PET3020CJ

Water Cooled Triode
For Industrial RF Heating Machines

Drop in equivalent of RS 3020 CJ

- Output Power: 20 kW (CW mode)
- Anode voltage: 12 kV
- Anode dissipation: 20 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.

Pilani Electron Tubes & Devices Pvt. Ltd.
Patiala Road, Sangrur, PB, 148001, India
Phone: +91-9815309603 Email: sales@pilanielectron.com
Website: www.pilanielectron.com

Version 1.3, February 2018

The PET3020CJ is a RF power triode designed for dielectric heating 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 PET3020CJ is a water cooled triode.

Electrical characteristics

Cathode Filament	thoriated tungsten
Filament voltage (+ 5 %, - 10 %)	5.7 V
Filament current	135 A
Surge current (maximum)	405 A
Capacitances:	
• Grid to Anode	21 pF
• Grid to Cathode	52 pF
• Cathode to Anode (1)	1 pF
Amplification factor	22 Approx.

(1) Measured with a 30 cm diameter shielding plate in the grid terminal plane.

Mechanical characteristics

Operating position	vertical, anode up or down
Weight	4.1 kg (9 lbs) approx.
Dimensions	see outline drawing

Maximum ratings

Frequency	120 MHz
Anode voltage:	
• Up to 40 MHz	12 kV
• From 40 to 80 MHz	11 kV
• From 80 to 120 MHz	9 kV
Control grid voltage	- 1.3 kV
Control grid current (F < 40 MHz)	
• At full load, CW	0.9 A
• At no load, CW	1.1 A
Peak cathode current, CW	25 A
Anode dissipation	20 kW
Grid dissipation:	
• Up to 40 MHz	300 W
• From 40 to 80 MHz	230 W
• From 80 to 120 MHz	180 W
Grid resistance (at blocked tube)	15 KΩ

Cooling

Anode cooling	Water
Cooling water flow and pressure gradient	see cooling curves
Cooling water inlet pressure	6 bar max.
Water inlet temperature	35 °C max.
Temperature at any point on tube envelope	220 °C max.
Minimum Air flow on filament connections.	0.7 m^3 / min

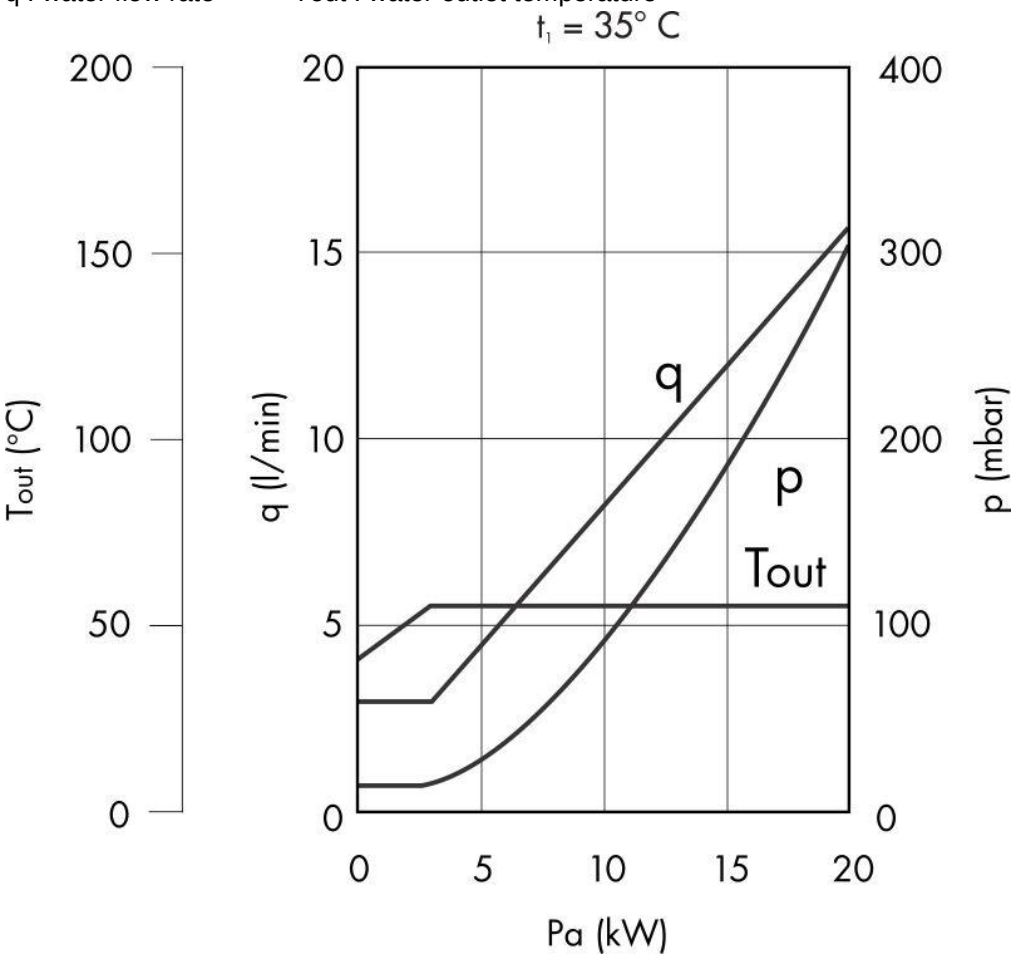
Typical Operation (Class C RF oscillator for industrial applications)

Frequency	<40	<80	MHz
Anode voltage	10	8	kV
Anode current	2.5	2.4	A
Control grid bias	-900	-750	V
RF control grid voltage	1180	1025	V
Anode current	2.5	2.4	A
Control Grid current	620	650	mA
Anode input power	25	19	kW
Anode output power	20	15	kW
Anode dissipation	4.3	3.3	kW
Control Grid dissipation	150	155	W
Grid resistance	1.45	1.15	kΩ
Feedback ratio	13.1	14.2	%
Oscillator efficiency	80	78	%

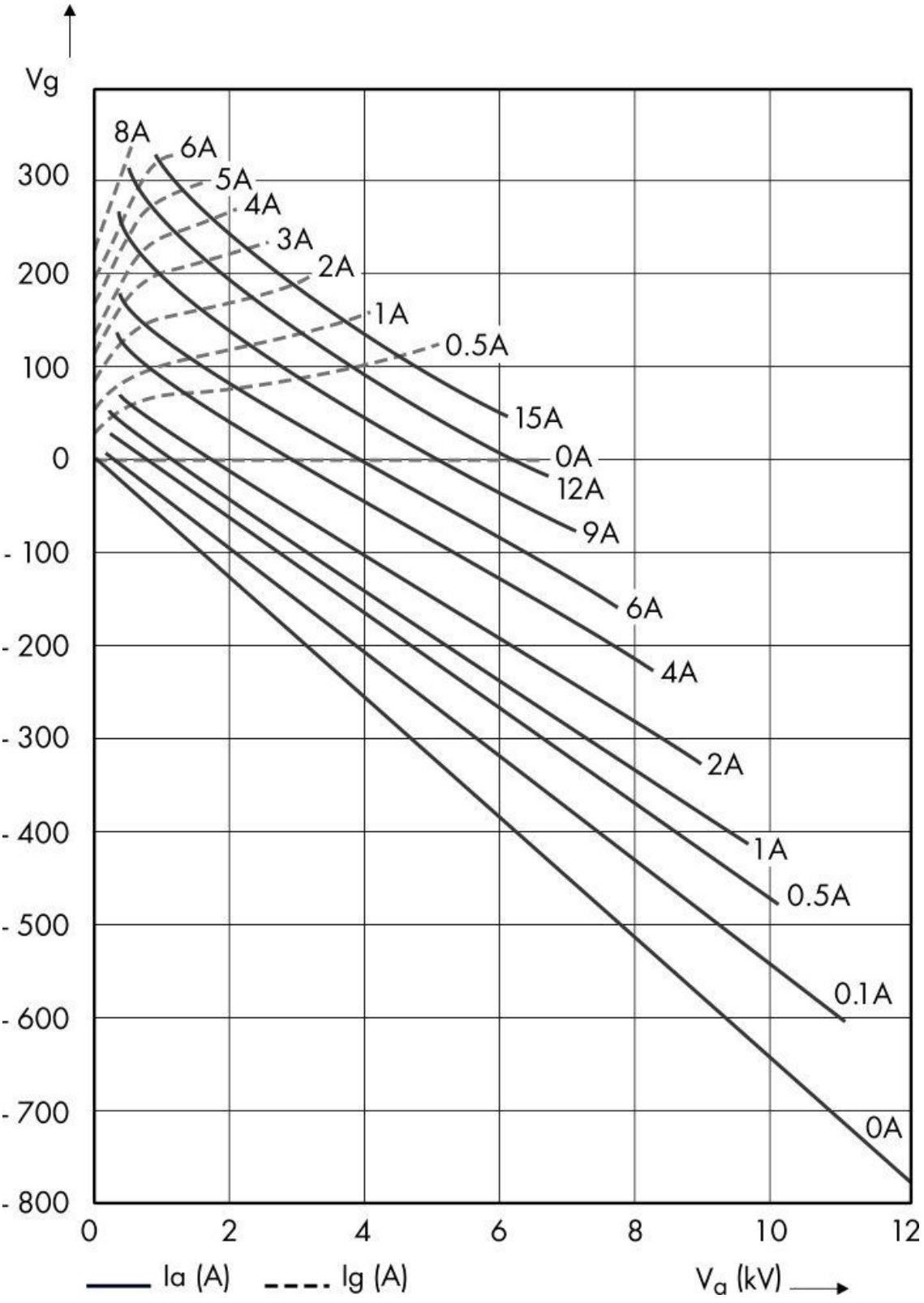
Operations at higher frequencies available upon request

Cooling Curves

Pa : anode dissipation Δp : pressure drop
q : water flow rate Tout : water outlet temperature



Constant Current Characteristics



Outline Drawing (in mm)