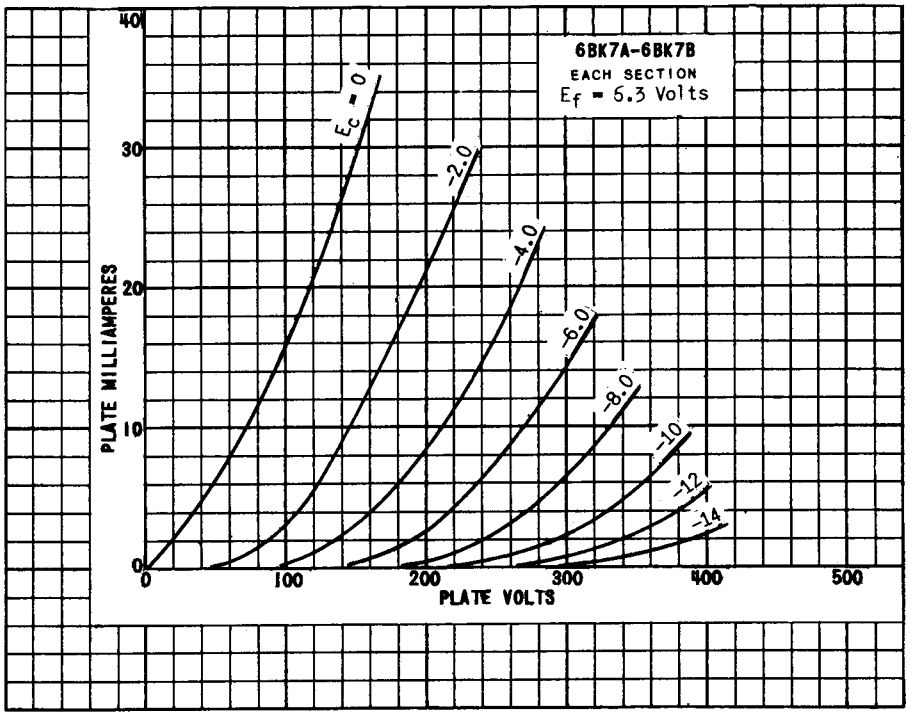
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

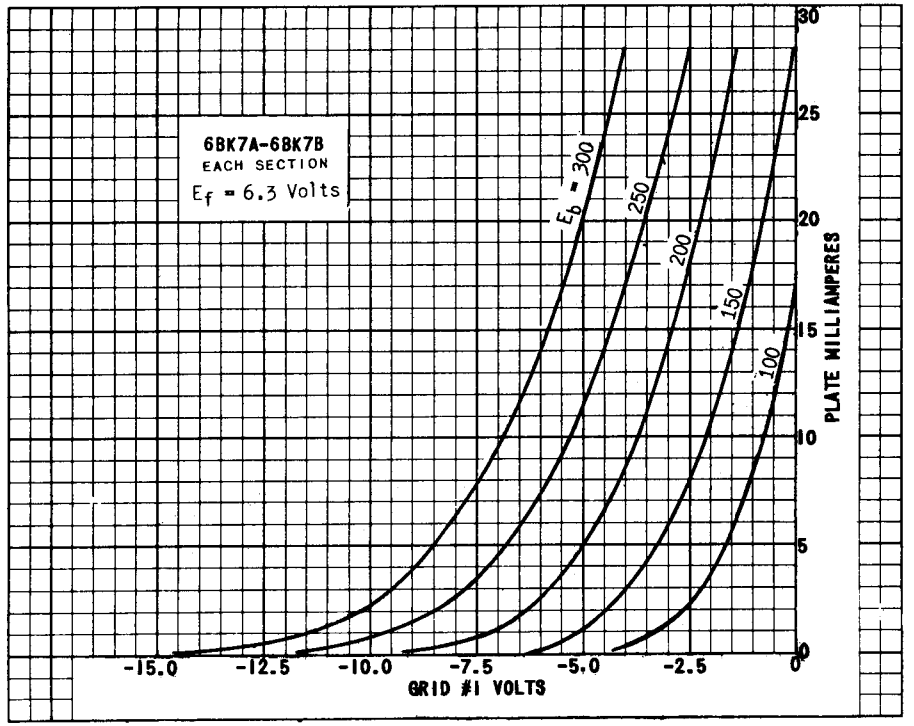
CLASS A_1 AMPLIFIER – EACH SECTION

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.45	AMP.
PLATE VOLTAGE	150	VOLTS
CATHODE BIAS RESISTOR	56	OHMS
AMPLIFICATION FACTOR	43	
PLATE RESISTANCE (APPROX.)	4 600	OHMS
TRANSCONDUCTANCE	9 300	µMHOS
PLATE CURRENT	18	MA.
GRID VOLTAGE (APPROX.) FOR I_b = 10 µA.	-11	VOLTS
NOISE FIGURE[B]	7	DECIBELS

[B] AS MEASURED IN A CASCODE AMPLIFIER WHICH OPERATES AT A PLATE SUPPLY VOLTAGE OF 250 VOLTS, A PLATE CURRENT OF 18 MA., A FREQUENCY OF 200 MEGACYCLES, A STAGE BANDWIDTH OF 7 MEGACYCLES, AND AN EFFECTIVE NOISE BANDWIDTH OF 3.5 MEGACYCLES.




6BK7A-6BK7B
EACH SECTION
Ef = 6.3 Volts
Ec = 0
-2.0
-4.0
-6.0
-8.0
-10
-12
-14
PLATE MILLIAMPERES
PLATE VOLTS
0
10
20
30
40
100
200
300
400
500


6BK7A-6BK7B
EACH SECTION
Ef = 6.3 Volts
Eb = 300
250
200
150
100
PLATE MILLIAMPERES
GRID #1 VOLTS
0
5
10
15
20
25
30
-15.0
-12.5
-10.0
-7.5
-5.0
-2.5