

5762 (BR191B)

R.F. POWER TRIODE

Service Type CV2383, CV5289

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

ABRIDGED DATA

Forced-air cooled r.f. transmitting triode

Anode dissipation	4.0	kW max
Anode voltage	6.2	kV max
Frequency for full ratings	30	MHz max
Frequency at reduced ratings	220	MHz max
Output power (class C telegraphy)	6.0	kW



GENERAL

Electrical

Filament	thoriated tungsten
Filament voltage (see note 1):	
at frequencies up to 70MHz	12.6 V
at frequencies above 70MHz	11.8 V
Filament current	29 A
Surge filament current (peak) (see note 2)	175 A max
Filament cold resistance	52 mΩ
Peak usable cathode current	10 A
Amplification factor	29
Inter-electrode capacitances:	
grid to anode	18.5 pF
grid to filament	19 pF
anode to filament	0.5 pF

Mechanical

Overall length (excluding flexible leads)	180mm (7.09 inches) max
Overall diameter	119mm (4.69 inches) max
Net weight	7 pounds (3.2kg) approx
Mounting position	vertical, either way up

COOLING

Anode

The air cooling requirements are shown on page 11. The required air flow should be delivered through the radiator immediately before and during the application of any voltages. Filament power, anode power and air flow may be removed simultaneously.

The inlet air temperature must not exceed 45°C and the radiator temperature, measured on the core at the end opposite to the incoming air, must not exceed 180°C.

Filament and Grid Seals

The temperature of the filament and grid seals must not exceed 180°C. A flow of air of 10ft³/min (0.28m³/min) directed into the filament header via a 1-inch (25mm approx) diameter nozzle before and during the application of any voltages is usually adequate for limiting the temperature of these seals.

Anode Seal and Bulb

The anode seal and bulb temperatures must not exceed 180°C.

AUDIO FREQUENCY POWER AMPLIFIER OR MODULATOR (Class B)

MAXIMUM RATINGS (Absolute values)

Anode voltage	6.2	kV max
Anode current	1.5	A max
Anode input power	8.7	kW max
Anode dissipation	4.0	kW max

TYPICAL OPERATING CONDITIONS (Class B, 2 valves)

Anode voltage	4.7	kV
Grid voltage	-200	V
Peak a.f. input voltage (grid to grid)	900	V
Maximum-signal anode current	2 x 1.4	A
Zero-signal anode current	2 x 0.15	A
Effective load (anode to anode)	3640	Ω
Drive power	195	W
Output power	8.8	kW

R.F. POWER AMPLIFIER
CLASS B TELEVISION SERVICE U.S.A. SYSTEM
(Synchronising level conditions unless otherwise stated)

MAXIMUM RATINGS (Absolute values)

	54 to 216MHz	
Anode voltage	4.5	kV max
Anode current	2.0	A max
Grid current (pedestal level)	0.325	A max
Anode input power	9.0	kW max
Anode dissipation	4.0	kW max



TYPICAL OPERATION IN GROUNDED-GRID CIRCUIT

Bandwidth	10	8.5	MHz
Anode voltage	3.0	3.2	kV
Grid voltage	-105	-110	V
Peak r.f. grid drive voltage:			
synchronising level	380	435	V
pedestal level	290	310	V
Anode current:			
synchronising level	1.8	1.8	A
pedestal level	1.36	1.35	A
Grid current:			
synchronising level	0.265	0.4	A
pedestal level	0.115	0.130	A
Driving power (see note 3):			
synchronising level	625	770	W
Output power:			
synchronising level	3.150	4.0	kW
pedestal level	1.8	2.3	kW

**GRID MODULATED R.F. POWER AMPLIFIER
CLASS C TELEVISION SERVICE – U.S.A. SYSTEM
(Synchronising level conditions unless otherwise stated)**

MAXIMUM RATINGS (Absolute values)

	54 to 216MHz	
Anode voltage	3.7	kV max
Grid voltage (white level)	–800	V max
Anode current	1.9	A max
Grid current (pedestal level)	0.225	A max
Anode input power	6.5	kW max
Anode dissipation	4.0	kW max

TYPICAL OPERATION IN GROUNDED-GRID CIRCUIT

Bandwidth	8.5	MHz
Anode voltage	3.2	kV
Grid voltage:		
synchronising level	–110	V
pedestal level	–220	V
white level	–520	V
Peak r.f. grid drive voltage	435	V
Anode current:		
synchronising level	1.8	A
pedestal level	1.25	A
Grid current (approx):		
synchronising level	0.40	A
pedestal level	0.13	A
Driving power (see note 3):		
synchronising level	770	W
Output power (approx):		
synchronising level	4.0	kW
pedestal level	2.3	kW

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)

	up to 30MHz	at 110MHz	at 220MHz	
Anode voltage	5.0	4.2	3.6	kV max
Grid voltage (negative value)	1.0	1.0	0.6	kV max
Anode current	1.0	1.0	1.0	A max
Grid current	0.3	0.3	0.25	A max
Anode input power	5.0	4.2	3.6	kW max
Anode dissipation	2.7	2.7	2.7	kW max



TYPICAL OPERATION IN GROUNDED-FILAMENT CIRCUIT

	up to 30MHz	at 110MHz	
Anode voltage	4.7	4.0	kV
Grid voltage	-400	-350	V
from grid resistor	1425	1460	Ω
Peak r.f. grid drive voltage (see note 4)	675	600	V
Anode current	0.96	0.93	A
Grid current (approx)	0.28	0.24	A
Driving power (approx)	170	130	W
Output power (approx)	3.7	2.8	kW

TYPICAL OPERATION IN GROUNDED-GRID CIRCUIT

	up to 30MHz	at 110MHz	
Anode voltage	4.7	4.0	kV
Grid voltage	-400	-350	V
from grid resistor	1425	1460	Ω
Peak r.f. grid drive voltage	675	600	V
Anode current	0.96	0.93	A
Grid current (approx)	0.28	0.24	A
Driving power (approx)	720	600	W
Output power (approx)	4.2	3.2	kW

R.F. POWER AMPLIFIER OR OSCILLATOR

(Class C telegraphy — see note 5 — and class C f.m. telephony)

MAXIMUM RATINGS (Absolute values)

	up to 30MHz	at 110MHz	at 220MHz	
Anode voltage	6.2	5.2	4.4	kV max
Grid voltage	-1.0	-1.0	-0.6	kV max
Anode current	1.4	1.4	1.4	A max
Grid current	0.3	0.3	0.25	A max
Anode input power	8.7	7.3	6.2	kW max
Anode dissipation	4.0	4.0	4.0	kW max

TYPICAL OPERATION IN GROUNDED-FILAMENT CIRCUIT

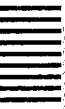
	up to 30MHz	at 110MHz	
Anode voltage	6.0	5.0	kV
Grid voltage	-550	-525	V
from grid resistor	1900	1725	Ω
and cathode resistor	360	340	Ω
Peak r.f. grid drive voltage	875	850	V
Anode current	1.25	1.25	A
Grid current (approx)	0.29	0.29	A
Driving power (approx)	225	225	W
Output power (approx)	6.0	4.8	kW

TYPICAL OPERATION IN GROUNDED-GRID CIRCUIT

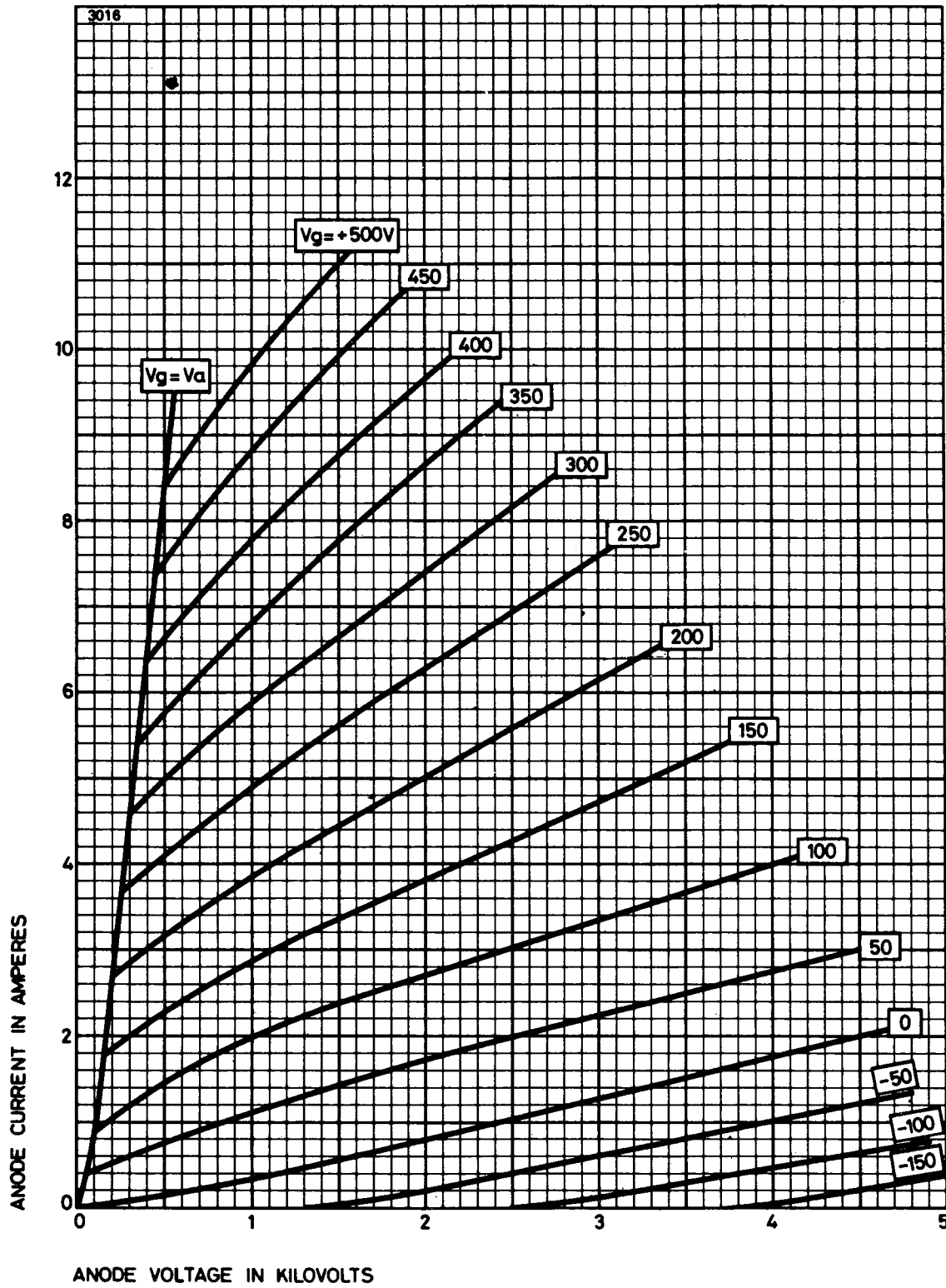
	up to 30MHz	at 110MHz	at 220MHz	
Anode voltage	6.0	5.0	4.3	kV
Grid voltage	-550	-1000	-200	V
from grid resistor	1900	4100	807	Ω
and cathode resistor	360	740	134	Ω
Peak r.f. grid drive voltage	875	1350	432	V
Anode current	1.25	1.1	1.25	A
Grid current (approx)	0.290	0.245	0.25	A
Driving power (approx)	1225	1680	542	W
Output power (approx)	7.0	5.5	4.0	kW

NOTES

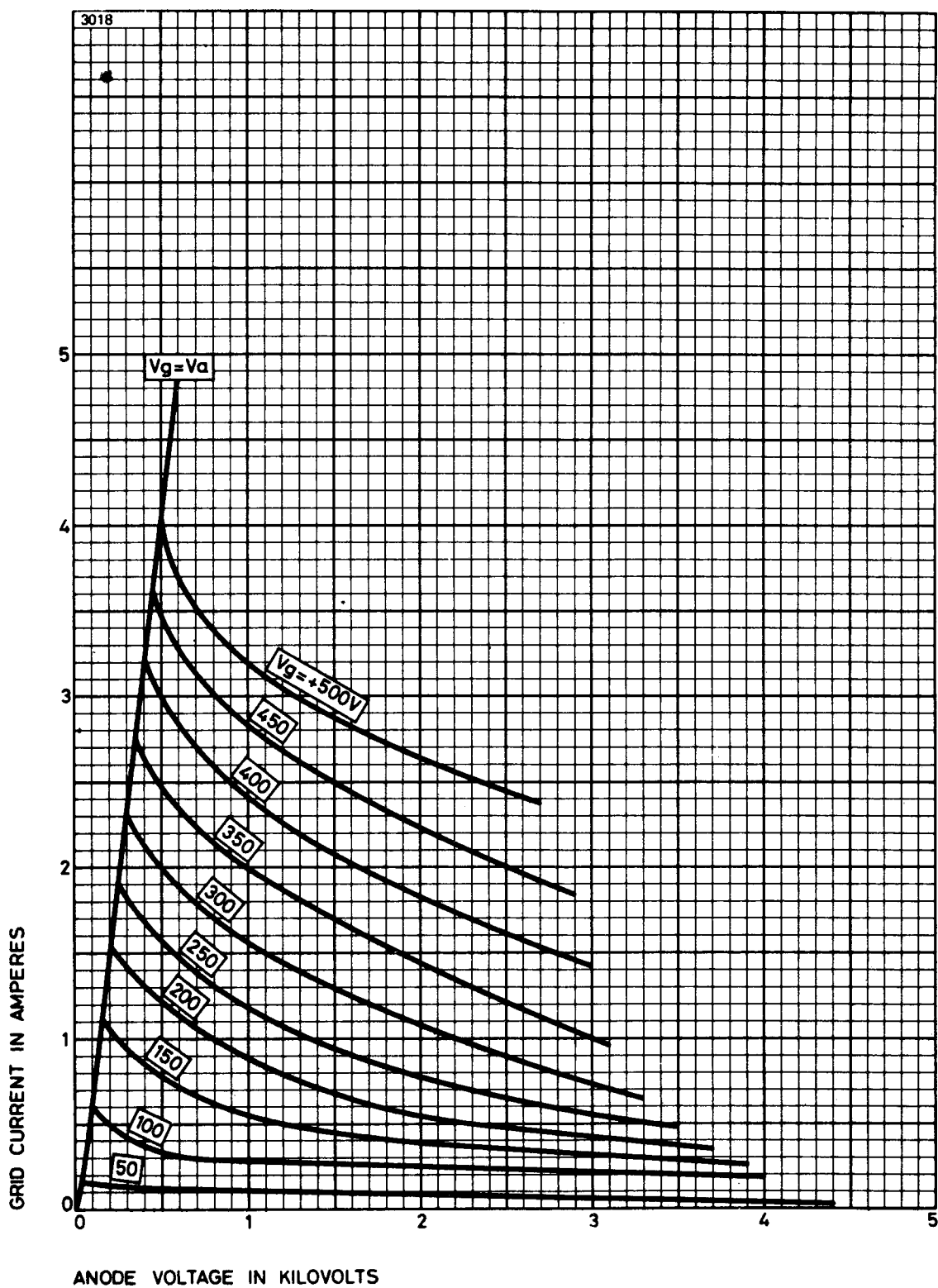
1. The valve must be operated at the stated filament voltage. Fluctuation in filament voltage must not exceed $\pm 5\%$. The centre tap lead may be used for the anode current return but must not be used for the filament current supply.
2. The filament current must not exceed 175A, even momentarily, at any time.
3. Computed value to supply grid losses and feed-through power. Additional power will be required to supply circuit losses.
4. Driver modulated approximately 30%.
5. Key-down conditions per valve without amplitude modulation. Modulation essentially negative may be used if the positive peak of the audio frequency envelope does not exceed 115% of the carrier conditions.



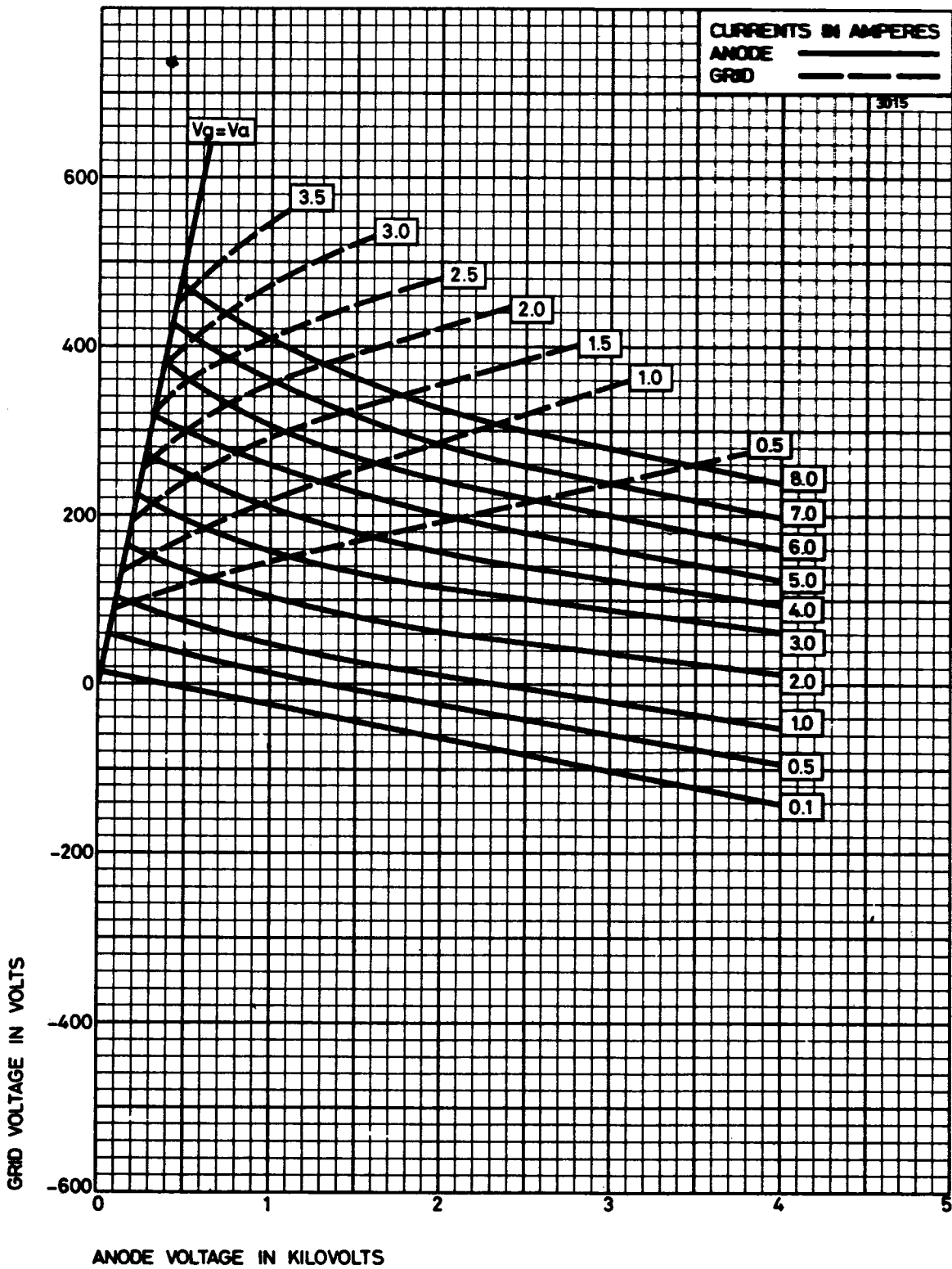
TYPICAL ANODE CHARACTERISTICS



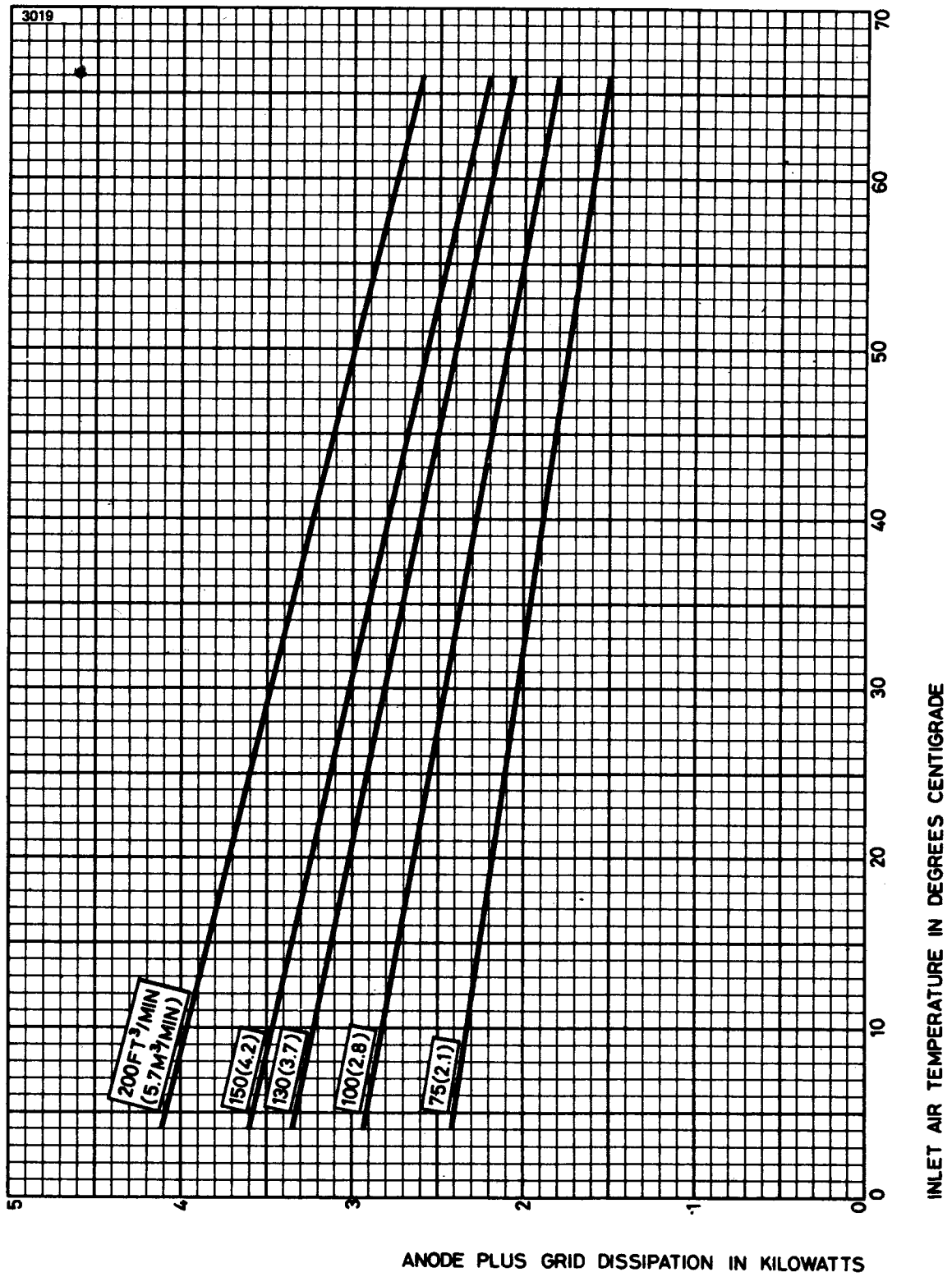
TYPICAL GRID CHARACTERISTICS



TYPICAL CONSTANT CURRENT CHARACTERISTICS

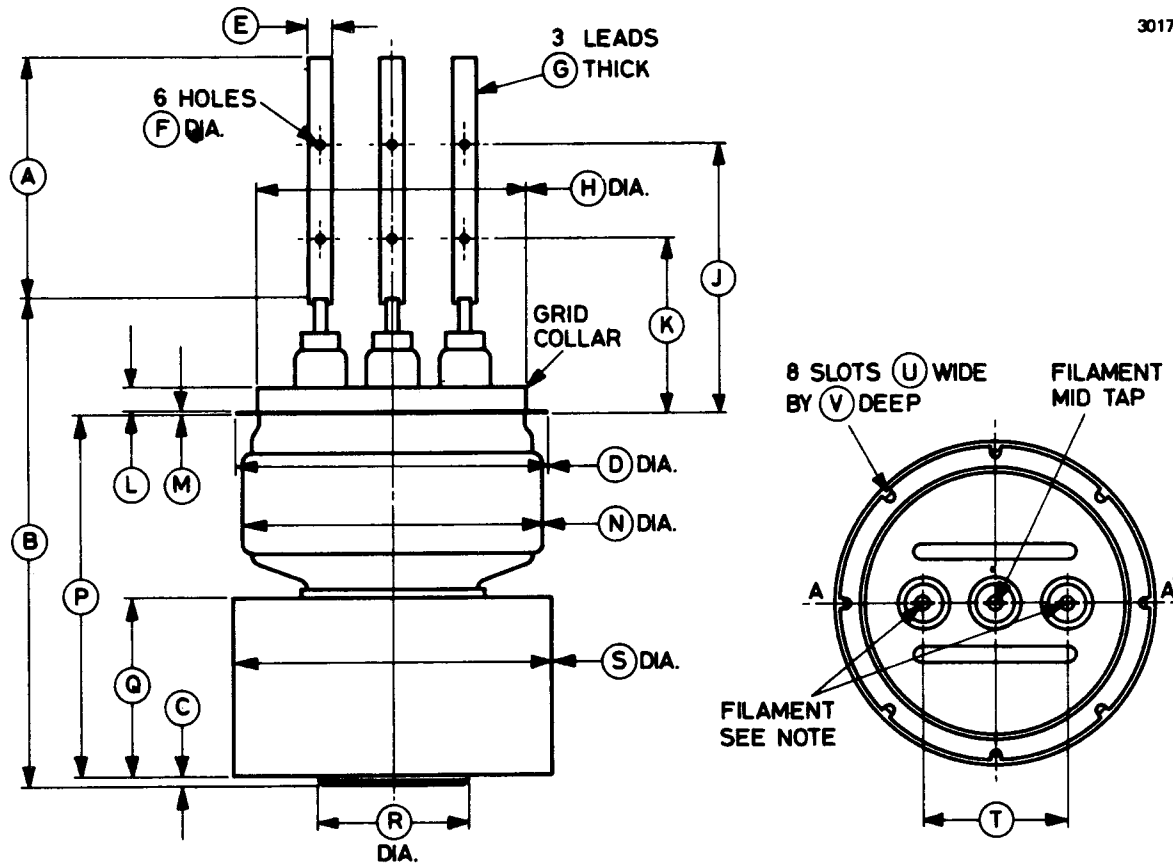


AIR COOLING REQUIREMENTS



OUTLINE

3017



Ref	Millimetres	Inches	Ref	Millimetres	Inches
A	89.0 ± 2.0	3.504 ± 0.079	L	9.5	0.375
B	180.0 max	7.087 max	M	1.5 ± 0.2	0.059 ± 0.008
C	4.75 max	0.187 max	N	116.0 max	4.567 max
D	116.0 ± 0.5	4.567 ± 0.020	P	133.5 ± 3.0	5.256 ± 0.118
E	8.0 ± 0.5	0.315 ± 0.020	Q	70.0 max	2.756 max
F	3.6 ± 0.1	0.142 ± 0.004	R	57.0 max	2.244 max
G	4 x 0.25	4 x 0.010	S	117.5 ± 1.5	4.626 ± 0.059
H	100.0 max	3.937 max	T	54.0 ± 2.5	2.126 ± 0.098
J	100.0 ± 8.0	3.937 ± 0.315	U	4.62 ± 0.10	0.182 ± 0.004
K	65.0 ± 8.0	2.559 ± 0.315	V	5.2 ± 0.2	0.205 ± 0.008

Inch dimensions have been derived from millimetres.

Note The plane of the filament leads will be parallel to plane A-A' to within 3½°.