1.P.10

MAZDA

1.P.10

OUTPUT PENTODE

Directly heated – for battery operation

TENTATIVE

GENERAL

The 1.P.10 has a 2.8 volt 50 mA filament with a centre tap. For normal operation from a 1.4 volt dry cell the two sections so formed are connected in parallel.

In some applications, such as AC/DC/battery receivers, it may be desirable to connect all the valve filaments in series; in which case the two filament sections of the 1.P.10 would be run in series. With this arrangement a shunting resistance must be placed across the 1.4 Volt section of the 1.P.10 nearest the negative end of the chain, in order to by-pass the cathode current in excess of the rated maximum per section. If the cathode current of the other valves contributes to the filament current of the 1.P.10, it may be necessary to by-pass both filament sections.

RATING		¶		]
Filament Voltage (volts)	V_f	2.8		1.4
Filament Current (amps)	I_f	.05		0.1
Maximum Anode Voltage (volts)	$V_{a(max)}$		90	
Maximum Screen Voltage (volts)	$V_{g2(max)}$		67.5	
Maximum Mean Cathode Current (mA) with Input swing	$I_{k(av)max}$	5.5 •		11.0
Maximum Quiescent Cathode Current (mA)	$I_{k(o)max}$	4.5 •		9.0

¶ Series Filament Arrangement

] Parallel Filament Arrangement

• For each 1.4v. Filament Section.

DIMENSIONS

Maximum Overall Length (mm)	54
Maximum Diameter (mm)	19.0
Maximum Seated Height (mm)	47.6
Approximate Nett Weight (ozs)	0.25
Approximate Packed Weight (ozs)	0.5

MOUNTING POSITION - Unrestricted.

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TENTATIVE

TYPICAL OPERATION AS CLASS 'A' AMPLIFIER		§		‡	
Anode Voltage (volts)	V_a	67.5	90	67.5	90
Screen Voltage (volts)	V_{g2}	67.5	67.5	67.5	67.5
Control Grid Bias (volts) †	V_{g1}	-7	-7	-7	-7
Quiescent Anode Current (mA)	$I_{a(o)}$	6.0	6.1	7.2	7.4
Quiescent Screen Current (mA)	$I_{g2(o)}$	1.2	1.1	1.5	1.4
Mutual Conductance (mA/V)	g_m	1.4	1.43	1.55	1.58
Anode Impedance (megohms)	r_a	0.1	0.1	0.1	0.1
Anode Load (ohms)	Z_a	5,000	8,000	5,000	8,000
Input Swing (volts RMS)	$V_{rms(sig)}$	5	5	5	5
Power Output (mW)	P_{out}	160	235	180	270
Percentage Total harmonic Distortion (%)	D	12	13	10	12

§ Series Filament Arrangement.

‡ Parallel Filament Arrangement.

† Referred to negative end of the filament.

BULB Clear

BASE B.7.G.

Viewed from free end of pins.

CONNEXIONS

Pin 1	Filament	f
Pin 2	Anode	a
Pin 3	Control Grid	g1
Pin 4	Screen Grid	g2
Pin 5	Filament C.T. Grid 3	f(tap)g3
Pin 6	Anode	a
Pin 7	Filament	f

For Parallel filament operation Pin 5 should be connected to L.T. negative.

For Series filament operation Pin 1 is normally connected to L.T. negative.