Standard Telephones and Cables Limited
BRIMAR VALVE WORKS, FOOTSCRAY, SIDCUP, KENT, ENGLAND

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R. E. T. M. A.
REGISTRATION DATA

TYPE 6870

DATE ISSUED 6. 11. 1956.

TYPE 6870
V.H.F. POWER PENTODE

This tube is an indirectly heated fully screened V.H.F. power pentode for operation up to 150 mc. It is intended for use as a class C amplifier or as a frequency multiplier. It may also be used as a video amplifier where the supply voltage is low and a large output voltage is required with a low value plate resistor. The tube features a centre-tapped heater for both AC and AC/DC applications.

The 6870 is designed for trustworthy operation under conditions of shock and vibration usually found in aircraft and mobile equipment.

MECHANICAL DATA.

Coated unipotential cathode.
Outline drawing..... 6-3 Bulb.....T-6½
Base..... E9-1 Miniature Button 9-pin
Maximum diameter.....⅞"
Maximum overall length.....2.5/8"
Maximum seated height.....2.3/8"
Pin Connections.....Basing JETEC 9BF

Pin 1 - Cathode.	Pin 6 - Heater centre tap.
Pin 2 - Grid No.1.	Pin 7 - Plate.
Pin 3 - Grid No.3, internal shield.	Pin 8 - Grid No.2.
Pin 4 - Heater.	Pin 9 - Grid No.3, internal shield.
Pin 5 - Heater.	

Mounting position.....Any

Maximum shock (intermittent service).....550"g"
Maximum vibration (continuous service).....2½ "g"
Minimum mechanical resonance.....100c/s

ELECTRICAL DATA.

Direct Inter-electrode Capacitances - without external shield

Grid to plate:(g1 to p) max.....0.025µµF
Input: g1 to (h+k+g2+g3 and I.S.).....8.5 µµF
Output:p to (h+k+g2+g3 and I.S.).....7.0 µµF

from JETEC release #1809, Dec. 17, 1956

Ratings Design Centre Values

Heater voltage (A.C. or D.C.)	12.6/6.3volts
Maximum heater-cathode voltage	±90volts
Maximum plate voltage	300DCvolts
Maximum grid No.2 voltage	250DCvolts
Maximum plate supply voltage (Ib = 0 mA)	500DCvolts
Maximum grid No.2 supply voltage (Ig2 = 0)	500DCvolts
Maximum plate dissipation	6.3watts
Maximum grid No.2 dissipation	2.0watts
Maximum grid No.1 current	3.0mA
Maximum cathode current	50 mA
Maximum grid No.1 circuit resistance	
Fixed bias	0.1meg
Self bias	0.5meg
Maximum bulb temperature	190°C

Typical Operating Conditions and Characteristics, class A1 Amplifier.

Heater voltage (A.C. or D.C.)	6.3/12.6	6.3/12.6	volts
Heater current	0.6/0.3	0.6/0.3	amps
Plate voltage	250	180	DCvolts
Grid No.3 voltage - pins 3 and 9 connected to pin 1 at socket.			
Grid No.2 voltage	250	180	DCvolts
Cathode bias resistor	120	56	ohms
Plate resistance (approximately)	230	170	k-ohms
Transconductance	8,500	9000	μ-mhos
Plate current	25	25	mA
Grid No.2 current	3.5	3.5	mA
Grid No.1 voltage (approximately) for Ib = 100μA	-13.5	-9	volts
Amplification factor (g2-g1)	35	35	

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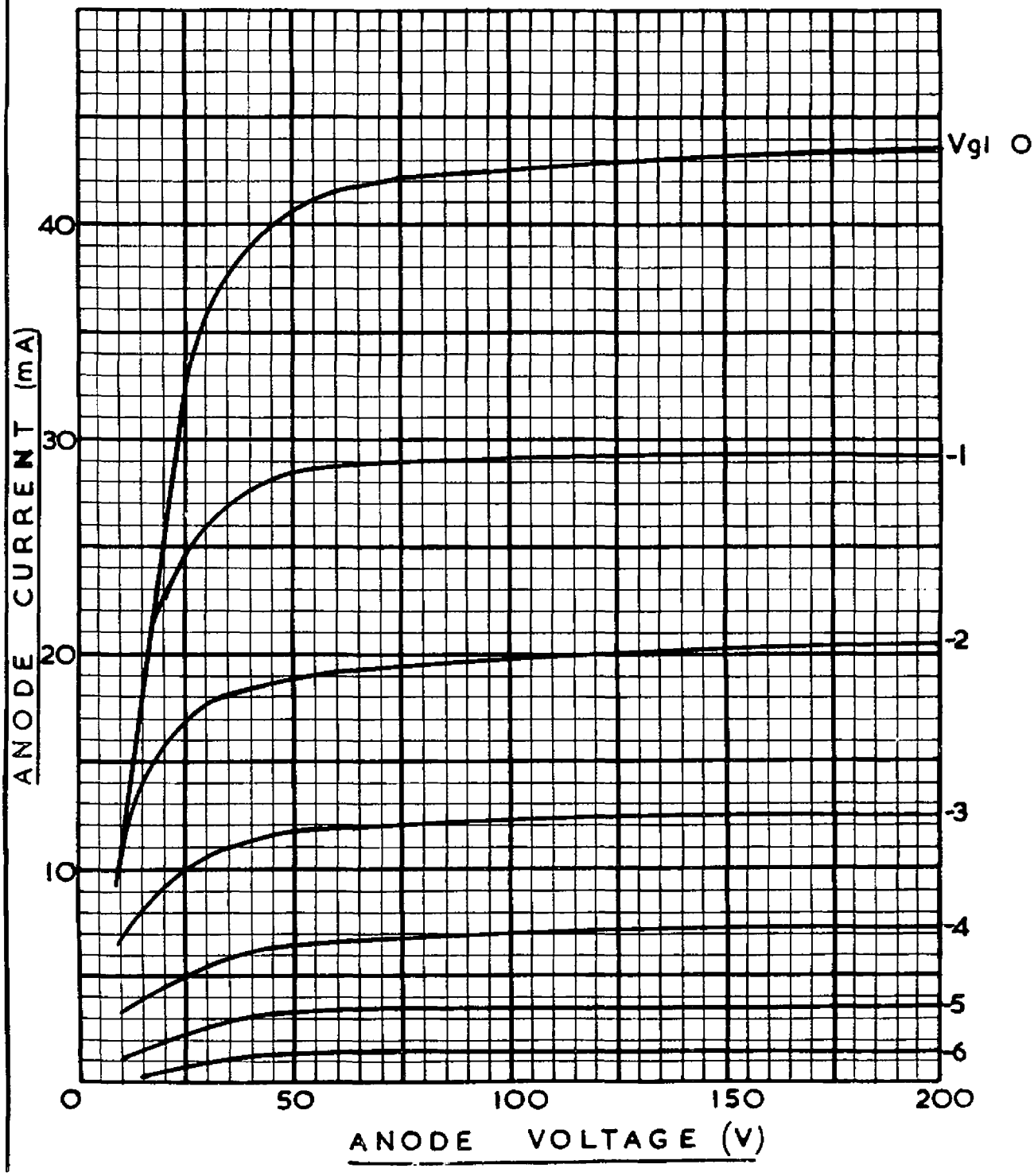
Vg2 = 180V ; Vg3=0



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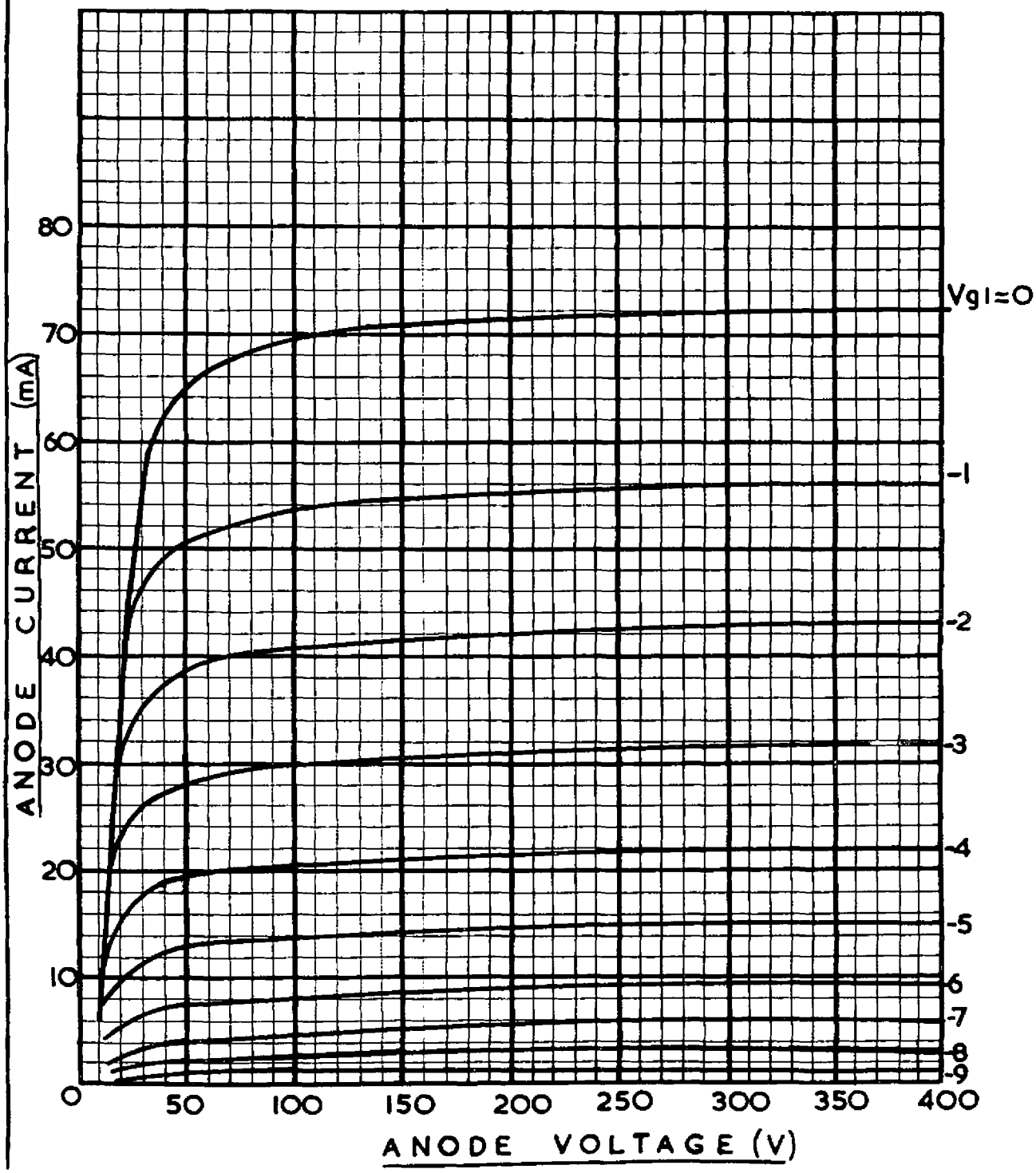
Vg2 = 250 V Vg3 = 0