

CV57/E1271

The CV57/E1271 valves were manufactured by Marconi/GEC, originally designed as a pulse modulator, they are indirectly heated with an oxide cathode and are suitable for audio use, we have constructed an experimental amplifier using 2 x E1271 in push-pull, the maximum power output obtained was 90 watts but optimum performance was proved to be in the region of 35-50 watts.

The E1271 is 17cm tall with a chrome plated Jumbo base and top cap, the large double cathode construction produces much illumination and excellent audio quality.

TECHNICAL INFORMATION.

Base: 4 pin bayonet (jumbo)

Connections:

Pin 1 = Grid 1.
Pin 2 = Heater and Cathode
Pin 3 = Grid 2.
Pin 4 = Heater.
Top cap. = Anode



DATA:

Operating Data

Va max.	11kV	Va	600V	OR	Va	450V
VG2 max.	1.4kV	Ia	130mA		Ia	100mA
Vh	12.6V	Vg	-35V		Vg	-25V
Ih	1.75A	Vg2	300V		Vg2	300V
			8 mA/V		gm	6 mA/V

In our experiments we found that using the anode voltage of 600V and bias of -35V we could obtain approximately 90 watts of audio power measured across a 16 ohm load resistor using an anode load impedance of 4000 ohms (anode to anode) for a pair of E1271 in class B push-pull, however we were concerned about the high anode current level and continued our experiments using class AB1 push-pull. Optimum results with minimum distortion were eventually obtained using the following data:

Va 600V
Vg2 300V
Vg -67V

This resulted in an Ia of 100mA (2 Valves), Ig2 of 10mA. and a power output with minimum distortion of 32 watts using a transformer of 4500 ohms anode to anode impedance.

The following circuit was designed and built using inexpensive valves as driver and audio amplifiers, the component values quoted are those found to provide the best audio quality using the transformers available to us.

The circuit uses a 6J5 as audio amplifier RC coupled to a 6F6 which as a driver is transformer coupled to the two E1271/CV57.

For stereo use the 5R4GY is capable of handling the additional HT current.

Specification MAP/CV57/Issue 5 Dated 30.4.48 To be read in conjunction with K1001, ignoring clauses:- 5.2, 5.3, 5.8, 7.2.	<table border="1"> <tr> <th colspan="2">SECURITY</th></tr> <tr> <td>Specification RESTRICTED</td><td>Valve UNCLASSIFIED</td></tr> </table>	SECURITY		Specification RESTRICTED	Valve UNCLASSIFIED
SECURITY					
Specification RESTRICTED	Valve UNCLASSIFIED				

Indicates a change

<u>TYPE OF VALVE</u> - Tetrode			<u>MARKING</u> See K1001/4		
<u>CATHODE</u> - Indirectly heated					
<u>ENVELOPE</u> - Glass-unmetallised					
<u>RATING</u>			<u>BASE</u> T4 See K1001/AIV/D7		
			<u>Pin</u>		
			<u>Electrode</u>		
Heater Voltage (V) 12.6			1 Control grid		
Heater Current (A) 1.75			2 Heater		
Max. Anode Voltage (kV) 11.0			3 Screen grid		
Max. Screen Voltage (kV) 1.4			4 Heater & Cathode		
Max. Anode Dissipation (W) 15.0			T.C. Anode		
Max. Screen Dissipation (W) 2.5					
Max. Grid Bias for cut-off (V) -800			<u>TOP CAP</u> See K1001/AI/D5.1		
Max. Peak Anode Current (A) 5.0			<u>DIMENSIONS</u> See K1001/AI/D1.		
Max. Peak Screen Current (A) 0.6					
<u>CAPACITANCES (pF)</u>			<u>Dimension</u>		
C _{ae} 11.0			<u>Min.</u>		
C _{ge} 21.0			<u>Max.</u>		
C _{ag} 0.5					
<u>NOTE</u> A:- The above ratings apply for use as a series modulator with an off-on ratio of 400 to 1.			Z (mm) 152 165 B (mm) - 57		

To be performed in addition to those applicable in K1001.

Test Conditions						Test	Limits		No. Tested	Note
Vh	Vg1	Vg2	Va	Ig2	Ia		Min.	Max.		
Between 12V. and 15V.	-	Strapped. Applied voltage raised slowly to 3.5kV. and maintained till flashing ceases.		A trace		<u>SCREEN HOT FLASH PROCESS</u> Applied anode and screen voltage to be maintained at 3.5kV. for a period of one minute without further flashing.			100%	1
ditto	Strapped	Raised slowly to 18kV and maintained till flashing ceases.	-	A trace		<u>ANODE HOT FLASH PROCESS</u> Applied anode voltage to be maintained at 18kV. for a period of one minute without further flashing.			100%	1
12.6	0	0	0	0	0	Ih (A)	1.55	1.95	100%	
12.6	-	Strapped. 200V. applied. Maintained for 30secs.		Ia + Ig2 = 75mA.		Ig (μA)	-	20	100%	
12.6	-	Strapped. 200V. applied.		Ia + Ig2 = 75mA.		Vg1 (V)	-30	-45	100%	
12.6	-	See Note 2.	-	10μA		Vg1 (V)	-	-25	100%	2
5.25 A.C. or D.C.	0	Strapped. 300V. applied.	-	-		Ic (mA)	15	-	100%	
See K1001/AIII						<u>CAPACITANCES (pF)</u>				
						1. Cae	6.9	11.1	1%(1)	
						2. Cge	15.75	26.25	1%(1)	

NOTES

- :- Tests (a) and (b) form part of the processing of the valve, and having been met during manufacture they shall not be repeated for acceptance testing. For these hot flash tests, the applied voltage shall be supplied through a circuit as in Fig.1, page 3.
- For test (f), the anode and screen grid voltages shall be derived from the network as in Fig.2, page 3.

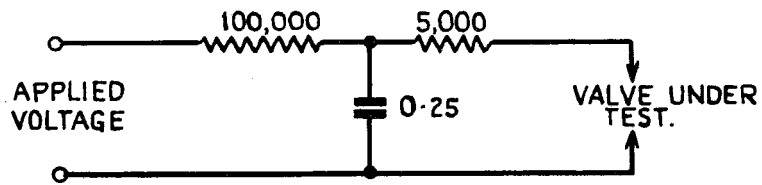


FIG. 1.

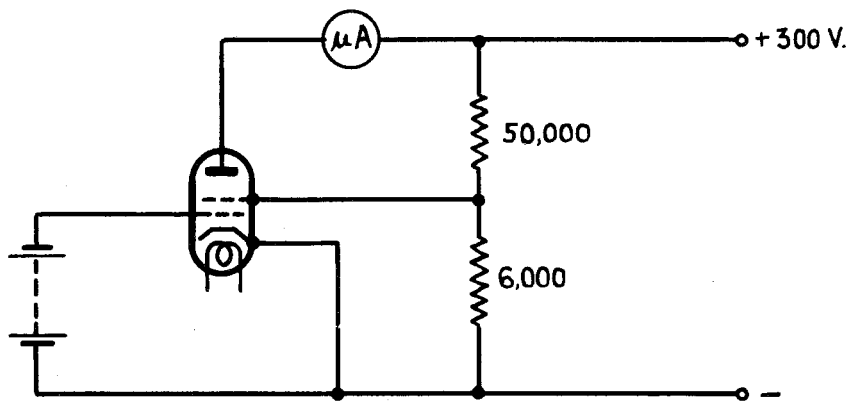


FIG. 2.