

PHILCO

RECEIVING TUBE

DATA SHEET

TENTATIVE

9BR7

12BR7A

DOUBLE DIODE-TRIODE TUBES

DESCRIPTION

The 9BR7 and 12BR7A receiving tubes contain two high perveance diodes and a general purpose, medium mu triode. The diodes have a common cathode and are electrically independent of the triode. The 9BR7 and 12BR7A are identical to the 12BR7 except for heater ratings and warm-up time.

MECHANICAL DATA

Cathode	Coated Unipotential
Outline Drawing	6-2
Bulb	T6 1/2 Glass
Base	E9-1 Small Button Miniature
Maximum Diameter	7/8 inch
Maximum Overall Length	2 3/16 inches
Maximum Seated Height	1 15/16 inches
Basing	9PM 9CF

1—Triode Plate	6—Diode #2
2—Triode Grid	7—Diode #1
3—Triode Cathode	8—Diode Cathode and Internal Shield
4—Heater	9—Heater Center Tap
5—Heater	

ELECTRICAL DATA

Direct Interelectrode Capacitances

	Unshielded	Shielded*
Grid to Plate (g to p)	1.9	1.9 μf
Input, g to (h+k+i.s.)	2.6	2.8 μf
Output, p to (h+k+i.s.)	0.3	1.0 μf
Diode Input (each unit) d to (h+k+i.s.)	1.8	2.0 μf

*External shield #315 connected to pin #8

Heater Characteristics

	12BR7A	9BR7	
Heater Voltage	6.3/12.6	4.7/9.4	volts
Heater Current	450/225 $\pm 6\%$	600/300 $\pm 6\%$	ma
Heater Warm-up Time (Note 1)	11	11	sec

Maximum Ratings (Design-Center Rating System)

Plate Voltage	300	300	volts
DC Grid Voltage	-50	-50	volts
Plate Dissipation	2.5	2.5	watts
Peak Inverse Diode Voltage	300	300	volts
Peak Diode Current (each unit)	60	60	ma

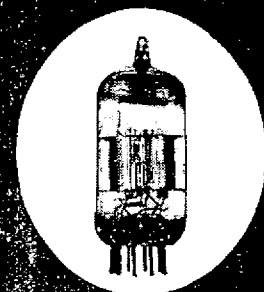
Heater-Cathode Voltage

Heater Negative with Respect to Cathode

(Total DC and Peak)	300	300	volts
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Heater Positive with Respect to Cathode

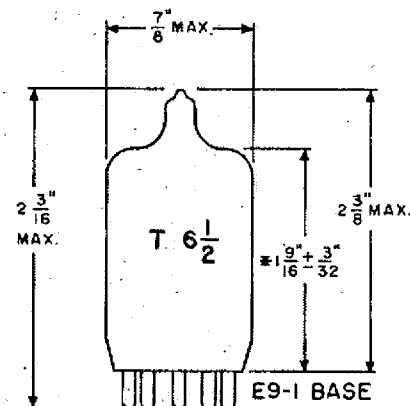
DC	100	100	volts
Total DC and Peak	200	200	volts



GENERAL DESCRIPTION

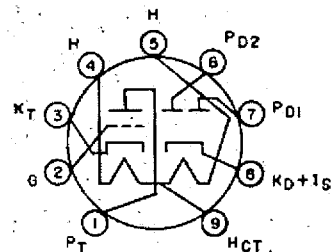
Jumbo miniature double high perveance diodes, medium mu triode.

DIMENSIONAL OUTLINE AND MECHANICAL SPECIFICATIONS



* MEASURED FROM BASE SEAT TO BULB-TOP LINE
AS DETERMINED BY RING GAUGE OF $\frac{7}{16}$ I.D.

6-2



9 PM

BASING DIAGRAM
Bottom View of Base

**Typical Operating Conditions and Characteristics—
Class A Amplifier**

	12BR7A	9BR7	
Plate Voltage	100	250	volts
Cathode Bias Resistor	270	200	ohms
Plate Resistance (approximate) ..	15000	10900	ohms
Transconductance	4000	4000	μ mhos
Amplification Factor	60	60	
Plate Current	3.7	10	ma
Grid Voltage (approximate) for 10 μ a plate current	-5	-12	volts

**Typical Operating Conditions and Characteristics—
Diode Section**

Average Diode Current, Each Plate at 5 v DC.....17 ma

NOTE 1—Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four times the rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three times the rated heater voltage divided by the rated heater current.