BR1106

R.F. POWER TRIODE

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

ABRIDGED DATA

Forced-air cooled transmitting triode with grid terminal suitable for cathode drive operation.

Anode dissipation	10	kW max
Anode voltage	6.6	kV max
Frequency for full ratings	30	MHz max
Frequency at reduced ratings	220	MHz max
Output power (class C telegraphy)	15.5	kW

GENERAL

Electrical

Filament	thoriated tungsten	
Filament voltage (see note 1)	5.0	V
Filament current	175	A
Surge filament current (peak) (see note 2)	400	A max
Filament cold resistance	3.8	mΩ
Peak usable cathode current	20	A
Perveance	2.0	$mA/V^{3/2}$
Amplification factor (V_a = 6.5kV, I_a = 1.0A)	30	
Mutual conductance (V_a = 5.0kV, I_a = 1.5A)	28	mA/V
Inter-electrode capacitances:		
grid to anode	24	pF
grid to filament	44	pF
anode to filament	0.75	pF

Mechanical

Overall length	11.062 inches (281mm) max
Overall diameter	6.406 inches (162.7mm) max
Net weight	18 pounds (8.2kg) approx
Mounting position	vertical, either way up

Accessories

Filament leads	MA131

COOLING

Anode

The air cooling requirements are shown on pages 8 and 9. 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.

Filament and Grid Seals

The temperature of the filament and grid seals must not exceed 140°C. A flow of air of 20ft^3/min (0.57m^3/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.

R.F. POWER AMPLIFIER OR OSCILLATOR

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

MAXIMUM RATINGS (Absolute values)

Anode voltage (see page 3)	6.6	kV max
Anode dissipation	10	kW max
Grid dissipation	300	W max
Operating frequency		see page 3

TYPICAL OPERATING CONDITIONS (below 30MHz)

Anode voltage	6.0	kV
Grid voltage	430	V
Peak r.f. grid drive voltage	830	V
Anode current	3.72	A
Grid current (approx)	0.44	A
Anode dissipation	6.82	kW
Grid dissipation	150	W
Output power	15.5	kW
Efficiency	69.5	%

RANGE OF CHARACTERISTICS FOR EQUIPMENT DESIGN

	Min	Max	
Filament current at filament voltage 5.0V	162	185	A
Amplification factor (V_a = 6.5kV, I_a = 1.0A)	26	34	
Mutual conductance (V_a = 5.0kV, I_a = 1.5A)	24	32	mA/V
Anode current (V_a = 2.0kV, V_g = +200V)	7.9	9.1	A
Grid current (V_a = 2.0kV, V_g = +200V)	0	0.6	A
Inter-electrode capacitances:			
grid to anode	22	26.5	pF
grid to filament	41.75	45.75	pF
anode to filament	0.45	0.9	pF

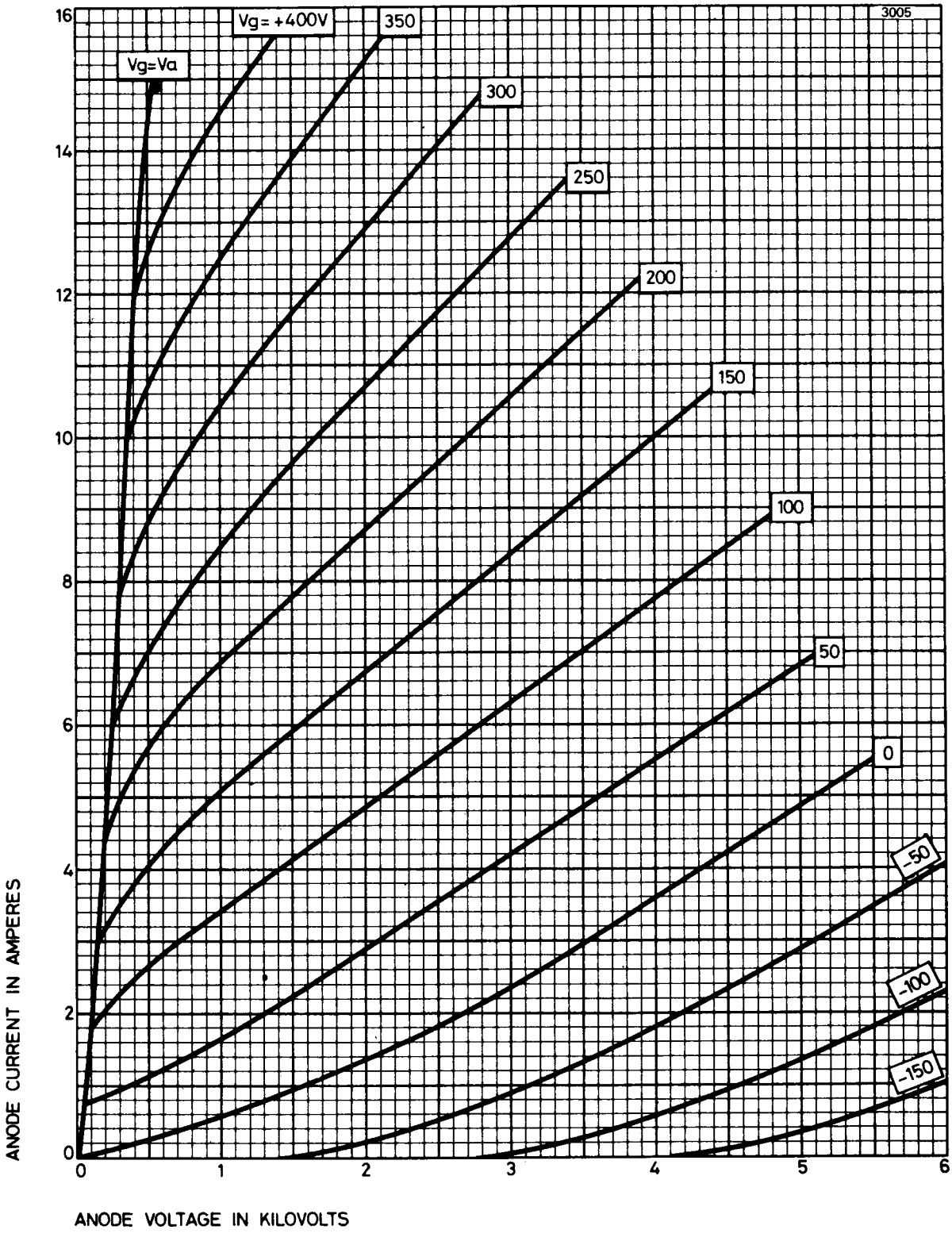
MAXIMUM ANODE VOLTAGE AGAINST FREQUENCY

Operating frequency (MHz)	Max anode voltage c.w. (kV)	Max anode voltage with anode modulation (kV)
30	6.6	5.3
220	6.0	4.8

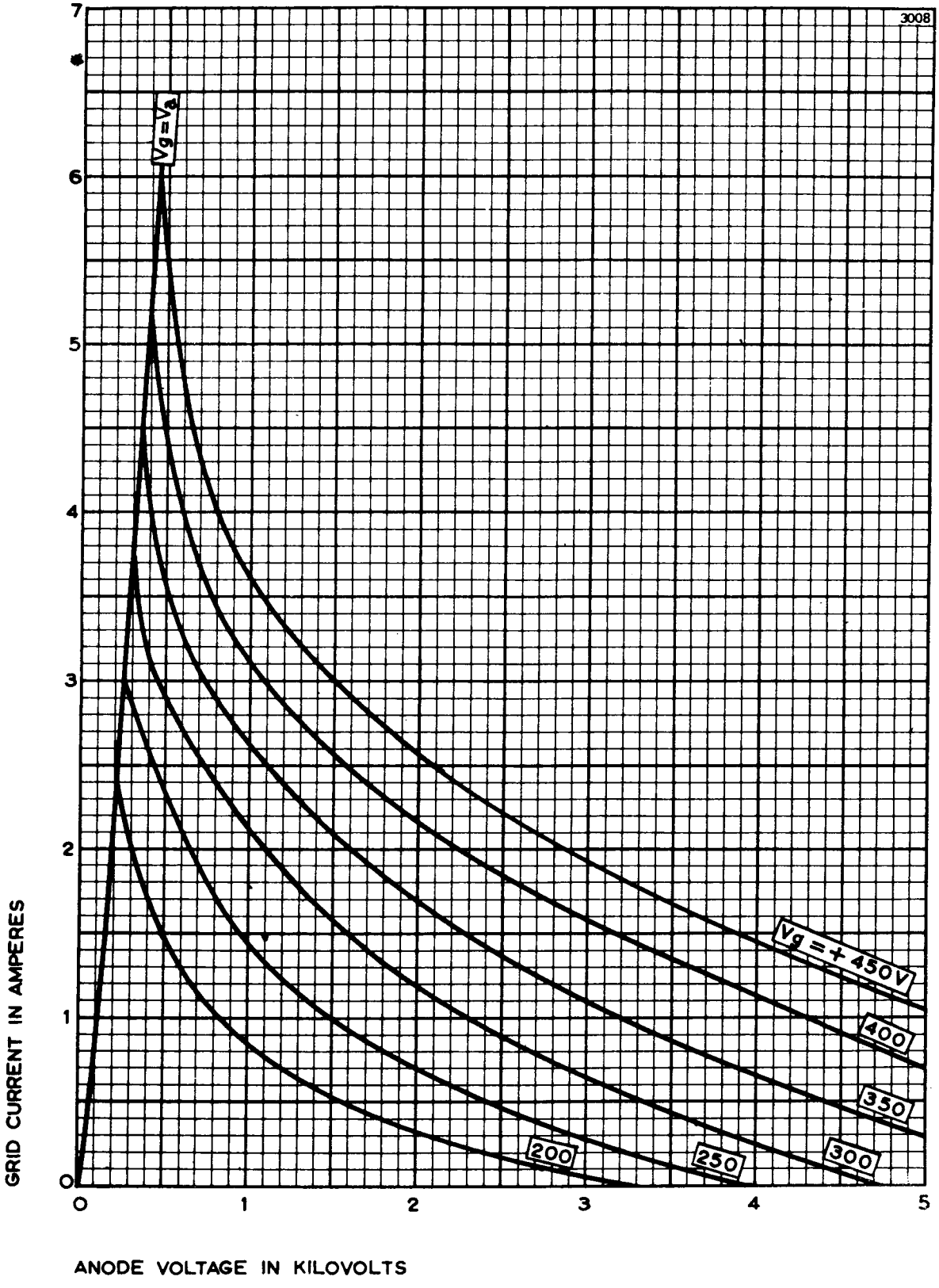
NOTES

1. The valve must be operated at the stated filament voltage. Fluctuation in filament voltage must not exceed ±5%.
2. The filament current must not exceed 400A, even momentarily, at any time.

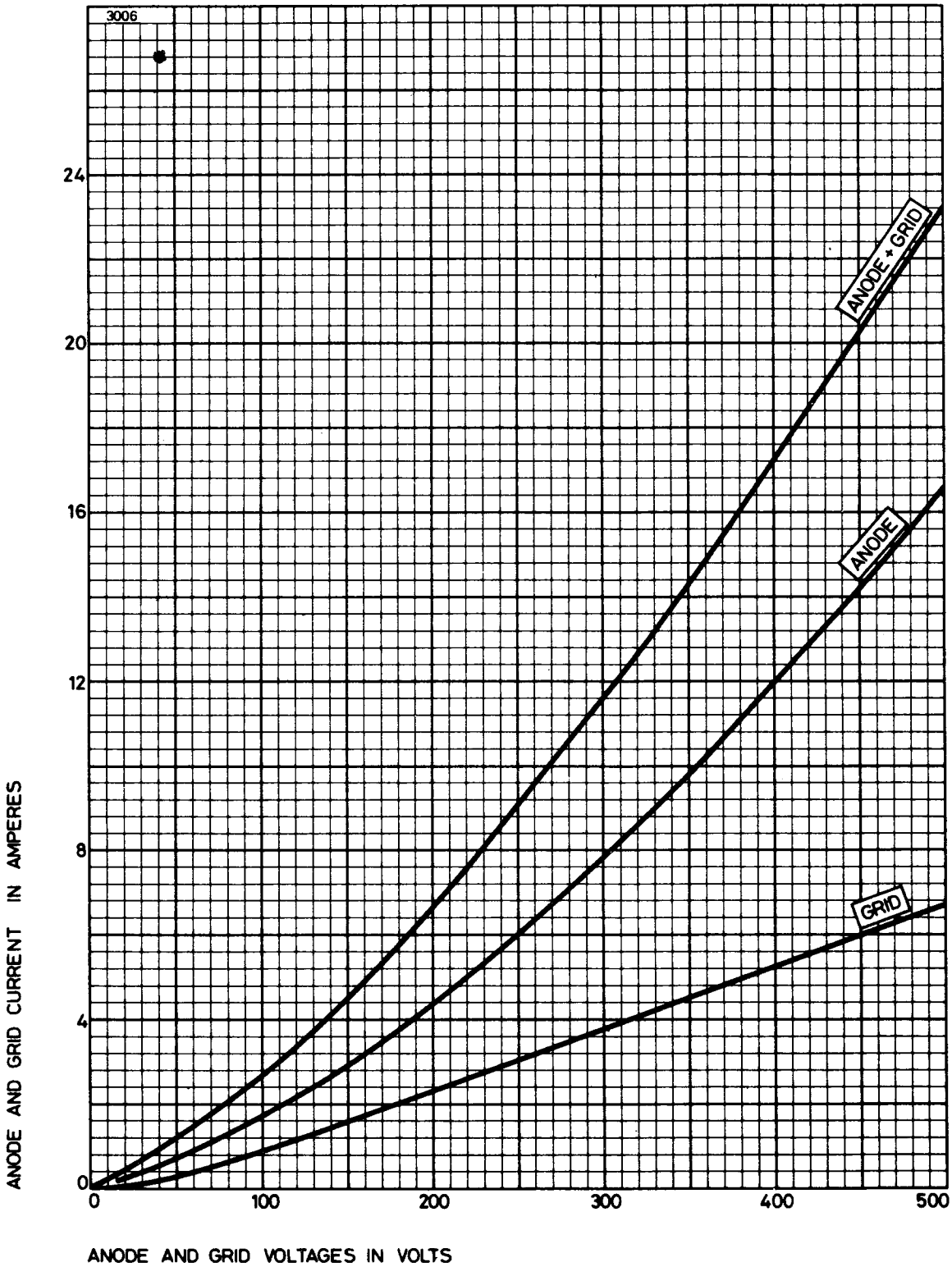
TYPICAL ANODE CHARACTERISTICS



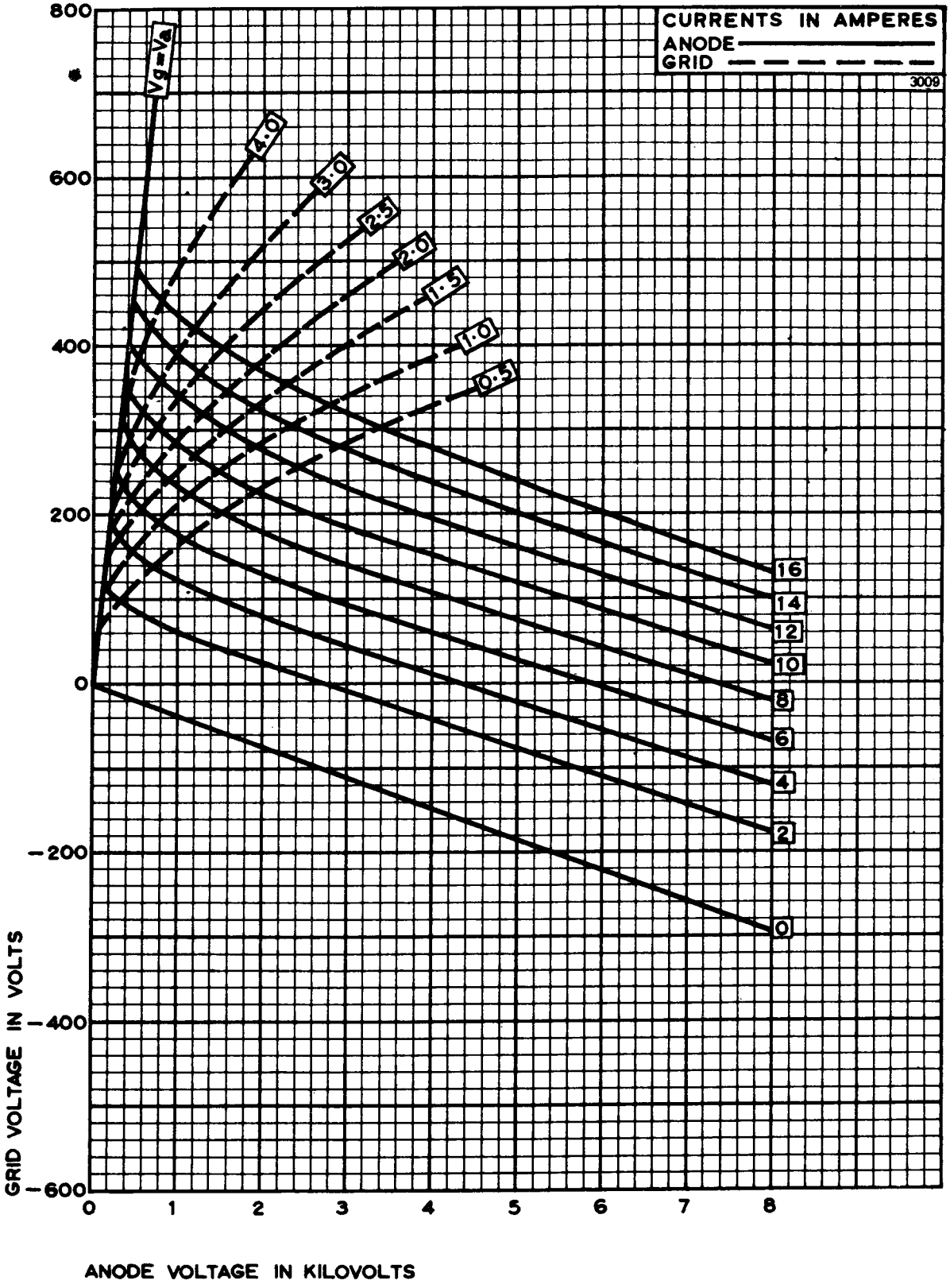
TYPICAL GRID CHARACTERISTICS



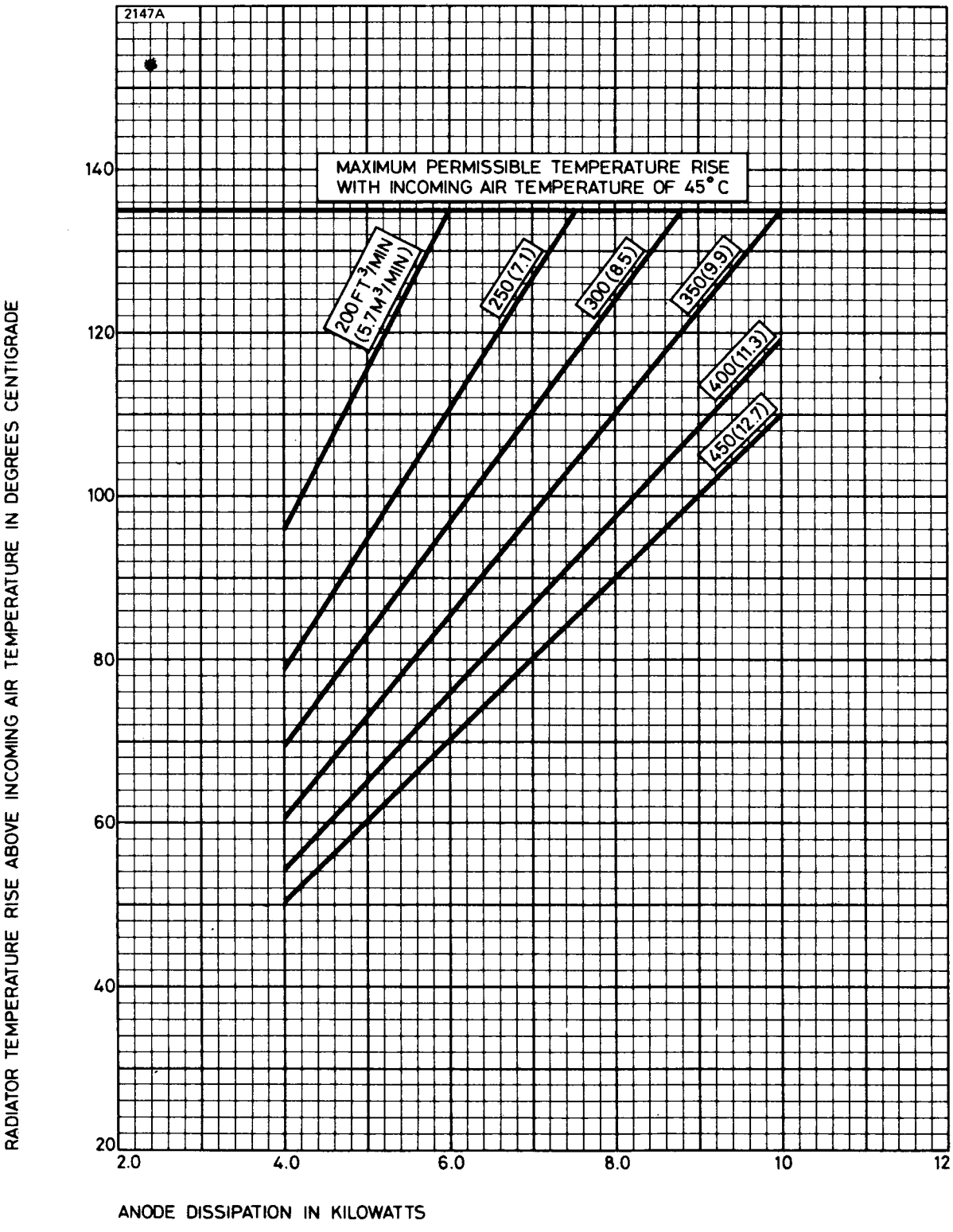
TYPICAL STRAPPED CHARACTERISTICS



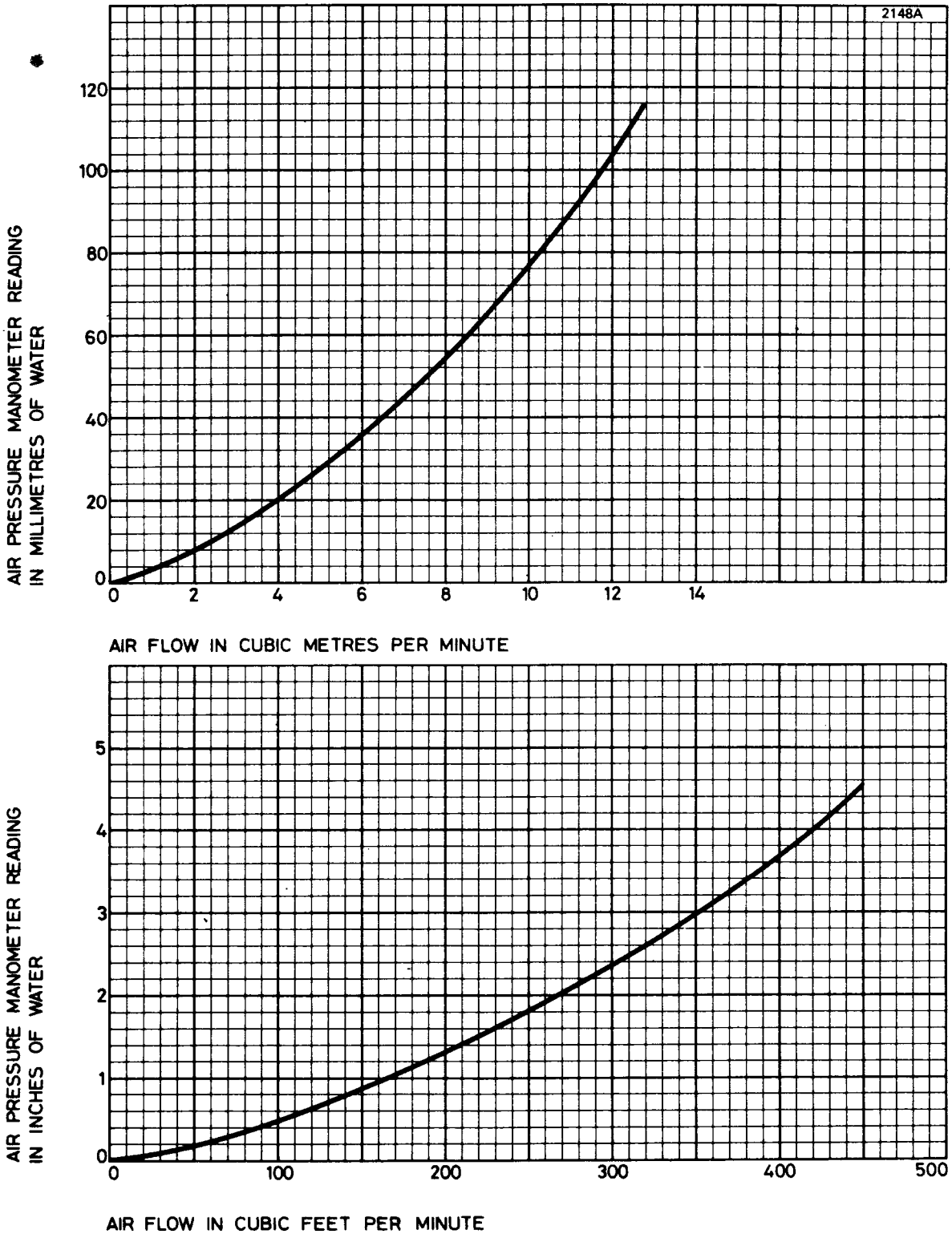
TYPICAL CONSTANT CURRENT CHARACTERISTICS



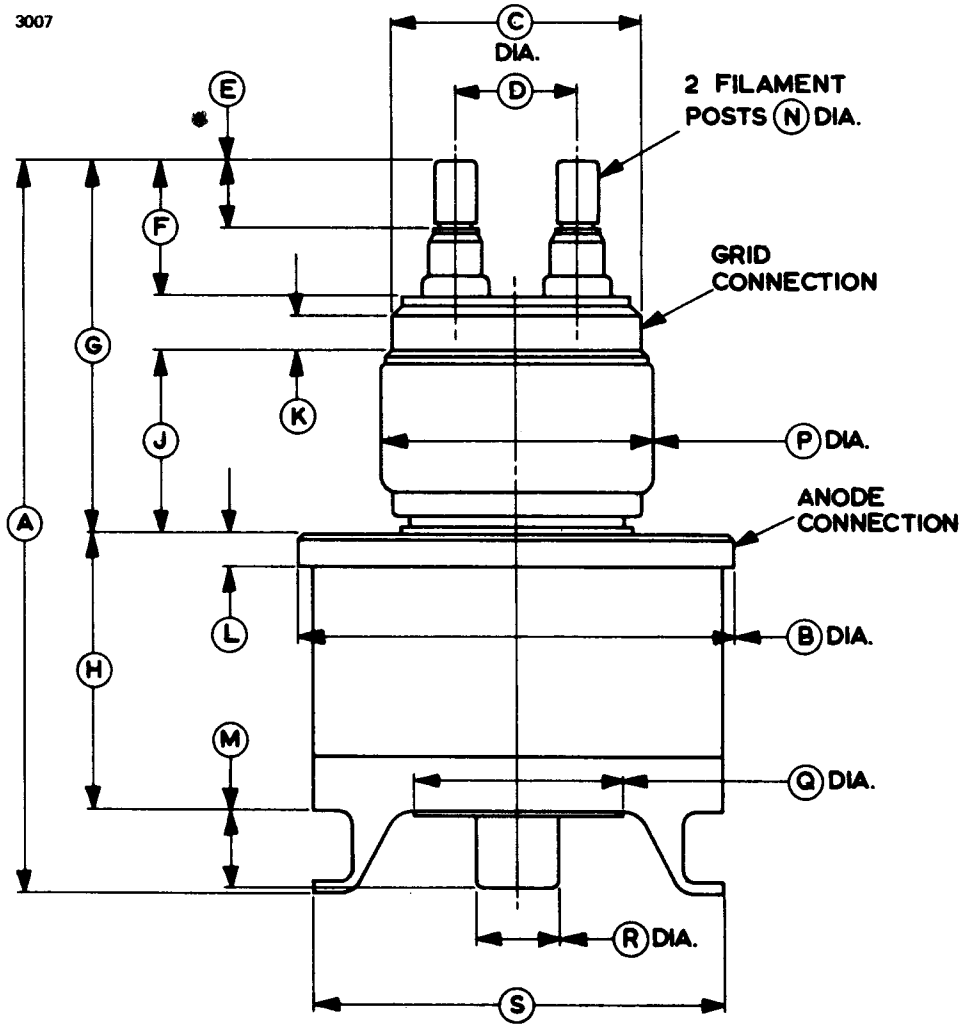
AIR COOLING REQUIREMENTS



TYPICAL AIR FLOW CHARACTERISTIC



OUTLINE



Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	11.062 max	281.0 max	K	0.500 min	12.70 min
B	6.375 ± 0.031	161.9 ± 0.8	L	0.500 ± 0.031	12.70 ± 0.79
C	3.685 ± 0.025	93.60 ± 0.64	M	1.150 max	29.21 max
D	1.710 ± 0.040	43.43 ± 1.02	N	0.625 ± 0.002	15.875 ± 0.051
E	0.812 min	20.62 min	P	4.125 max	104.8 max
F	1.907 min	48.44 min	Q	3.375 max	85.73 max
G	5.421 ± 0.140	137.7 ± 3.6	R	1.187	30.15
H	4.094 max	104.0 max	S	6.000 ± 0.094	152.4 ± 2.4
J	2.656 ± 0.093	67.46 ± 2.36			

Millimetre dimensions have been derived from inches.