

## SPECIAL VALVES

### Radiation Cooled Triode

Code: 833A (CV635)

This is a high mu triode particularly suitable for use as a r.f. power amplifier, oscillator or Class B modulator. The special construction of the valve makes it exceptionally efficient at the higher radio frequencies. It can be operated under Class C C.W. conditions with a maximum input of 1.8 kW at frequencies up to 30 Mc/s with forced-air-cooling. At reduced input ratings the valve may be operated up to 75 Mc/s.

#### CATHODE

Thoriated tungsten filament

Filament voltage	10	V
Filament current	10	A
Maximum usable emission	3	A

#### CHARACTERISTICS

Amplification factor	$\left\{ \begin{array}{l} \text{At } V_g = -10V \\ I_a = 200mA \end{array} \right\}$	35
Mutual conductance		

#### DIRECT INTERELECTRODE CAPACITANCES

Grid to anode	6.3	pF
Grid to filament	12.3	pF
Anode to filament	8.5	pF

#### MECHANICAL DATA

Dimensions	As shown in outline drawing		
Mounting position	Vertical		
Net weight	1.5 lb	545	g

#### COOLING

The maximum temperature of the anode and grid seals must not exceed 145°C.

When forced-air-cooling is required, an air flow of 40ft<sup>3</sup>/min (1.13m<sup>3</sup>/min) should be directed through a 2-inch (50.8mm) nozzle on to the bulb between the anode and grid seals.

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3C/402E—1

## Standard Telephones and Cables Limited

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C O M P O N E N T S G R O U P

## Code: 833A (CV635)

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**MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS****AUDIO FREQUENCY****Class B. A.F. Power Amplifier or Modulator**

(For balanced two-valve operation)

**Maximum Ratings**

	Natural Cooling	Forced Cooling	
Maximum direct anode voltage	3	4	kV
Maximum direct anode current	500	500	mA
Maximum anode input power	1 125	1 600	W
Maximum anode dissipation	300	400	W

**Typical Operating Conditions**

Direct anode voltage	3	4	kV
Direct anode current, zero signal	2 × 50	2 × 50	mA
Direct anode current, maximum signal	2 × 375	2 × 400	mA
Direct grid voltage	-70	-100	V
A.F. grid-to-grid r.m.s. voltage	280	340	V
Effective load resistance (a-a)	9.5	12	k Ω
Drive power, maximum signal, approx.	20	29	W
Output power	1.65	2.4	kW

**RADIO FREQUENCY****Class C. R.F. Power Amplifier or Oscillator. Unmodulated****Maximum Ratings**

	Natural Cooling	Forced Cooling	
Maximum direct anode voltage	3	4	kV
Maximum direct anode current	500	500	mA
Maximum direct grid voltage	-500	-500	V
Maximum grid resistor	15	15	k Ω
Maximum direct grid current, approx.	100	100	mA
Maximum grid dissipation	20	20	W
Maximum anode input power	1.25	1.8	kW
Maximum anode dissipation	300	400	W

**Typical Operating Conditions**

Direct anode voltage	3	4	kV
Direct anode current	415	450	mA
Direct grid voltage	-200	-200	V
Grid resistor	3.6	2.65	k Ω
Direct grid current, approx*	55	75	mA
Peak r.f. grid voltage	360	375	V
Input (drive) power, approx.	20	26	W
Direct anode dissipation	245	360	W
Output power	1	1.44	kW
Power into load at 85% transfer	0.85	1.22	kW

\*Subject to wide variations dependent upon impedance of the load circuit.

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**Class C. R.F. Power Amplifier or Oscillator. Anode Modulated**

(Carrier conditions per valve for use with 100% modulation)

**Maximum Ratings**

	Natural Cooling	Forced Cooling	
Maximum direct anode voltage	2.5	3	kV
Maximum direct anode current	400	450	mA
Maximum direct grid voltage	-500	-500	V
Maximum grid resistor	15	15	k $\Omega$
Maximum grid dissipation	20	20	W
Maximum direct grid current, approx.	100	100	mA
Maximum anode input power	835	1 250	W
Maximum anode dissipation	200	270	W

**Typical Operating Conditions**

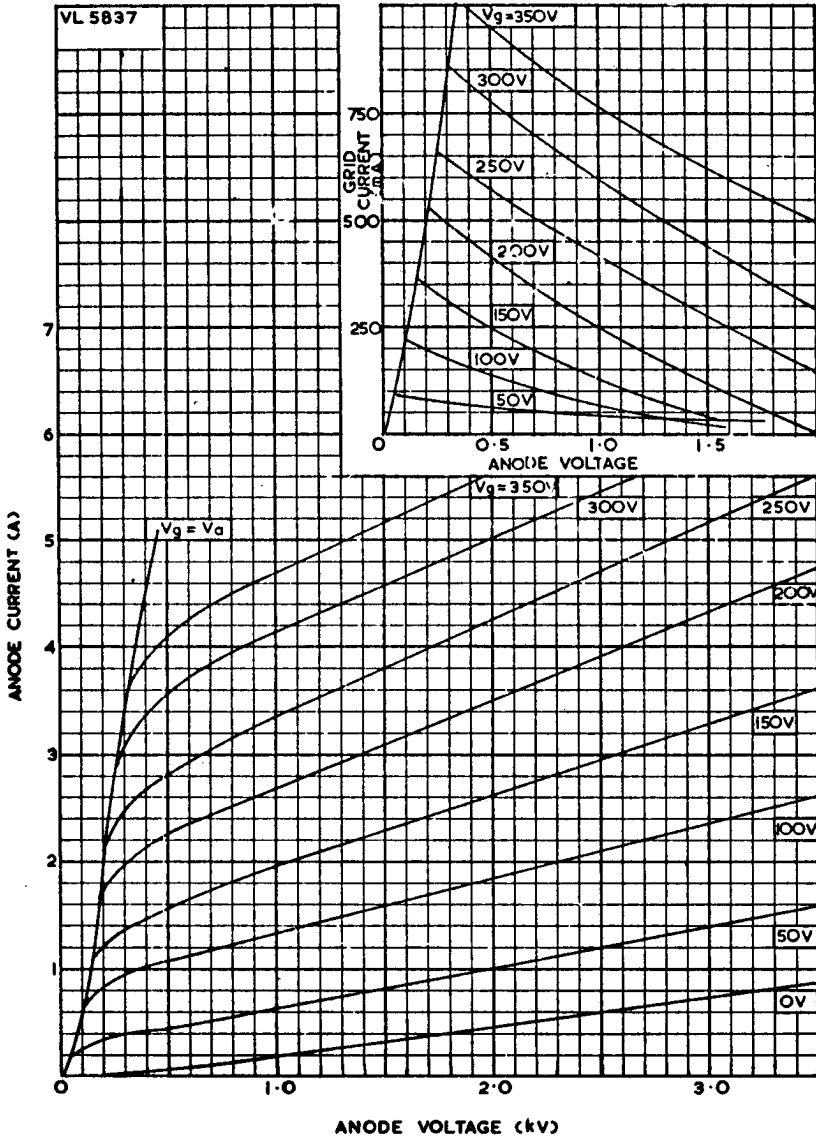
Direct anode voltage	2.5	3	kV
Direct anode current	335	415	mA
Direct grid voltage	-300	-300	V
Grid resistor	4	3.6	k $\Omega$
Peak r.f. grid voltage	460	490	V
Direct grid current*	75	85	mA
Grid drive power, approx.	30	37	W
Anode dissipation	200	245	W
Output power	635	1 000	W
Power into load†	540	850	W

\*Subject to wide variations dependent upon impedance of the load circuit.

†Transfer efficiency 85%.

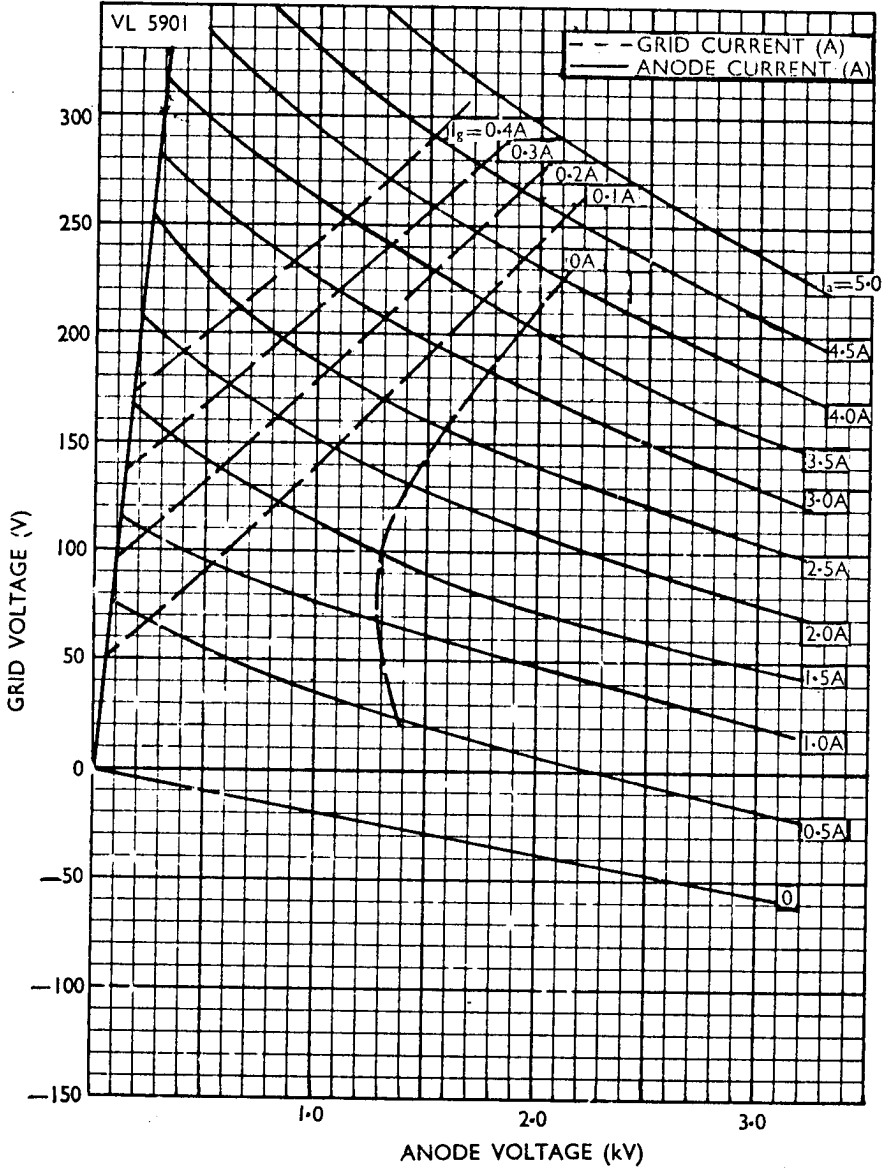
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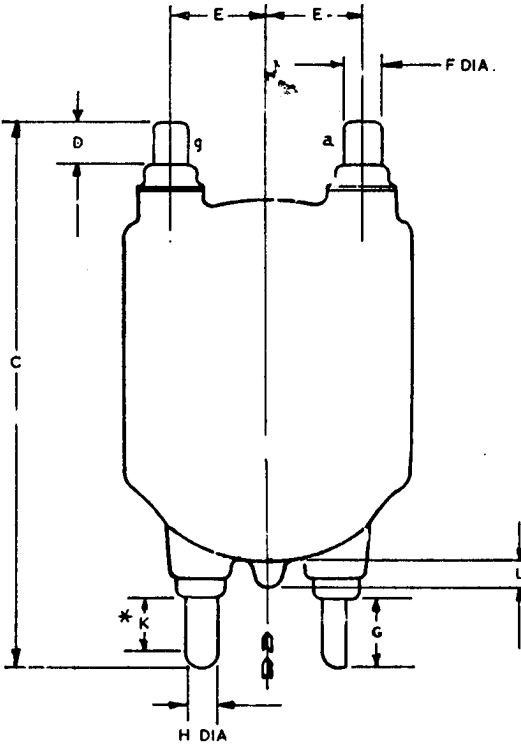
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833A Outline



DIM.	INCHES	MILLIMETRES
A	$4 \frac{19}{32}$ MAX.	116,7 MAX.
B	$0.375 \pm 0.005$	$9,53 \pm 0,13$
C	$8 \frac{5}{8} \pm \frac{3}{16}$	$219,1 \pm 4,8$
D	0.610 MIN.	15,49 MIN.
E	$1 \frac{1}{2} \pm \frac{1}{32}$	$38,1 \pm 0,8$
F	$0.567 \pm 0.005$	$14,40 \pm 0,13$
G	$1 \frac{3}{32} \pm \frac{1}{32}$	$27,8 \pm 0,8$
H	$0.437 \pm 0.005$	$11,11 \pm 0,13$
I	$2 \frac{1}{8} \pm \frac{1}{16}$	$54,0 \pm 1,6$
K	$27/32$ MIN.	21,4 MIN.
L	$\frac{1}{2}$ MAX.	12,7 MAX.

BASIC DIMENSIONS ARE INCHES

\* DENOTES:- CONTACT LENGTH

