

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	The symbol 'E' denotes the electrodes of the first wave section and the remaining second wave section and the remaining third wave section of the triode section under measurement. * & ** joined to cathode unless otherwise stated. † Measurement with valve cold.					
ap	TO all	5	6						
g1	TO ap	0.014	0.017						
gt	TO E	3.2	4						
at	TO E	3.2	4						
gt	TO at	1.6	1.8						
TO									
TO									
TO									
TO									
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 = 4.7kΩ).....						164			
Screen Volts... (Rg2 = 27 kΩ).....						138			
g1 Resistance for Grid Current Bias..... (ohms).....						100,000			
g1 Current..... (mA).....						33			
Conversion Conductance..... (μA/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 can.									
** Total capacity including ceramic B9A holder with cylindrical screen. (Plessey holder type CP180024/3.)									
The basing of the 9EN7 is particularly suitable for printed circuit use. The triode is identical to that in the 9OC1.									

CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE TYPE 9EN7

GRID SECTION

17.2.56

832 (PCF80)

40

30

20

10

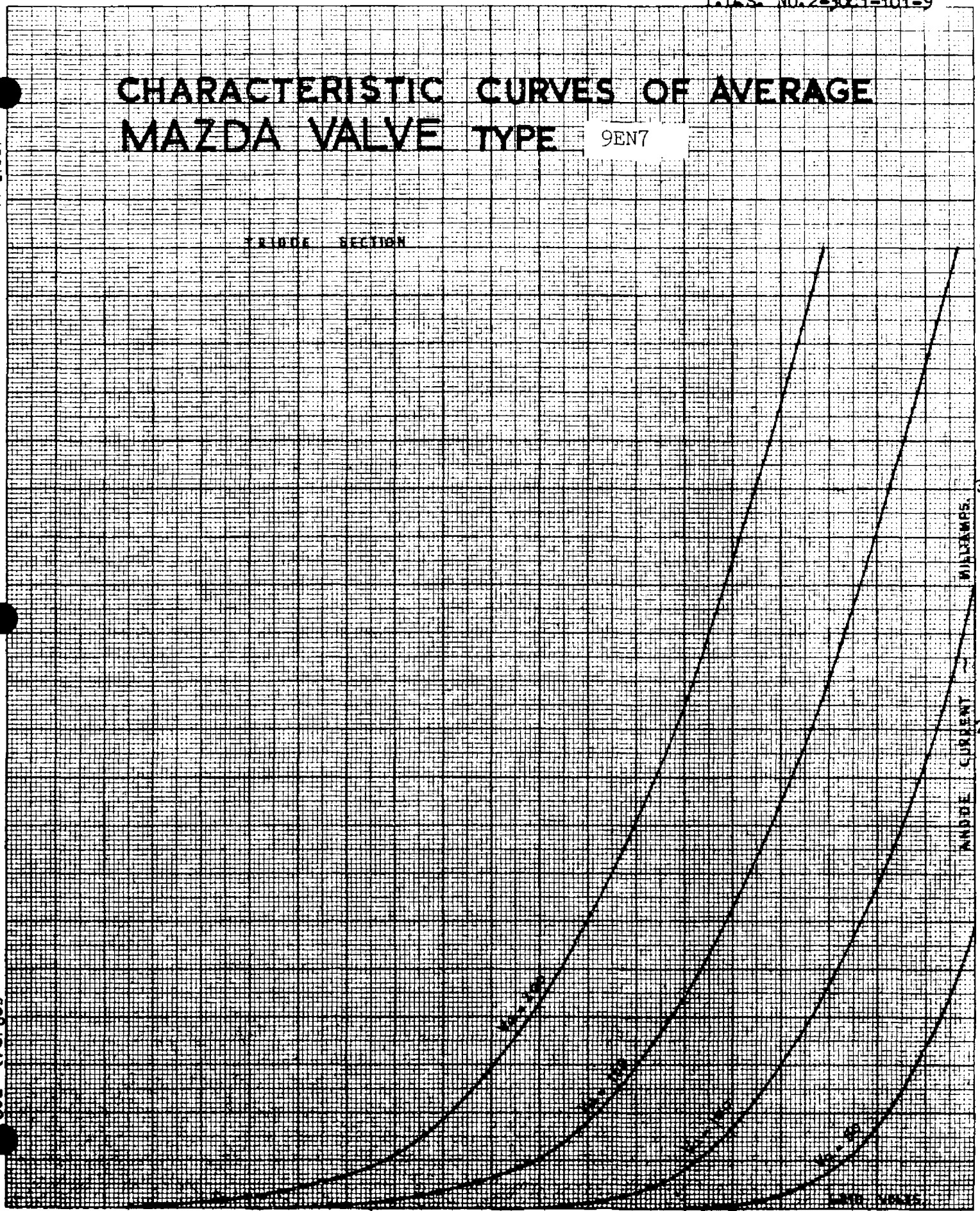
ANODE CURRENT MILLIAMPS

-15

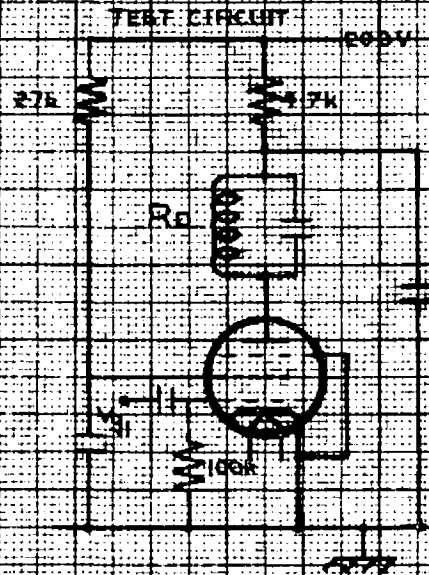
-10

-5

0V GRID



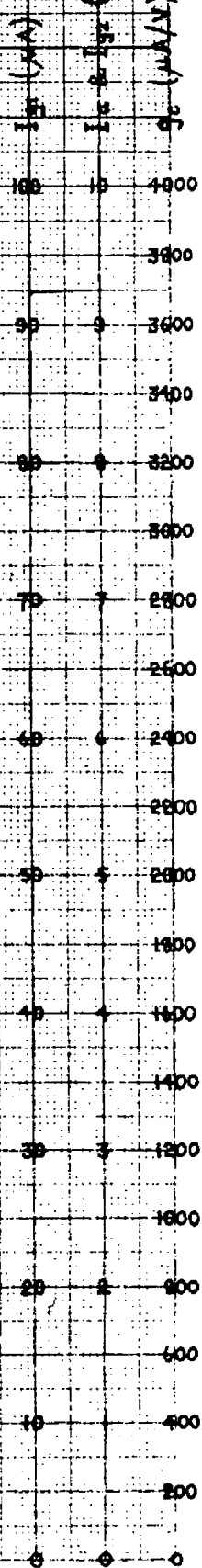
TENTATIVE CHARACTERISTIC CURVES OF EDISWAN MAZDA VALVE TYPE 9EN7 CONVERSION CONDUCTANCE



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

R_D I_h P C_{g1}
10.5k 0.3A 100W 0.001F
HETERODYNE INJECTED
INGI

PEAK HETERODYNE VOLTS



CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE TYPE 9EN7

TRAJDER SECTION

ANODE CURRENT - MILLIAMPS

ANODE VOLTS

