3C24
(B1109)

R.F. POWER TRIODE

Service Types CV789, CV2736 (matched pairs)

The data should be read in conjunction with the Power Triode Preamble.

ABRIDGED DATA

Natural cooled power triode for use as an amplifier, oscillator or modulator

Anode dissipation	25	W max
Anode voltage	2.0	kV max
Frequency for full ratings	60	MHz max
Output power (class C unmodulated)	100	W

GENERAL

Electrical

Filament	thoriated tungsten	
Filament voltage	6.3	V
Filament current	3.0	A
Amplification factor	25	
Mutual conductance (V_a = 1.0kV, I_a = 25mA)	2.5	mA/V
Inter-electrode capacitances:		
grid to anode	1.5	pF
grid to filament	1.7	pF
anode to filament	0.3	pF

Mechanical

Overall length	4.375 inches (111.1mm) max
Overall diameter	1.440 inches (36.6mm) max
Net weight	1½ ounces (42g) approx
Mounting position	vertical, either way up
Base	small UX4

Cooling . . . . . natural

Heat dissipating connections of large area are necessary for anode and grid.

AUDIO FREQUENCY POWER AMPLIFIER AND MODULATOR
(Class B and Class AB)

MAXIMUM RATINGS (Absolute values)

Anode voltage	2000	V max
Anode current (maximum signal)	75	mA max
Anode dissipation	25	W max
Grid dissipation	7.0	W max

TYPICAL OPERATING CONDITIONS
(Class AB_2 – two valves)

Anode voltage	750	1000	1250	V
Grid voltage (see note 1)	−20	−30	−42	V
Anode current (zero signal)	43	32	24	mA
Anode current (maximum signal)	127	127	130	mA
Effective load (anode to anode)	12	17	21.4	kΩ
Peak a.f. grid voltage (per valve)	110	120	135	V
Peak driving power (maximum signal)	5.5	6.0	6.8	W
Nominal driving power (maximum signal)	2.8	3.0	3.4	W
Output power (maximum signal)	60	85	112	W

ANODE MODULATED R.F. POWER AMPLIFIER
(Class C telephony, carrier conditions per valve for use with a maximum modulation factor of 1.0)

MAXIMUM RATINGS (Absolute values)

Anode voltage	1600	V max
Anode current	60	mA max
Anode dissipation	17	W max
Grid dissipation	7.0	W max

TYPICAL OPERATING CONDITIONS

Anode voltage	1000	1250	1600	V
Grid voltage	−120	−140	−170	V
Anode current	60	60	52	mA
Grid current (approx)	14	13	11	mA
Anode dissipation	13	15	17	W
Grid dissipation	1.6	1.5	1.2	W
Driving power	3.3	3.3	3.1	W
Peak r.f. grid voltage	235	255	280	V
Output power	47	60	68	W

R.F. POWER AMPLIFIER AND OSCILLATOR

(Class C telegraphy, key-down conditions, one valve)

MAXIMUM RATINGS (Absolute values)

Anode voltage	2000	V max
Anode current	75	mA max
Anode dissipation	25	W max
Grid dissipation	7.0	W max

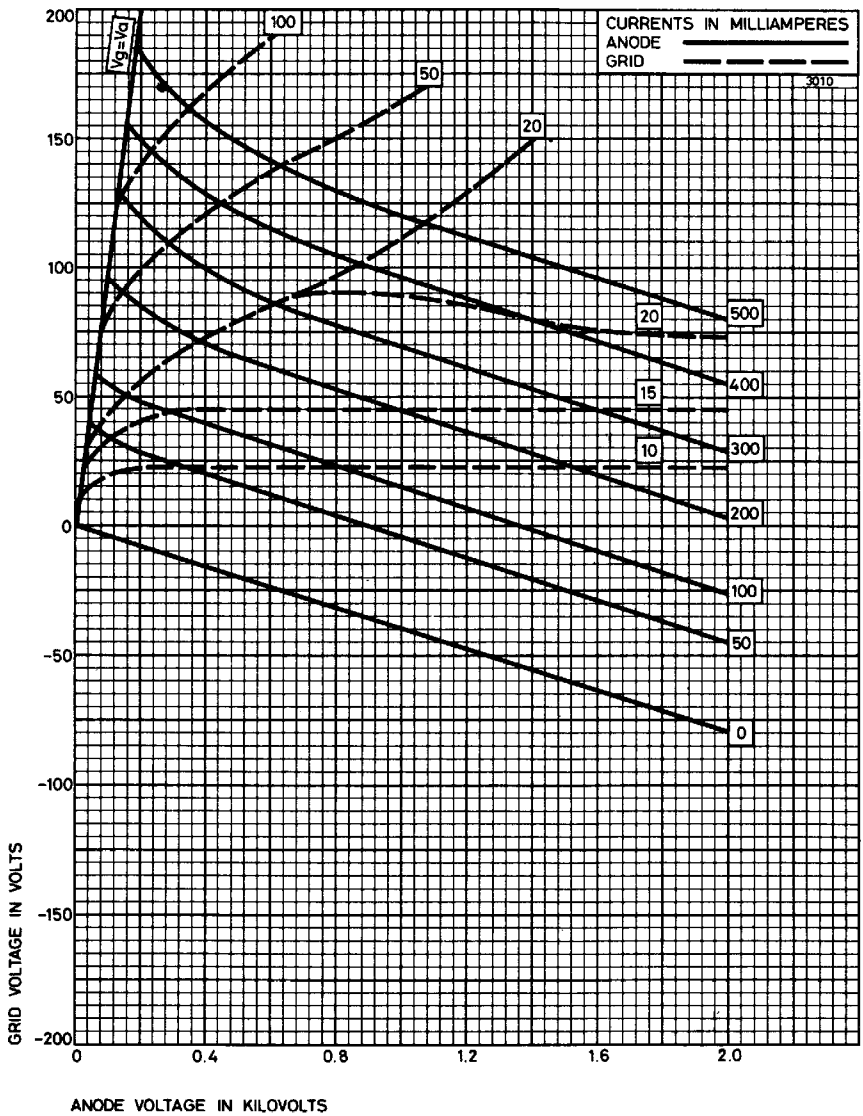
TYPICAL OPERATING CONDITIONS

Anode voltage	1000	1500	2000	V
Grid voltage	−70	−95	−130	V
Anode current	72	67	63	mA
Grid current (approx)	9.0	13	18	mA
Anode dissipation	25	25	25	W
Grid dissipation	0.9	1.3	2.1	W
Driving power	1.3	2.2	4.0	W
Peak r.f. grid voltage	170	195	245	V
Output power	47	75	100	W

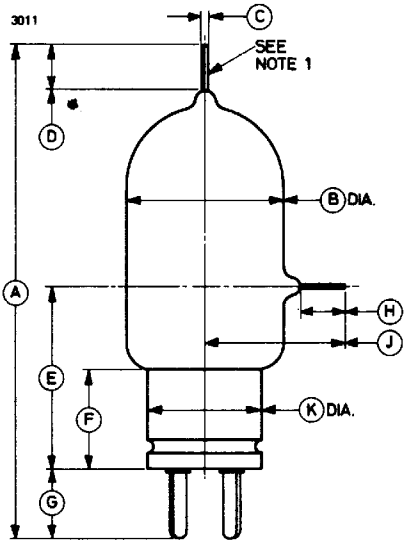
NOTES

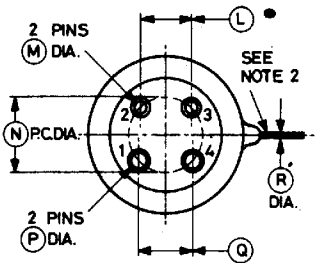
1. The grid voltage should be adjusted to give the stated zero-signal anode current.

TYPICAL CONSTANT CURRENT CHARACTERISTICS



OUTLINE (All dimensions without limits are nominal)





Pin	Element
1	Filament
2	No connection
3	No connection
4	Filament
Side lead	Grid
Top lead	Anode

Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	4.187 ± 0.187	106.3 ± 4.8	J	1.200 ± 0.100	30.48 ± 2.54
B	1.375 ± 0.065	34.93 ± 1.65	K	1.151 ± 0.015	29.24 ± 0.38
C	0.048 ± 0.003	1.219 ± 0.076	L	0.437	11.10
D	0.375 ± 0.065	9.53 ± 1.65	M	0.125 ± 0.003	3.175 ± 0.076
E	1.562 ± 0.125	39.67 ± 3.18	N	0.640	16.26
F	0.843	21.41	P	0.156 ± 0.003	3.962 ± 0.076
G	0.596 max	15.14 max	Q	0.468	11.89
H	0.375 ± 0.065	9.53 ± 1.65	R	0.048 ± 0.003	1.219 ± 0.076

Millimetre dimensions have been derived from inches.

Outline Notes

1. The centre line through the anode pin will not deviate more than 0.125 inch (3.18mm) from the centre line of the tube and base.
2. Deviation from base centre line 3° max.