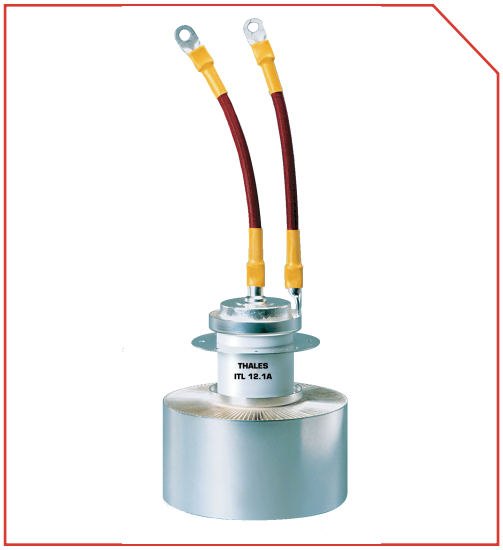
THALES

ITL 12-1

Air-cooled triode for industrial RF heating



- Output power: 33 kW (CW mode)
- Anode voltage: 12 kV
- Anode dissipation: 12 kW
- Frequency up to 120 MHz

33 kW triode for RF dielectric heating machines

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 ITL 12-1 triode is intended for dielectric heating applications and delivers continuous RF power of 33 kW. It is especially well suited to industrial applications, such as wood gluing and plastic welding.

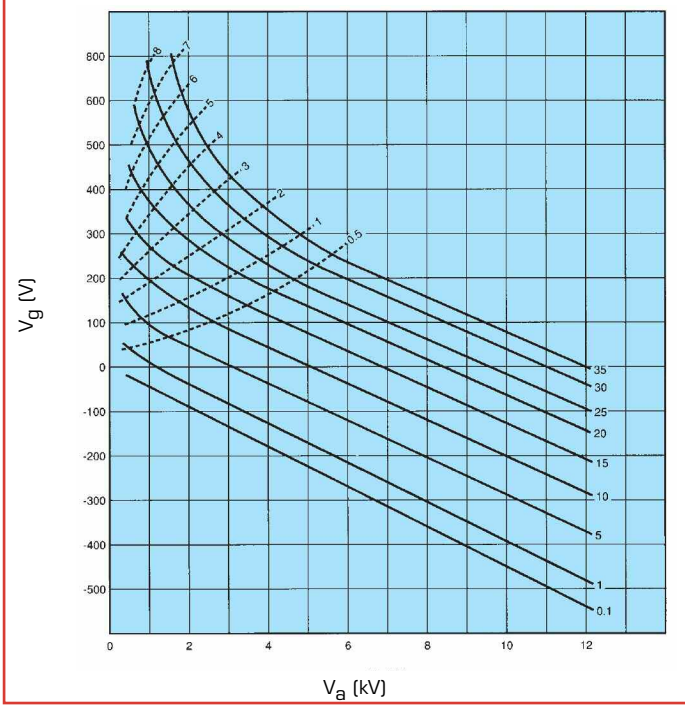
This air-cooled triode uses a coaxial design and metal-ceramic technology. It may be operated in CW or pulsemodes. For operation in pulse mode, the parameters depend on each equipment characteristics. Contact us for specific information.

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.

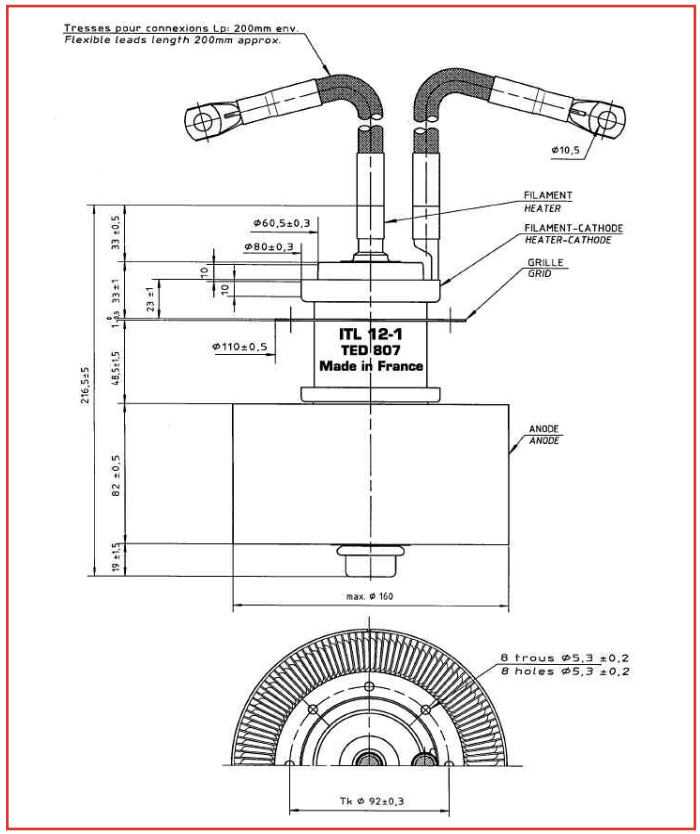
ITL 12-1

Industrial RF Heating triode

Constant current characteristics



Outline drawing (in mm)



Technical specifications

Cathode	thoriated tungsten	
Filament voltage	5.8	V
Filament current	145	A
Max. heater surge current	600	A
Amplification factor	20	
Capacitance		
• grid-anode	21	pF
• grid-cathode	55	pF
• cathode-anode	1.0	pF

Mechanical characteristics

Operating position	vertical	
Weight	6.5	kg
Dimensions	160 x 216.5	mm

Cooling characteristics (air-cooling)

Typ. air temperature at tube inlet	45	°C
Min. air flow cooling	6	m^3/min
Min. air pressure cooling	3	mbar
Max. T° at any point on the tube envelop	220	°C

Maximum ratings

Frequency	120	MHz
Anode voltage up to 30 MHz	12	kV
Anode voltage from 30 to 60 MHz	9	kV
Anode voltage from 60 to 90 MHz	7	kV
Anode voltage from 90 to 120 MHz	6	kV
Grid voltage	-1500	V
Anode current, CW	5	A
Grid current, at full load, CW	0.8	A
Grid current, at no load, CW	1.5	A
Peak cathode current CW	28	A
Anode dissipation (Tin = 25°C)	12	kW
Anode dissipation (Tin = 45°C)	10	kW
Grid dissipation up to 30 MHz	350	W
Grid dissipation from 30 to 60 MHz	320	W
Grid dissipation from 60 to 90 MHz	300	W
Grid dissipation from 90 to 120 MHz	280	W
Grid resistance (tube non conducting)	10	kΩ

Class C, RF oscillator for industrial applications

Frequency	30	30	MHz
Anode voltage	10	8	kV
Anode current	4.3	4.8	A
Grid current, on load	0.53	0.72	A
Anode input power	43	38.4	kW
Anode output power	33	29	kW
Anode dissipation	9.6	8.6	kW
Grid dissipation	145	220	W
Grid resistance	1210	790	Ω
Feedback ratio	10.5	12.9	%
Oscillator efficiency	76.5	76	%

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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