

# RS 3150 CJ

Water-cooled triode

**240 kW**

- Output power:  
240 kW in CW mode
- Anode voltage: 15 kV
- Anode dissipation: 100 kW max.
- Frequency up to 100 MHz



**THALES**



RS 3150 CJ

The RS 3150 CJ 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 3150 CJ is a water-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 %)	15	V	
Filament current	255	A	
Surge current	765	A	max.
Capacitance:			
• grid-anode	66	pF	
• grid-cathode	166	pF	
• cathode-anode (1)	4.5	pF	
Amplification factor	22		approx.
Transconductance (Va: 4 kV, Ia: 5 A)	95	mA/V	approx.

### Mechanical characteristics

Operating position	vertical, anode up or down		
Weight	20	kg	approx.
Dimensions	see outline drawing		

### Maximum ratings

Frequency (2)	30	MHz
Anode voltage	15	kV
Control-grid voltage	- 2	kV
Control-grid current:		
• at full load, CW	4	A
• at no load, CW	5	A
Peak cathode current, CW	140	A
Anode dissipation	100	kW
Grid dissipation	2	kW
Grid resistance (at blocked tube)	5	k $\Omega$

(1) Measured with a 40 cm diameter shielding plate in the grid terminal plane.

(2) Conditions above 30 MHz, please consult Thales Electron Devices.

## Cooling

Anode cooling	water		
Cooling water flow and pressure gradient	see cooling curves		
Cooling water inlet pressure	5	bar	max
Water inlet temperature	35	°C	max
Temperature at any point on tube envelope	220	°C	max.
Air flow on tube terminal side	3	m <sup>3</sup> /mn	

## Typical operation (3)

Examples	Class C RF oscillator for industrial applications		
	1	2	
Frequency	< 30	< 30	MHz
Anode voltage	14	13	kV
Control grid bias	- 850	- 800	V
RF control grid voltage	1 310	1 250	V
Anode current	22.3	20.9	A
Control grid current	3.1	3.1	A
Anode input power	312	272	kW
Anode output power (4)	240	210	kW
Anode dissipation	68	58	kW
Control grid dissipation	1.2	1.2	kW
Grid resistance	275	260	Ω
Feedback ratio	10.5	10.7	%
Oscillator efficiency	77	77	%

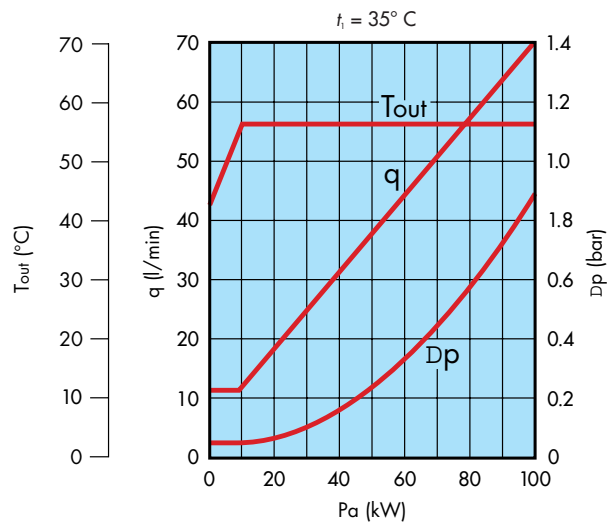
(3) Operation with higher frequencies on request.

(4) Without taking circuit losses into account.

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

## Cooling water curves:

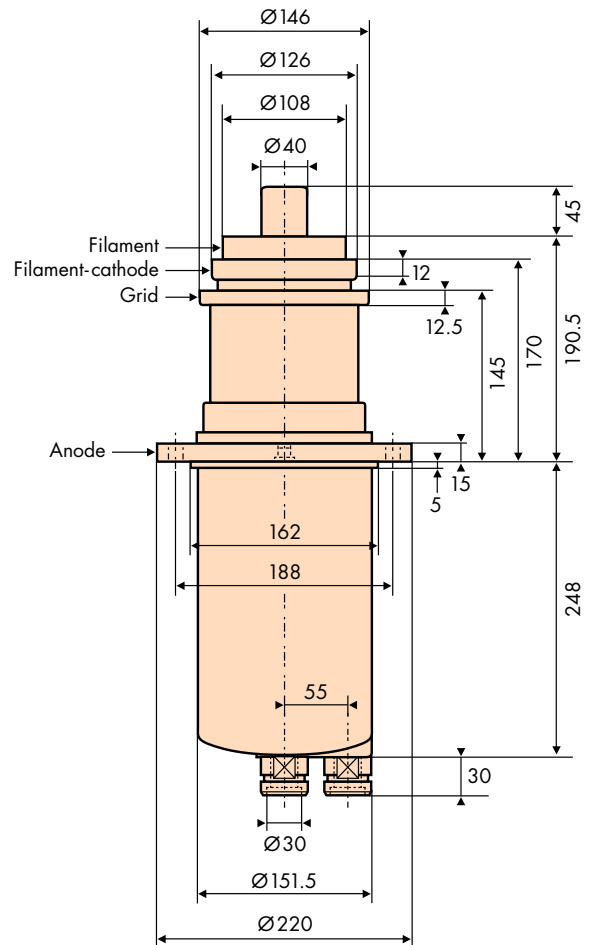
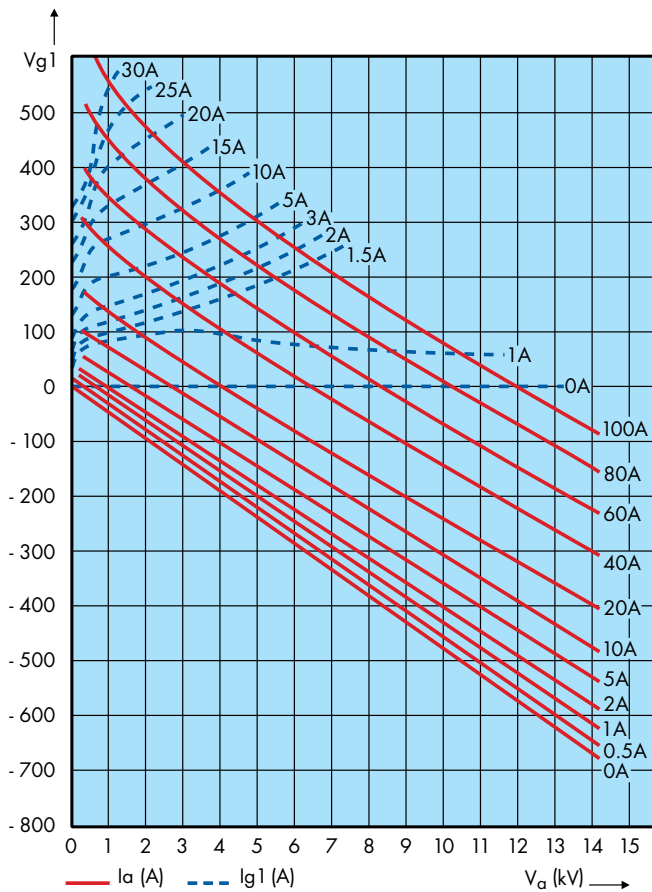
$P_a$  : anode dissipation  
 $\Delta p$  : pressure drop  
 $q$  : water flow rate  
 $T_{out}$  : water outlet temperature



# RS 3150 CJ

Constant current characteristics

Outline drawing (mm)



This document cannot be considered to be a contractual specification. The information given herein may be modified without notice due to product improvement or further development. Consult Thales Electron Devices before making use of this information for equipment design.

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](http://www.thalesgroup.com/electrondevices)