

Forced-Air-Cooled Industrial Triode

Ref.: 3J/202E

Code: 3J/202E

CATHODE

Thoriated-tungsten filament			
Filament voltage	$5 \pm 2\%$	$5 \pm 5\%$	V
Filament current (nominal)		112	A
Maximum usable emission	18	12	A
Filament cold resistance		0.007	Ω

It is recommended that some resistance or reactance should be introduced into the filament supply to limit the switch or surge current to about two and a half times the normal working value. This impedance may be short circuited if desired as soon as the surge has decayed.

PIRANI TEST*

I_f	12	A
V_f range	0.07 to 10.1	V
Approx. measuring time	60	min

* See card supplied with individual valve for actual test figures.

CHARACTERISTICS

Amplification factor	{ at V_a 2kV, I_a 0.25A }	16	
Mutual conductance	{ at V_a 2kV, V_g -75V }	32	mA/V

DIRECT INTERELECTRODE CAPACITANCES

Grid to anode	30	pF
Grid to filament	60	pF
Anode to filament	1.5	pF

June 1971

3J/202E—1

ITT Components Group Europe
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COMPONENTS

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COOLING REQUIREMENTS

For air-cooling requirements see graphs on page 6.

Maximum radiator core temperature	220	°C
Maximum seal temperature (Note 1)	180	°C

Note 1.—To ensure that the stem seals are kept below the stated temperatures, it is necessary to direct into the grid flange a flow of cooling air of the order of 10 to 50 ft³/min (0.28 to 1.42 m³/min) dependent upon the circuit and frequency conditions.

MECHANICAL DATA

Dimensions	As shown in outline drawings		
Mounting position	Vertical, anode upwards or downwards		
Shipping weight, approximately	40 lb	18	kg

Accessories

The following approved items are supplied separately under the codes indicated:

214-LVA-001A	Filament connector, smaller
214-LVA-001B	Filament connector, larger
214-LVA-001C	Grid connector
GC8	Glass support tube

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Class C. Industrial Heating R.F. Oscillator

MAXIMUM RATINGS

Maximum anode voltage (peak value of direct voltage plus ripple)	7	kV
Maximum direct anode current	3	A
Maximum direct anode dissipation (continuous)	6	kW
Maximum direct grid dissipation (continuous)	280	W
Maximum direct grid current (Note 2)	700	mA
Maximum negative grid bias	-1 500	V
Maximum frequency for above ratings	50	MHz

Note 2.—This figure is given for guidance. Grid dissipation is absolute rating.

TYPICAL OPERATING CONDITIONS

Direct anode voltage	6	6.5	kV
Direct grid voltage	-670	-770	V
Direct anode current	2.5	3	A
Peak r.f. grid voltage	950	1 050	V
Direct grid current (Note 3)	450 (650)	350 (500)	mA
Grid dissipation (Note 3)	140	115	W
Grid resistor	1.5	2.2	kΩ
Power input	15	19.5	kW
Output power (oscillator)	11.5	14.1	kW
Power into load at 85% transfer efficiency	10	12	kW

Note 3.—Subject to wide variation dependent upon the impedance of the load circuit. The values of current shown in brackets are typical of off-load conditions and are given for guidance only: practical figures are dependent upon compensatory devices in the grid circuit.

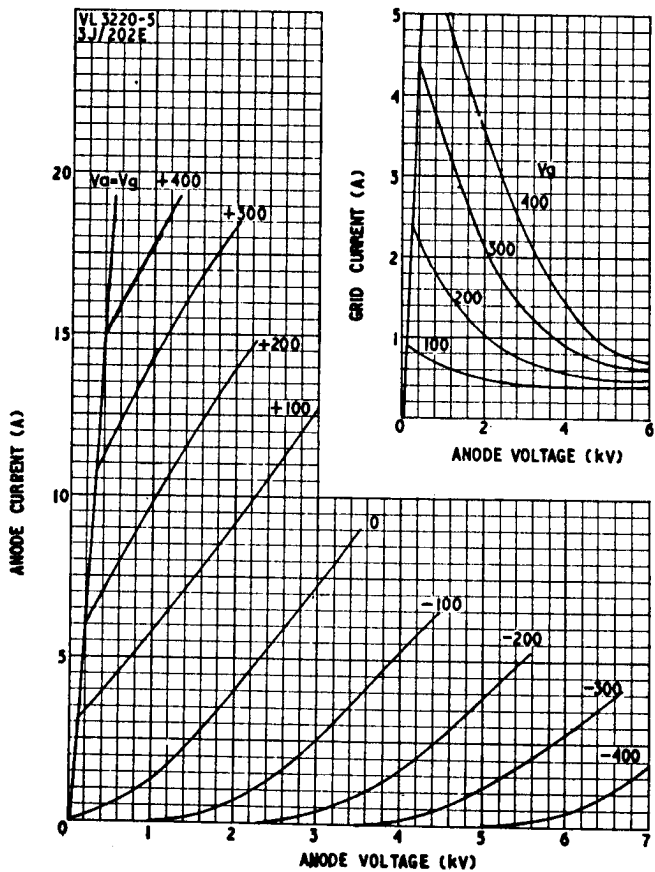
Class B. A.F. Power Amplifier or Modulator
(for balanced two-valve operation)

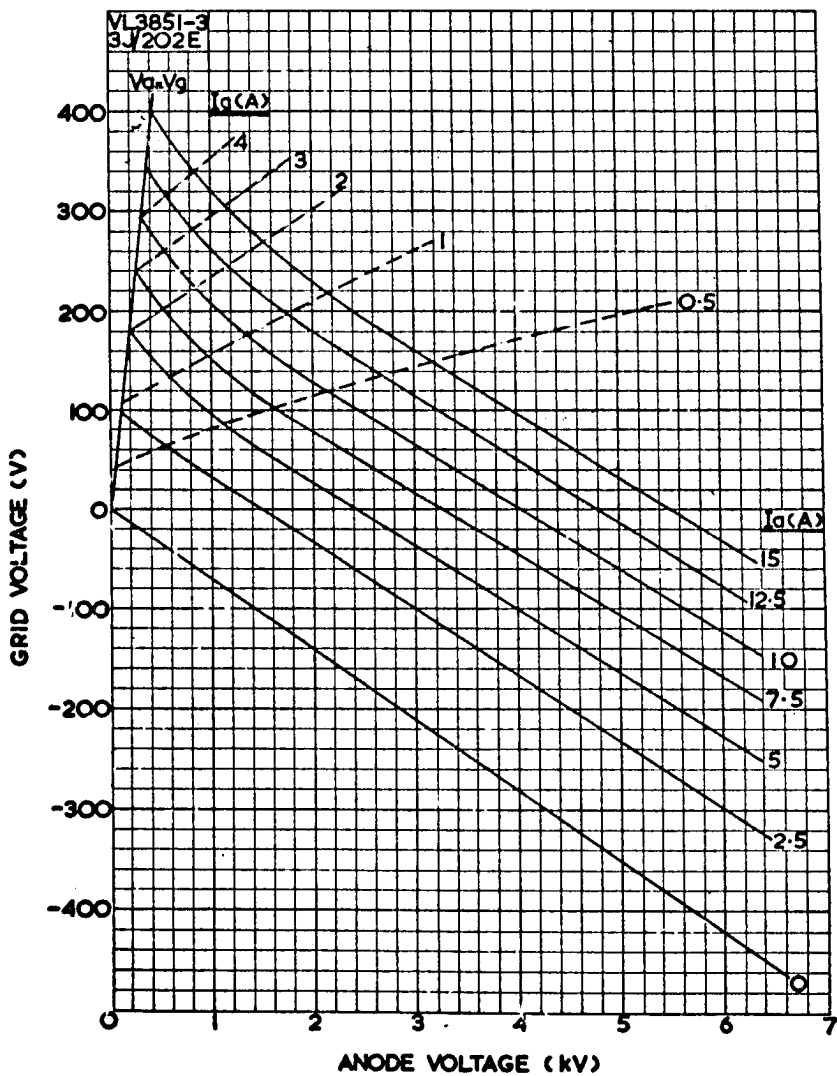
MAXIMUM RATINGS

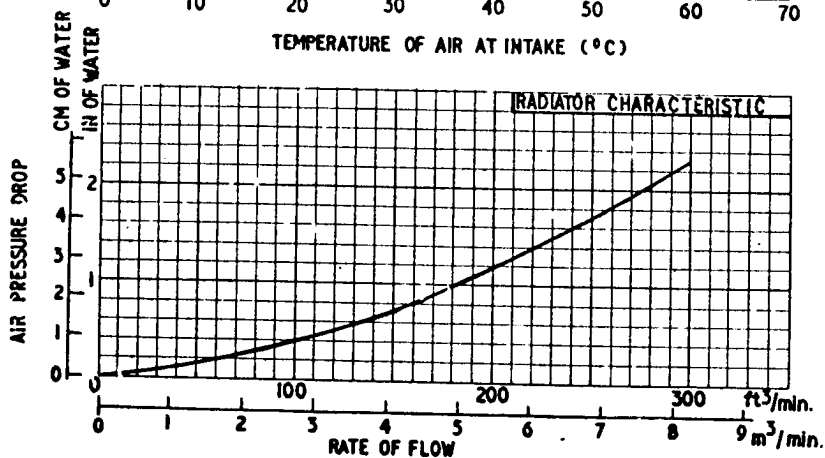
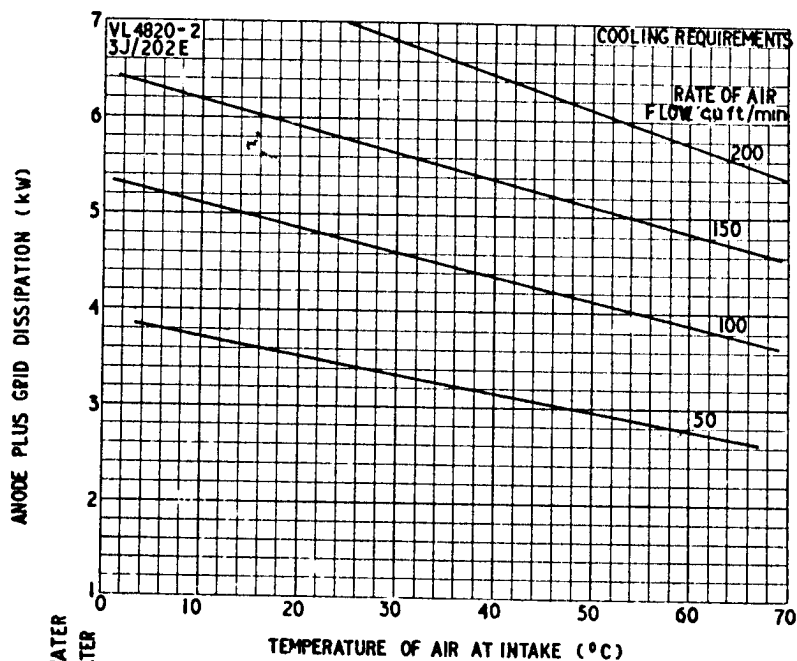
Maximum direct anode voltage	7	kV
Maximum direct anode current	3	A
Maximum direct anode dissipation (intermittent)	7	kW
Maximum direct anode dissipation (continuous)	6	kW
Maximum direct grid dissipation (continuous)	280	W
Maximum direct grid voltage	-1.5	kV

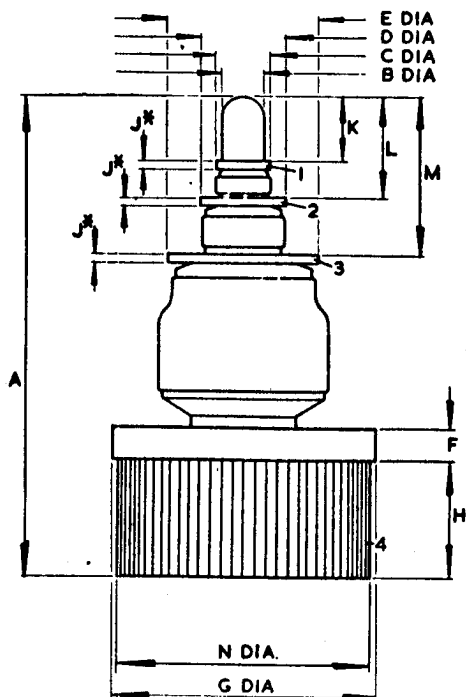
TYPICAL OPERATING CONDITIONS

Direct anode voltage	5	kV
Direct grid voltage	-350	V
Direct anode current (zero signal), per valve	0.5	A
Direct anode current (maximum signal), per valve	1.9	A
Load resistor, anode-to-anode	2.7	k Ω
Peak a.f. grid to grid voltage	920	V
Grid drive power, approximately (2 valves)	75	W
Direct grid current, per valve	84	mA
Direct grid dissipation, per valve	7.6	W
Output power (2 valves)	12	kW









CONNEXIONS

- 1 FILAMENT
- 2 FILAMENT
- 3 GRID
- 4 ANODE

*DENOTES:- CONTACT LENGTH

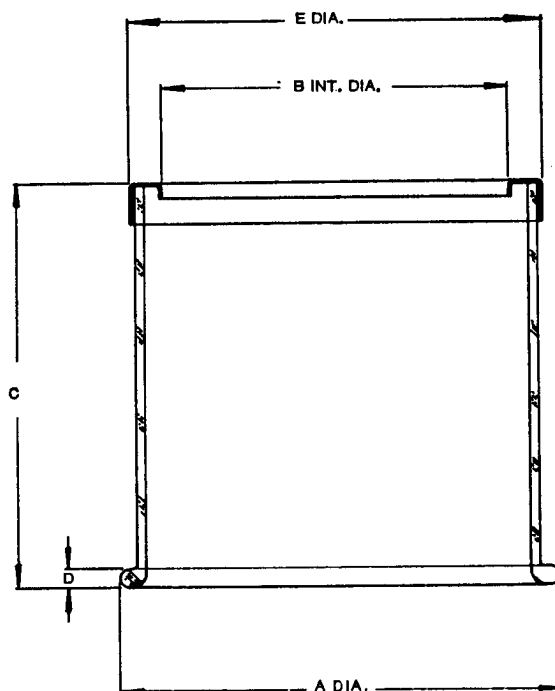
DIM.	MILLIMETRES	INCHES	DIM.	MILLIMETRES	INCHES
A	282,6 MAX.	11 1/4 MAX.	H	69,9 ± 1,6	2 3/4 ± 1/8
B	25,4 MAX.	1 MAX.	J	4,7 MIN. 6,4 MAX.	1/8 MIN. 1/4 MAX.
C	31,7 ± 0,4	1 1/4 ± 1/16	K	38,1 ± 1,6	1 1/2 ± 1/8
D	50,8 ± 0,4	2 ± 1/16	L	60,3 ± 4,8	2 3/4 ± 1/8
E	88,9 ± 0,4	3 1/2 ± 1/16	M	95,3 ± 4,8	3 3/4 ± 1/8
F	19,1 ± 1,6	3/4 ± 1/16	N	147,6 ± 1,6	5 7/8 ± 1/8
G	154,0 ± 0,8	6 1/8 ± 1/16			

NOTE: BASIC FIGURES ARE INCHES

GLASS SUPPORT TUBE

Code: GC8

GC8 Outline



DIM.	INCHES	MILLIMETRES
A	7.1/4 MIN. 7.5/8 MAX.	184,1 MIN. 193,7 MAX.
B	5.29/32 $\pm$ 1/32	150,0 $\pm$ 0,8
C	7.1/32 $\pm$ 5/32	178,6 $\pm$ 4,0
D	1/4 MIN. 3/8 MAX.	6,3 MIN. 9,5 MAX.
E	7 MAX.	177,8 MAX.

BASIC DIMS. ARE INCHES