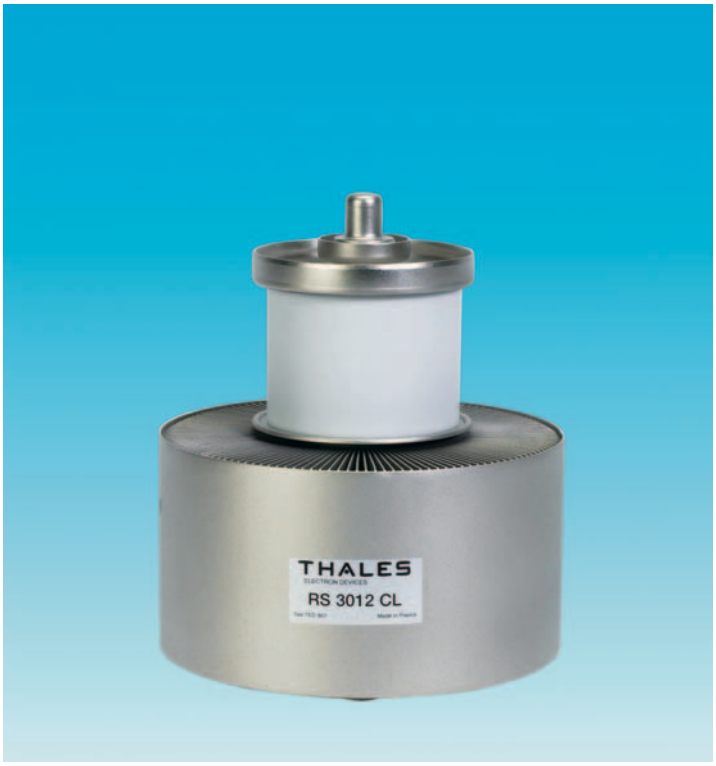
INDUSTRIAL
RF HEATING

RS 3012 CL

Forced-air cooled triode

18 kW



- Output power:
  18 kW in CW mode
- Anode voltage: 12 kV
  17 kV in serial regulation
- Anode dissipation: 10 kW max.
- Frequency up to 50 MHz

THALES

RS 3012 CL

The RS 3012 CL is a RF power triode designed specifically for industrial applications. This tube uses a coaxial design and metal-ceramic technology. This triode is designed to operate in CW mode. For operation in pulse mode, the parameters depend on each equipment characteristics, contact us for specific information. The RS 3012 CL is a forced-air cooled triode.

This product is designed, developed and manufactured at an ISO 9001 production site registered.

Electrical characteristics

Filament	thoriated tungsten		
Filament voltage (+ 5 %, - 10 %)	6	V	
Filament current	64	A	
Surge current	192	A	max.
Capacitance:			
• grid-anode	11	pF	
• grid-cathode	21	pF	
• cathode-anode (1)	0.3	pF	
Amplification factor	35		approx.
Transconductance (Va: 2 kV, Ia: 1 A)	20	mA/V	approx.

Mechanical Characteristics

Operating position	vertical, anode up or down		
Weight	6.5	kg	approx.
Dimensions	see outline drawing		

Maximum ratings

Frequency	50	MHz
Anode voltage:		
• oscillator mode	12	kV
• serial regulation	17	kV
Control-grid voltage	- 1	kV
Control-grid current:		
• at full load, CW	540	mA
• at no load, CW	650	mA
Peak cathode current, CW	14	A
Anode dissipation	10	kW
Grid dissipation	200	W
Grid resistance (at blocked tube)	20	kΩ

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

Cooling

Anode cooling	forced air		
Cooling water flow and pressure gradient	see cooling curves		
Inlet air temperature	25	°C	typ.
Temperature at any point on tube envelope	220	°C	max.

Typical operation (2)

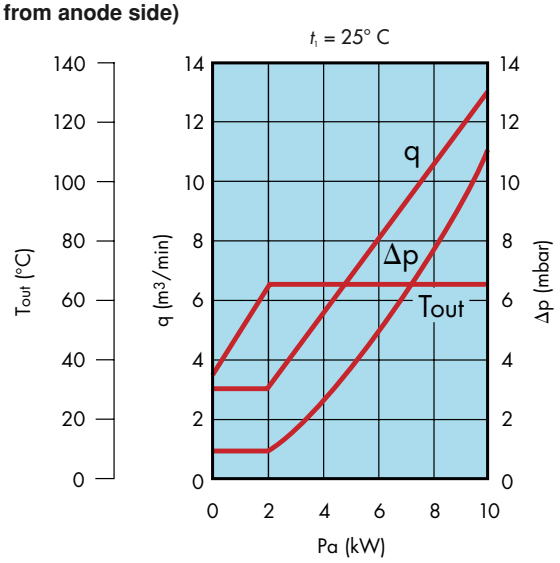
	Class C RF oscillator for industrial applications		
Examples	**1**	**2**	
Frequency	< 50	< 50	MHz
Anode voltage	10	8	kV
Control grid bias	- 550	- 550	V
RF control grid voltage	910	890	V
Anode current	2.3	1.9	A
Control grid current	500	480	mA
Anode input power	23	15.2	kW
Anode output power (3)	18	12	kW
Anode dissipation	4.6	3	kW
Screen grid dissipation	155	140	W
Grid resistance	1.1	1.15	kΩ
Feedback ratio	10	12.4	%
Oscillator efficiency	78	79	%

(2) Operation with higher frequencies on request.
(3) Without taking circuit losses into account.

Nota: Data sheets are for information only. For design purpose, please ask for our latest specification.

Cooling air curves (air flow from anode side)

Pa : anode dissipation
Δp : pressure drop
q : air flow rate
T_{out} : air outlet temperature



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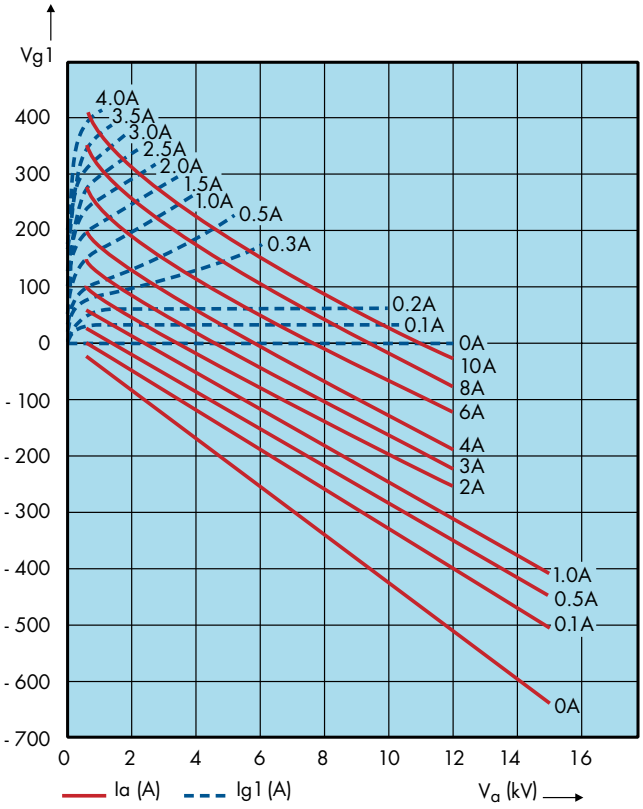
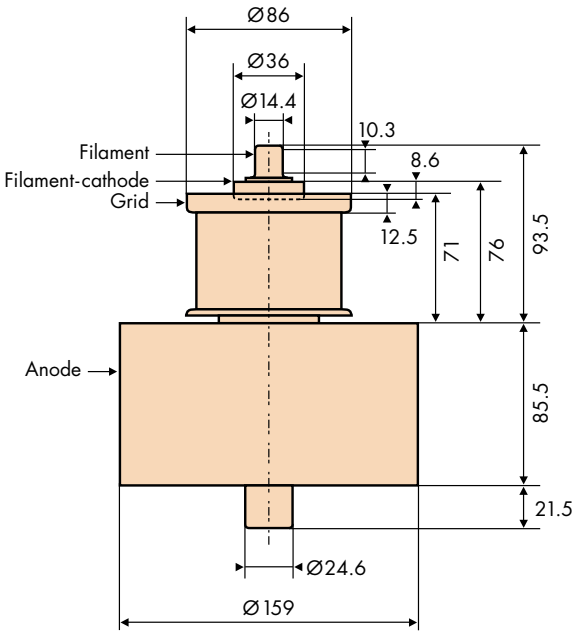
Constant current characteristics



Outline drawing (mm)



For further information, please contact:

THALES ELECTRON DEVICES
2 bis, rue Latécoère - 78941 Vélizy Cedex - France
Tel: + 33 1 30 70 35 00 - Fax: + 33 1 30 70 35 35
www.thalesgroup.com/electrondevices

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