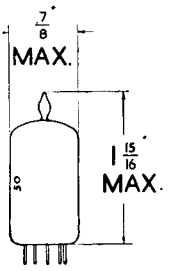
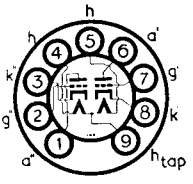


B9A (Noval) Base

Current Equipment Type

TYPE 12AT7
MINIATURE
HIGH SLOPE
DOUBLE TRIODE



The separate cathode connections and tapped heater features enable the 12AT7 to be used in a variety of applications. As a frequency changer it will operate at frequencies up to 500 Mc/s.

RATINGS

Heater Voltage	6.3 or 12.6 volts
Heater Current	0.3 or 0.15 amp.
Anode Voltage	300 volts max.
Anode Dissipation (each section)	2.5 watts max.
D.C. Cathode Current (each section)	20 mA. max.
Anode Voltage (zero Anode Current)	550 volts max.

OPERATING CHARACTERISTICS

	(Each Section, Class A)			
Anode Voltage	100	180	250	volts
Anode Current	3.7	11.0	10.0	mA
Grid Voltage	—1	—1	—2	volts
Anode Impedance	13,500	9,400	10,000	ohms
Mutual Conductance	4.0	6.6	5.5	mA/V
Amplification Factor	54	62	55	
Grid Voltage (for Anode Current cut-off)	—6	—8	—12	volts

OPERATION AS FREQUENCY CHANGER

OSCILLATOR SECTION

Anode Supply Voltage	250 volts
Anode Decoupling Resistor	1,000 ohms
Grid Resistor	10,000 ohms

MIXER SECTION

Anode Supply Voltage	250 volts
Anode Decoupling Resistor	1,000 ohms
Cathode Bias Resistor	680 ohms
* Conversion Conductance	2.5 mA/V
† Heterodyne Voltage	(See note)

* *Exact value depends on circuit constants and input impedance considerations.*

† *Heterodyne voltage should be just less than that required to cause grid current in the mixer section.*

INTER-ELECTRODE CAPACITANCES *

Grid to Grid	0.005 pF max.
Anode to Anode	0.4 pF max.

EACH SECTION

Input	2.5 pF
Output	0.4 pF
Grid to Anode	1.5 pF
Cathode to Heater	2.5 pF

**Measured with no external shield.*

Type 12AT7 *is a commercial equivalent of the* CV455.

BRIMAR 12AT7
ONE TRIODE AS A FREQUENCY CHANGER
113
MIXER ANODE CURRENT I_a mA
CONVERSION CONDUCTANCE g_c mA/V
PEAK OSCILLATOR VOLTAGE ON MIXER GRID
I_a
g_c
I.F. OUTPUT
250 VOLTS
12AT7
·01μF
680Ω
SIGNAL INPUT
FROM LOCAL OSCILLATOR

BRIMAR 12AT7.
EACH SECTION.
V_f 12·6 v.
ANODE CURRENT - mA.
ANODE VOLTAGE - V_a.
V_g = 0
-1
-2
-3
-4
-5
-6
-7
-8