

Power Electronics Technologies

77TITLP1 - ITL12-1 AIR-COOLED TRIODE FOR RF INDUCTION HEATING MACHINES

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

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.

The P.R.C. factory 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.



OUTLINE DRAWING (IN MM)



TECHNICAL SPECIFICATIONS

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

CLASS C, RF OSCILLATOR FOR INDUSTRIAL APPLICATIONS

Frequency	30	30	MHz	
Anode voltage Anode	10	8	kV	
Current Anode input	4.3	4.8	А	
Power Anode output	0.53	0.72	А	
Power Anode	43	38.4	kW	
Dissipation Grid	33	29	kW	
Current, on load Grid	9.6	8.6	kW	
Dissipation Grid	145	220	W	
resistance Feedback	1210	790	Ω	
Ratio Oscillator	10.5	12.9	%	
Efficiency	76.5	76	%	

CONSTANT CURRENT CHARACTERISTICS



MAXIMUM RATINGS

Frequency	120	MHz
Anode voltage up to 30 MHz	12	kW
Anode voltage from 30 to 60 MHz	9	kW
Anode voltage from 60 to 90 MHz	7	kW
Anode voltage from 90 to 120 MHz	6	kW
Grid voltage	-1500	V
Anode current, CW	5	А
Grid current, at full load, CW	0.8	А
Grid current, at no load, CW	1.5	А
Peak cathode current CW	28	А
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

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	m³/min
Min. air pressure cooling	3	mbar
Max. T° at any point on the tube envelope	220	°C