PET15-2A

Air Cooled Triode
For Industrial RF Heating Machines

Drop in equivalent of ITL 15-2

- Output Power: 45 kW in CW mode
- Anode voltage: 13 kV
- Anode dissipation: 17 kW
- Frequency up to 120 MHz

Manufactured in India, in a world-class facility equipped with high quality machinery, materials and components sourced from reputed suppliers in America, Europe and Japan.

Fifty-two weeks warranty against manufacturing defects irrespective of the number of hours of operation.

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The PET15-2A is a RF power triode designed specifically for industrial applications. This tube uses a coaxial design and metal-ceramic technology. This triode may be operated in CW or pulse modes. For operation in pulse mode, the parameters depend on each equipment characteristics. Contact us for specific information. The PET15-2A is a air cooled triode.

Electrical characteristics

Filament	thoriated tungsten
Filament voltage (+ 5 %, - 10 %) (see note 1)	7.2 V
Filament current	180 A
Surge current (maximum)	500 A
Cold resistance	5 mΩ
Capacitances:	
• Grid to Anode	25 pF
• Grid to Cathode	60 pF
• Cathode to Anode (see note 2)	1.4 pF
Amplification factor	25 (approx.)
Transconductance (Va: 4 kV, Ia: 4 A)	60 mA/V (approx)

Mechanical characteristics

Operating position	vertical, anode up or down
Weight	9 kg (19 lbs) approx.
Dimensions	see outline drawing

Maximum ratings

Frequency (see note 3)	120 MHz
Anode voltage:	
• Up to 30 MHz	13 kV
• From 30 to 60 MHz	11 kV
• From 60 to 90 MHz	9 kV
• From 90 to 120 MHz	7 kV
Control grid voltage	-1500 V
Anode current	8 A
Control grid current:	
• At full load	1.6 A
• At no load	3 A
Peak cathode current, CW	40 A
Anode dissipation:	
• inlet air temperature = 25°C	17 kW
• inlet air temperature = 45°C	15 kW
Grid dissipation:	
• Up to 30 MHz	600 W
• From 30 to 60 MHz	520 W
• From 60 to 90 MHz	460 W
• From 90 to 120 MHz	400 W
Grid resistance (tube non conducting)	10 KΩ

Typical operation (see note 4)
Class C RF oscillator for industrial applications

Frequency	30	30	MHz
Anode voltage	12	10	kV
Grid bias	- 650	- 600	V
Grid voltage	910	920	V
Anode current	5	6	A
Grid current, on load	0.33	0.6	A
Anode input power	60	60	kW
Anode output power	45	45	kW
Anode dissipation	14.5	14.5	kW
Grid dissipation	75	170	W
Grid resistance	1970	1000	Ω
Feedback ratio	8.4	10.2	%
Oscillator efficiency	75	75	%

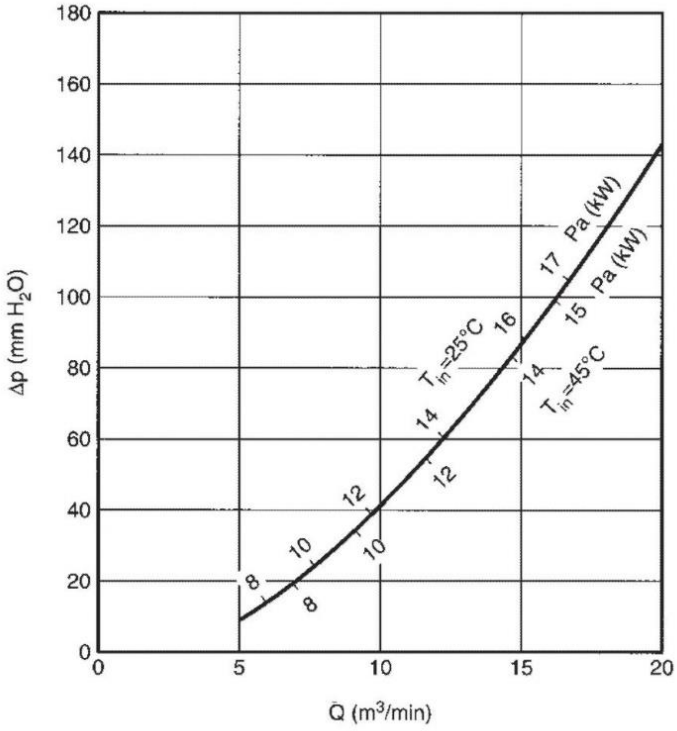
Note:
1. At frequencies above 50 MHz, the filament voltage is reduced so that the ratio of filament voltage to current becomes the same as that without an anode voltage.
2. Measured with a 40 x 40 cm shielding plate attached to the grid plate.
3. Limited conditions above 30 MHz. Please consult Pilani Electron Tubes & Devices.
4. Operation with higher frequencies on request.

Cooling

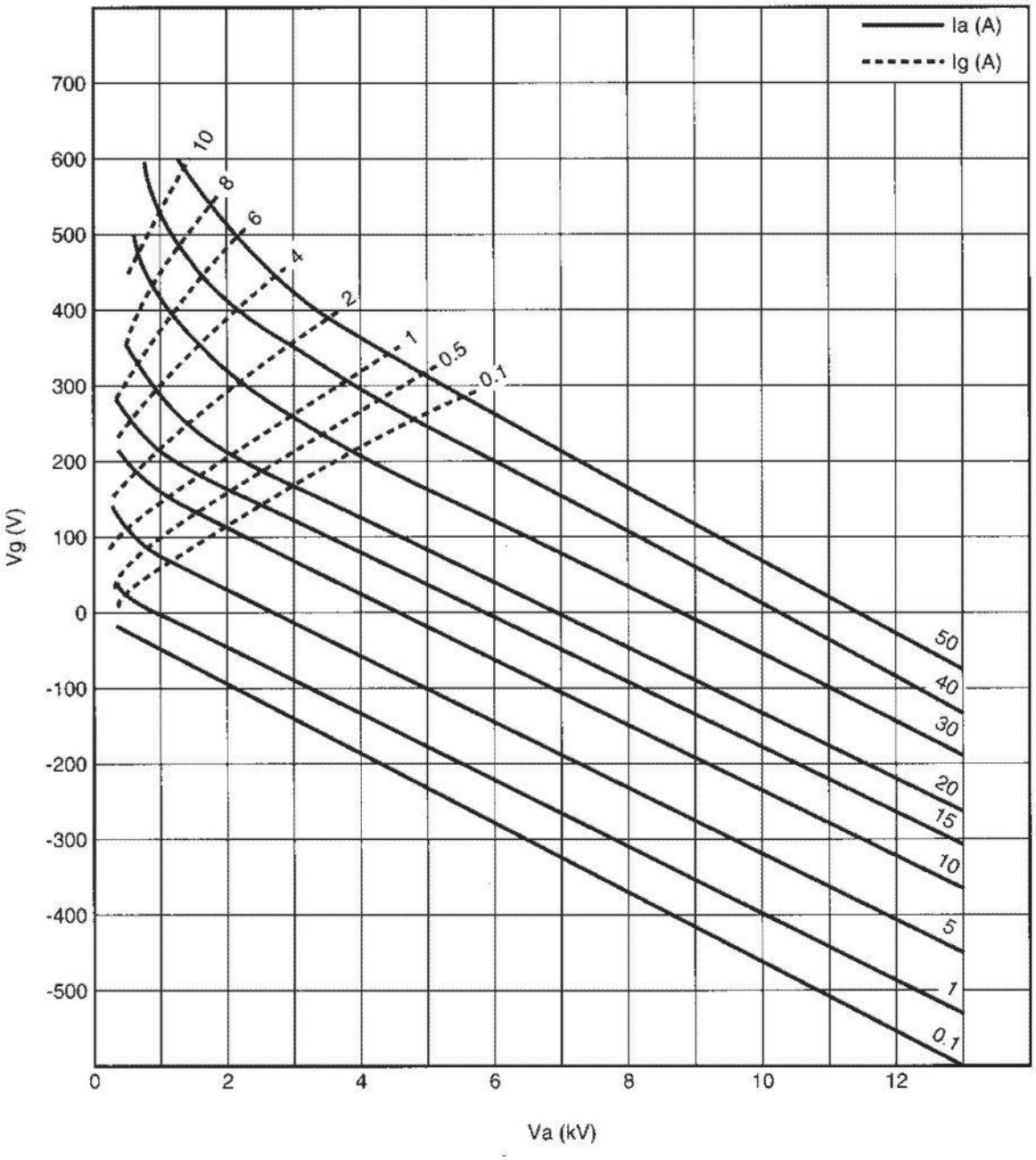
Anode cooling: forced air
Inlet air temperature: 45 °C max.
Cooling air flow: 5 m^3/min.
Temperature at any point on tube envelope: 220 °C max.

The required air flow rates and pressure drop are as shown in the graph. This is valid for air flow towards the cooling fins or away from them.

Pa: anode dissipation
Δp: pressure drop across the cooler fins
q: air flow rate
T_{in}: inlet air temperature



Constant current characteristics



Outline drawing (in mm)