

Ediswan Mazda Applications Department

Siemens Edison Swan Limited, Cosmos Works, Brimsdown, Enfield, Middlesex.

SUBJECT

9EN7

CHIEF ENGINEER'S OFFICE
(APPLICATIONS)

DATE: 4th February, 1959.
T.D.S. No. 2-V873-0-1D.

VALVE TYPE 9EN7

DIMENSIONS	m. m.	TYPE	Triode Pentode.
OVERALL LENGTH	MAX. 56	CATHODE	Indirectly Heated.
DIAMETER	MAX. 22.2	USE	AC/DC Mains Television Receivers.
SEATED HEIGHT	MAX. 49		V.H.F. Frequency Changer.

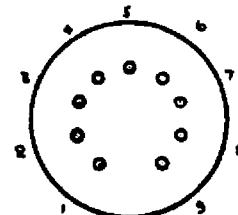
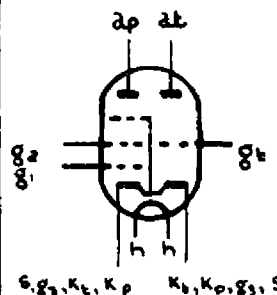
RATING.

	Pentode.	Note.	Triode.	NOTE
Heater Volts	9.0		-	
Heater Current (amps)	0.3		-	
Maximum Anode Volts	250		250	
Maximum Screen Volts	175		-	
Mutual Conductance (mA/V)	8.5	B	5.0	A
Amplification Factor			20	
Maximum Anode Dissipation (Watts)	1.7		1.5	
Maximum Screen Dissipation (Watts)	0.5			
Maximum Cathode Current (mA)	14		14	
Maximum Heater to Cathode Volts (r.m.s.)	200			

American Base E9-1. Bulb T6 1/2

CAPACITANCES PF					BASING † 9LM BASE B9A (NOVAL)		CAP
ELECTRODES	*	**			PIN	ELECTRODE	
g1 TO all	6.7	7.6			1	kp, & pin8	
ap TO all	5	6			2	g2	
g1 TO ap	0.014	0.017			3	ap	
					4	h	
gt TO E	3.2	4			5	h	
at TO E	3.2	4			6	at	
gt TO at	1.6	1.8			7	gt	
					8	kt, g3, s, kp	
					9	g1	

The symbol 'E' denotes the electrodes of any second valve section and the remaining secondary electrodes of the section under measurement. * & ** pined to cathode unless otherwise stated. † Measurement with valve cold.



VIEW OF FREE END.

MOUNTING POSITION: Unrestricted.

TYPICAL OPERATION. TENTATIVE.

As Frequency Changer with Oscillator Volts applied to gt.

Pentode-

Supply Voltage.....	200
Anode Volts.... (Decoupling Resistance = 4.7k Ω).....	164
Screen Volts... (Rg2 = 27 k Ω).....	138
g1 Resistance for Grid Current Bias..... (ohms).....	100,000
g1 Current..... (mA).....	33
Conversion Conductance..... (mA/V).....	3,300
Heterodyne Volts Peak.....	3.7
Anode Current..... (approx) (mA).....	7.6
Screen Current..... (approx) (mA).....	2.3

Triode-

Anode Volts.....	120
Anode Current..... (mA) (average).....	6

Notes-

- A. Va = 100V. Ia = 14mA. B. Va = 170V. Vg2 = 170V. Ia = 10mA.
 - † Basing arranged to minimise pentode cathode lead inductance effects.
 - * Inter-electrode Capacity with holder capacity balanced out but with cylindrical screen cap.
 - ** Total capacity including ceramic B9A holder with cylindrical screen. (Plessey holder type CP18002A/3.)
- The basing of the 9EN7 is particularly suitable for printed circuit use. The triode is identical to that in the 90C1.

CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE TYPE 9EN7

GRID SECTION

17 2 56

832 (PCF80)

40

30

20

10

ANODE CURRENT
MILLIAMPSE_b = 150E_b = 100E_b = 50E_b = 0

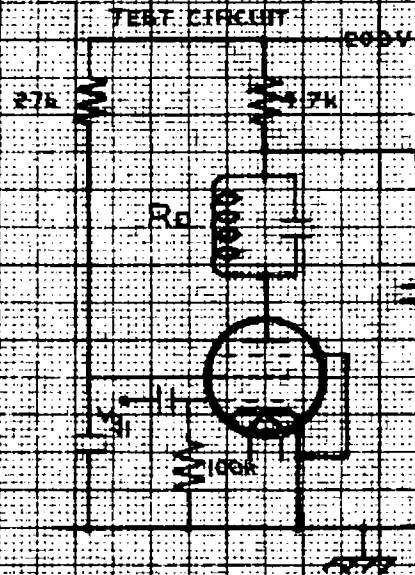
200 VOLTS

-15

-10

-5

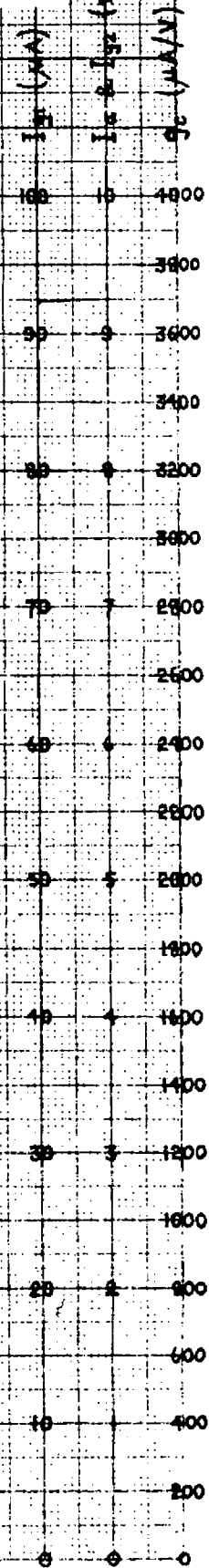
TENTATIVE CHARACTERISTIC CURVES OF EDISWAN MAZDA VALVE TYPE 9EN7 CONVERSION CONDUCTANCE



V_b R_a R_{g2} R_{g1}
200 4.7k 27k 100k

R_c I_h P C_{g1}
10-5k 0-3A 1Mc 0-50pF
HETERODYNE INJECTED
INGI

PEAK HETERODYNE VOLTS



CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE TYPE 9EN7

TRIODE SECTION

ANODE CURRENT - MILLIAMPS

ANODE VOLTS

