

MINISTRY OF SUPPLY (S.R.D.E.)

VALVE ELECTRONIC

CV484

Specification MOS/CV 484 incorporating MIL-E-1/326 Issue 1 dated 10.5.56. To be read in conjunction with K1006				<u>SECURITY</u> <u>Specification</u> Unclassified		<u>Valve</u> Unclassified	
<u>TYPE OF VALVE:-</u> Power amplifier pentode <u>CATHODE:-</u> Directly heated <u>ENVELOPE:-</u> Glass-unmetallised <u>PROTOTYPE:-</u> 3S4				<u>MARKING</u> See K1001/4 Add:- 3S4			
				<u>BASE</u> BS 448/B7G (miniature button 7 pin)			
				<u>CONNECTIONS</u>			
<u>RATING</u>				<u>Note</u>			
Filament voltage (series) (V) 2.8				Pin			
Filament current (series) (mA) 50				Electrode			
Filament voltage (parallel) (V) 1.4				1 -f Note C			
Filament current (parallel) (mA) 100				2 p			
Max. anode voltage (V) 100 A				3 g ¹			
Max. screen voltage (V) 75 A				4 g ²			
Mutual conductance (mA/V) 1.5 B				5 g ³ , f _{ct} Note C			
Anode impedance (approx.) (mΩ) 0.1 B				6 p			
Anode current (mA) 7.4 B				7 +f			
Screen current (mA) 1.4 B							
Max. cathode current (mA) 13.0 A							
<u>NOTES</u>				<u>DIMENSIONS (Inches)</u>			
A. Absolute maximum or minimum values				See B.S.448/B7G/2.1 size ref. No. 2			
B. Measured at V _a = 90, V _{g2} = 67.5, V _{g1} = -7				Dimension		Min.	Max.
C. Pin 1 is -f for V _f = 2.8V. Pin 5 is -f for V _f = 1.4V when Pins 1 and 7 are +f				seated height		-	17/8
				diameter		5/8	3/4
				overall length		-	2 5/32
				<u>MOUNTING POSITION</u> ANY			

TESTS

Additional to those specified in the attached MIL-E-1/326 specification.

Ref.	Test	Conditions	Min.	Max.
a.	L.F. microphony	V_{g1} -9. See Note 5.	-	60mV.P/P

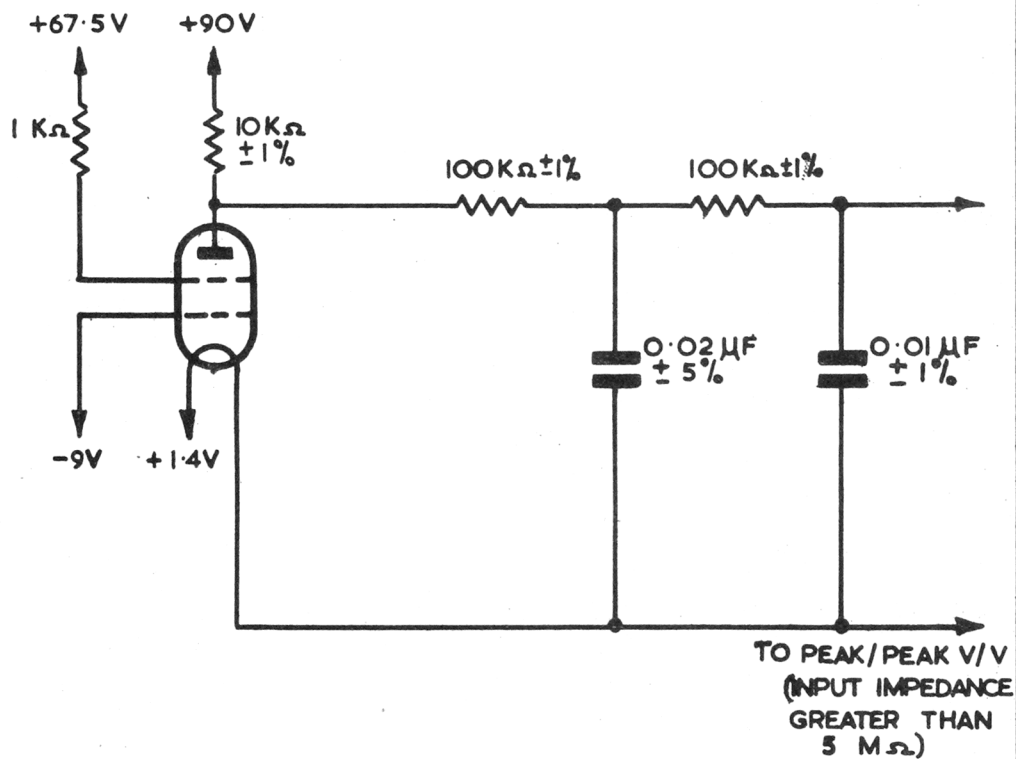
NOTES

General Note Test code "b" shall apply.

5. The valve is to be tested for freedom from low frequency microphony when operating in the circuit shown on page C and mounted on a vibrating table.

The vibrating table will be fed from the output of a full wave bridge rectifier. The rectifier shall be fed with a fixed frequency of 50 c/s, driving the table at 0.5g peak acceleration, and a frequency variable from 50 c/s to 180 c/s, also driving the table at 0.5g peak acceleration over this range, the oscillators being separately calibrated. The variable frequency oscillator shall sweep at a rate of 5 c.p.s./sec. $\pm 10\%$.

Each valve shall be swept up and down in frequency, and the largest peak to peak voltage in each case noted. The lowest of these two values will be the accepted one.

LOW FREQUENCY MICROPHONY TEST.

CV484

Generic Types:
Test Code:
(General Note)

JAN-1S4, 3S4
a b

Ratings:	Test Code	Ef Vdc	Eb Vdc	Ecl Vdc	Ec2 Vdc	Ik mAdc	Alt ft
Absolute Maximum:	a	1.4 or 1.5	100	—	75	11	10,000
	b	1.4 or 2.8	100	—	75	13	Note 1, 10,000
Test Cond.:	a,b	1.4	90	-7	67.5	—	—

a,b *Height: 2-1/8 in. max. *Diameter: 3/4 in. max. **Envelope: T-51/2 (6-2)

a,b **Base: Miniature Button 7-Pin, E7-1

a,b **Pin No.: 1 2 3 4 5 6 7 **Cathode: Coated Filament
a Element: -f p g1 g2 -f p f
b Element: -f p g1 g2 g3 p f
fot
(-para) (-para)

Ref.	Test	Test Code	Conditions	Min.	Max.
3.1	Qualification Approval:	a,b	Required for JAN Marking		
4.9.18.1.1	Carton Drop:	a,b	(d) Package Group 1; Carton Size B		
4.9.19.1	*Vibration:	a,b	Rp=2000	Ept: —	300 mVac
4.10.8	*Filament Current:	a,b		If: 88	112 mAdc
4.10.6.1	† Grid Current:	a,b		Ic1: 0	-1.0 uAdc
4.10.4.1	Plate Current:	a,b		Ib: 5.1	9.7 mAdc
4.10.4.3	*Screen Grid Current:	a,b		Ic2: 0.85	2.1 mAdc
4.10.9	*Transconductance:	a,b		Sm: 1300	1850 umhos
4.10.16.1	*Power Output (1):	a,b	Esig=5.0Vac;Rp=8000	Po: 210	— mW
4.10.16.1	† Power Output (2):	a	Ef=1.1Vdc;Esig=5.0Vac Rp=8000	Po: 140	— mW
4.10.16.1	† Power Output (2):	b	Ef=1.1Vdc;Esig=5.0Vac; Rp=8000;Note 2	Po: 55	— mW
4.10.3.3	AF Noise & Micro- phonics:	a,b	Note 3	EB: —	18 mW
4.11	Life Test:	a,b	Group A;Ef=1.4Vac or Vdc with equivalent Ecl	t: 500	— hrs
4.11.4	Life Test End Point:	a,b	Power Output (1) or Transconductance	Po: 135 Sm: 1020	— mW — umhos

CUSTODIANS:
Army-Signal Corps
Navy-Bureau of Ships
Air Force

SPECIFICATION SHEET

MIL-E-1/326

POWER AMPLIFIER PENTODE, RECEIVING

1S4 (3S4)

SHEET 1 of 2

Other interest: Army - CMOT Navy - AMCMdOrS

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APPROVED 14 AUG 1953 REVISED

CV484

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Generic Types:
Test Code:
(General Note)

JAN-134, 3S4
a b

General Note: It will be noted that immediately below each of the type numbers is a letter of the alphabet. It will also be noted that adjacent to requirements, i.e. ratings, test conditions, etc., that a letter or a number of letters appear. This is done so that it is possible to identify immediately those tests that are applicable to a given type or to several types.

Note 1: Applications using this tube type with only half the filament energized are not recommended.

Note 2: Single filament operation with pin 1 open. Repeat with pin 7 open.

Note 3: Ebb=Ecc2=135Vdc;Eel=0;Rg1=3.3Meg;Rp=0.27Meg;Rg2=2Meg (by passed with 0.5 uf capacitor to -f). Remove tube and adjust gain of amplifier for 50mw output with Esig=3.00Vac.

Note 4: Reference specification shall be of the issue in effect on the date of invitation for bid.

APPROVED 14 AUG 1953 REVISED

CUSTODIANS: Army-Signal Corps Navy-Bureau of Ships Air Force	SPECIFICATION SHEET		MIL-E-1/326
	POWER AMPLIFIER PENTODES, RECEIVING		
PROCUREMENT SPECIFICATION MIL-E-1	1S4 (3S4)		SHEET 2 OF 2

Other interest: Army - CNDT ° Navy - ANCM10rS