

SVETLANA TECHNICAL DATA

4CX15,000R

Radial Beam Power Tetrode



The Svetlana™ 4CX15,000R is an air cooled power tetrode designed for audio and radio frequency applications. It is particularly well-suited for use in VHF FM broadcast transmitters in the Band II 88-108 MHz frequency range and has full performance ratings to 110MHz. The Svetlana 4CX15,000R has a directly-heated, superior engineered thoriated tungsten mesh filament for mechanical ruggedness and good VHF electrical performance. This modern mesh filament design is superior to other mesh filament designs.

The Svetlana 4CX15,000R is manufactured in the Svetlana factory in St. Petersburg, Russia, and is designed to be a direct replacement for any 4CX15,000R.

Characteristics

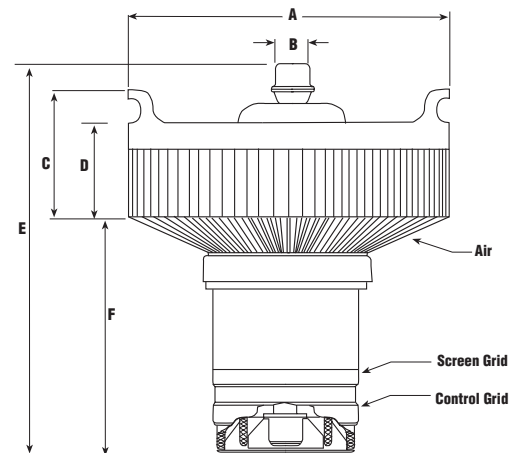
Electrical

Filament:	Thoriated-tungsten mesh
Voltage	6.3 ± 0.3 V
Current @ 6.3V	164 A
Amplification factor (average)	
Grid to screen	4.5
Direct interelectrode capacitances (grounded cathode):	
Cin	158 pF
Cout	25.8 pF
Cpk	1.3 pF
Direct interelectrode capacitance (grounded grid):	
Cin	67 pF
Cout	25.6 pF
Cgk	0.21 pF
Maximum frequency for full ratings (CW)	110 MHz

Mechanical

Maximum overall dimensions:	
Length	23.8 cm (9.38 in.)
Diameter	19.3 cm (7.58 in.)
Net weight	5.8 kg (12.8 lb.)
Operating position	Axis vertical, base up or down
Maximum operating temperature, ceramic/metal seals or envelope	250° C
Cooling	Forced air
Base	Coaxial, design for use with Svetlana SK300A socket

Svetlana Outline drawing



Dimensional Data

	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	189	193	7.46	7.58
B	21.7	22.7	0.855	0.895
C	90.4	93.6	3.56	3.68
D	61.3	70.8	2.41	2.79
E	22.8	23.8	9.0	9.38
F	118	122	4.66	4.78



Svetlana
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Radio Frequency Power Amplifier Class C FM

Absolute Maximum Ratings:

DC plate voltage	10,000	V
DC screen voltage	2,000	V
DC grid voltage	-750	V
DC plate current	5.0	A
Plate dissipation	15	kW
Screen dissipation	450	W
Grid dissipation	200	W

Typical Operation (Frequencies to 110 MHz)

DC plate voltage	7.5	10.0	kVdc
DC screen voltage	750	750	Vdc
DC grid voltage	-510	-300	Vdc
DC plate current	4.65	4.55	Adc
DC screen current	590	540	mA
DC grid current	300	270	mA
Driving Power	220	220	W
Plate dissipation	8.1	9.0	kW
Plate output power	26.7	36.5	kW

Minimum Cooling Air-Flow Requirements

Sea Level		
Plate Dissipation Watts	Air Flow CFM	Pressure Drop Inches of Water
7,500	230	0.7
12,500	490	2.7
15,000	645	4.6

Note:

At altitudes significantly above sea level, the flow rate must be increased for equivalent cooling. At 5,000 feet above sea level, both the flow rate and the pressure drop should be increased by a factor of 1.20, while at 10,000 feet both flow rate and pressure drop must be increased by 1.46.



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