



ITK 25-1

Water-cooled triode for industrial RF heating



90 kW triode for induction heating

Based on more than 60 years of experience in the design and manufacture of electron tubes, Thales is a long-standing partner to most producers of industrial heating machines. And we are the benchmark supplier of grid tubes.

The ITK 25-1 triode is intended for low power induction heating applications and delivers continuous RF power of 90 kW. It is especially well suited to industrial applications, such as heat treatment.

This water-cooled triode uses a coaxial design and metal-ceramic technology. It 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.

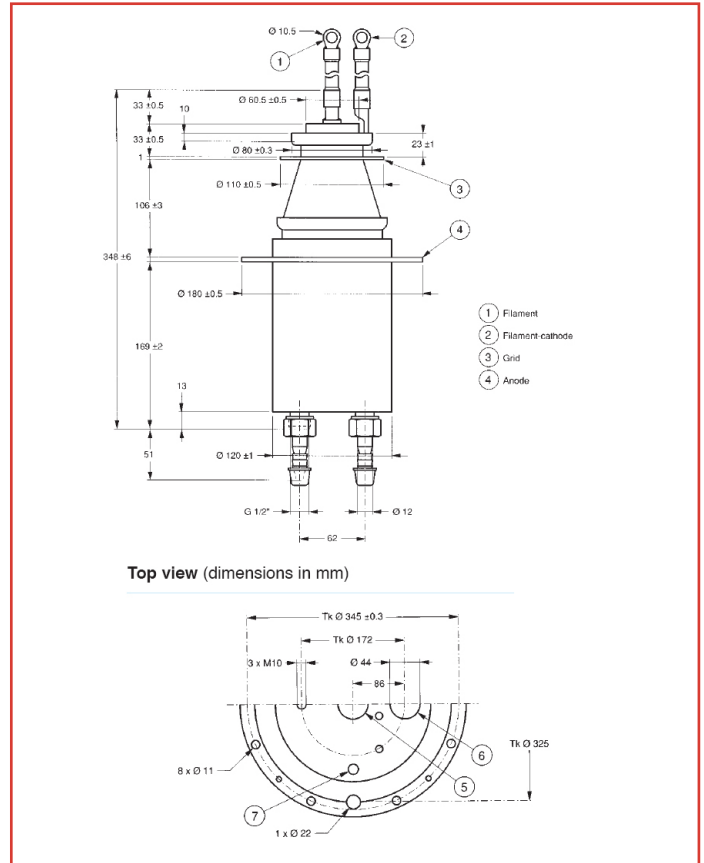
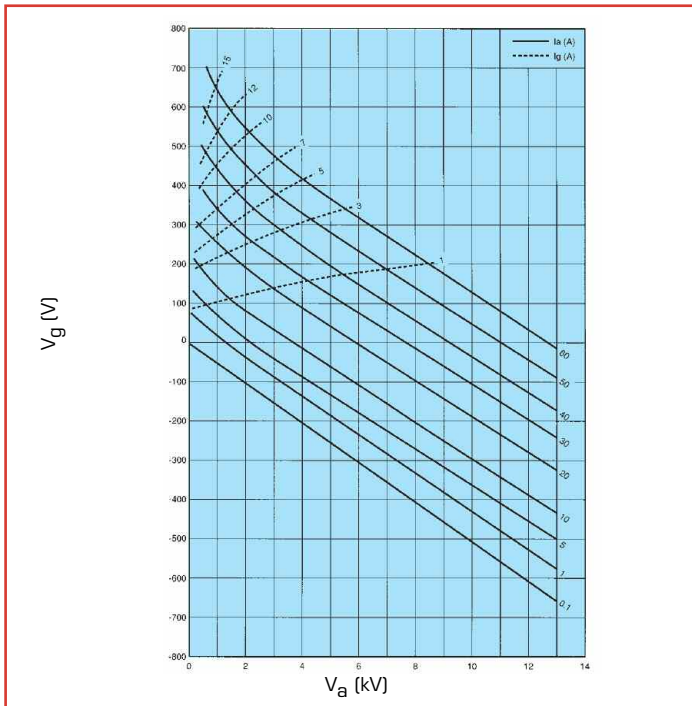
Thales is fully committed to the long-term viability of tube technology, and to delivering high-tech products based on our proven expertise in complex processes. We offer the widest range on the market, whether for dielectric or induction and laser applications, backed by all the customer support and technical assistance services you need.

- Output power: 90 kW (CW mode)
- Anode voltage: 14 kV
- Anode dissipation: 50 kW
- Frequency up to 100 MHz

ITK 25-1

Industrial RF Heating triode

Constant current characteristics



| Technical specifications | |
|--|-------------------------|
| Cathode | thoriated tungsten |
| Filament voltage | 9 V |
| Filament current | 180 A |
| Max. heater surge current | 720 A |
| Amplification factor | 20 |
| Capacitance | |
| • grid-anode | 30 pF |
| • grid-cathode | 80 pF |
| • cathode-anode | 2 pF |
| Mechanical characteristics | |
| Operating position | vertical |
| Weight | 6.5 kg |
| Dimensions | 180 x 354 mm |
| Cooling characteristics (industrial water) | |
| Max. water temperature at tube outlet | 60 °C |
| Max. water pressure at tube inlet | 5 bar |
| Max. T° at any point on the tube envelop | 220 °C |
| Min. air flow on filament connections | 0.5 m ³ /min |

| Maximum ratings | | |
|--|-------|--------|
| Frequency | 100 | MHz |
| Anode voltage up to 30 MHz | 14 | kV |
| Anode voltage from 30 to 50 MHz | 12 | kV |
| Anode voltage from 50 to 80 MHz | 10 | kV |
| Anode voltage from 80 to 100 MHz | 8 | kV |
| Grid voltage | -1500 | V |
| Anode current, CW | 12 | A |
| Grid current, at full load, CW | 2.2 | A |
| Grid current, at no load, CW | 4.0 | A |
| Peak cathode current CW | 55 | A |
| Anode dissipation: industrial water | 45 | kW |
| Anode dissipation: distilled water | 50 | kW |
| Grid dissipation up to 30 MHz | 700 | W |
| Grid dissipation from 30 to 50 MHz | 620 | W |
| Grid dissipation from 50 to 80 MHz | 560 | W |
| Grid dissipation from 80 to 100 MHz | 500 | W |
| Grid resistance (tube non conducting) | 10 | kΩ |
| Class C, RF oscillator for industrial applications | | |
| Frequency | 30 | 30 MHz |
| Anode voltage | 12 | 10 kV |
| Anode current | 9.7 | 9.9 A |
| Grid current, on load | 1.3 | 1.4 A |
| Anode input power | 116 | 99 kW |
| Anode output power | 88 | 71 kW |
| Anode dissipation | 27 | 26 kW |
| Grid dissipation | 480 | 535 W |
| Grid resistance | 650 | 540 Ω |
| Feedback ratio | 11.6 | 13.3 % |
| Oscillator efficiency | 76 | 74 % |

Operations at higher frequencies available on request.

For more technical information regarding this tube, feel free to ask our distributor Richardson Electronics - www.rell.com

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