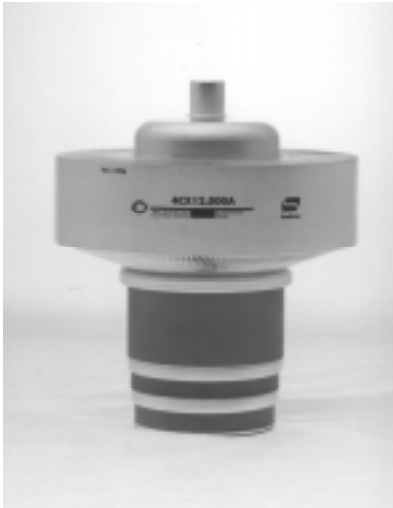


SVETLANA TECHNICAL DATA

4CX12,000A/8989 Radial Beam Power Tetrode



The Svetlana™ 4CX12,000A/8989 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 250MHz. The Svetlana 4CX12,000A/8989 has a directly-heated thoriated tungsten mesh filament for mechanical ruggedness and good VHF electrical performance. This modern mesh filament design is superior to the old hairpin design of the 1950's.

The Svetlana 4CX12,000A/8989 is manufactured in the Svetlana factory in St. Petersburg, Russia, and is designed to be a direct replacement for the 4CX12,000A/8989 manufactured in the United States.

Characteristics

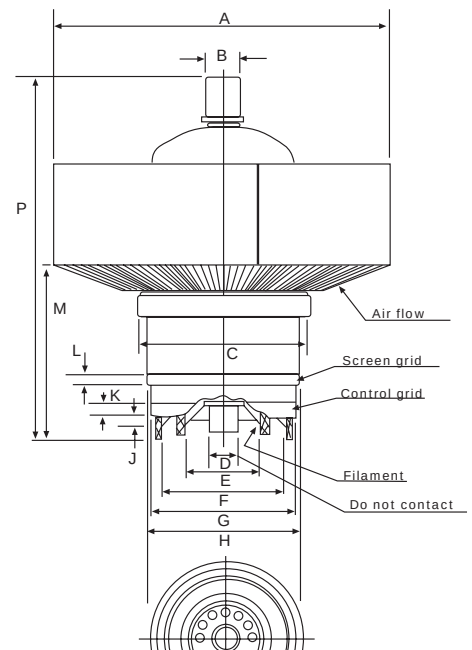
Electrical

Filament:	Thoriated-tungsten mesh	
Voltage	6.5 ± 0.3	V
Current @ 6.5V	105	A
Amplification factor (average)		
Grid to screen	6.7	
Direct interelectrode capacitances (grounded cathode):		
Cin	160	pF
Cout	18.5	pF
Cpk	1.0	pF
Direct interelectrode capacitance (grounded grid):		
Cin	70	pF
Cout	18.5	pF
Cgk	0.1	pF
Maximum frequency for full ratings (CW)	250	MHz

Mechanical

Maximum overall dimensions:		
Length	23.5 cm (9.24 in)	
Diameter	19.8 cm (7.76 in.)	
Net weight	6.4 kg (14 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	195.58	197.10	7.700	7.760
B	21.72	22.73	.855	.895
C	109.22	110.79	4.300	4.362
D	15.24	19.30	.600	.760
E	48.16	49.17	1.896	1.936
F	79.58	80.59	3.133	3.173
G	96.32	97.33	3.792	3.832
H	101.09	102.11	3.980	4.020
J	4.78	—	.188	—
K	4.78	—	.188	—
L	4.78	—	.188	—
M	120.65	122.68	4.750	4.830
P	225.55	234.69	8.880	9.240



Svetlana
ELECTRON DEVICES

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Svetlana 4CX12,000A/8989

Radial Beam Power Tetrode

Radio Frequency Power Amplifier Class C FM

Absolute Maximum Ratings:

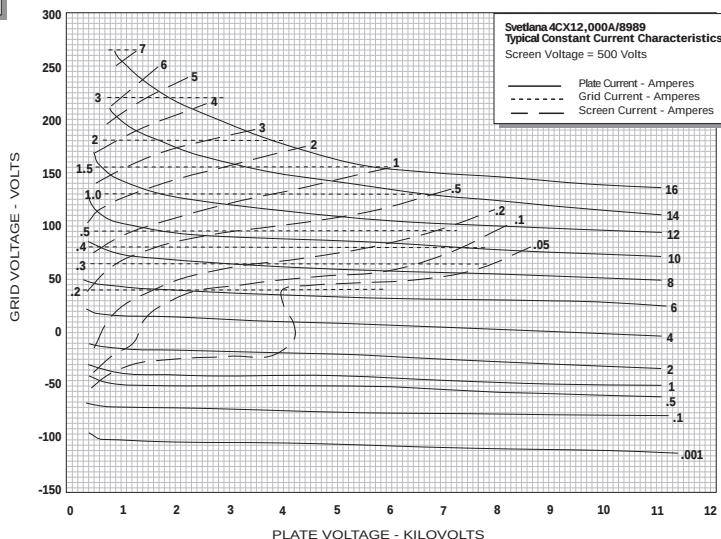
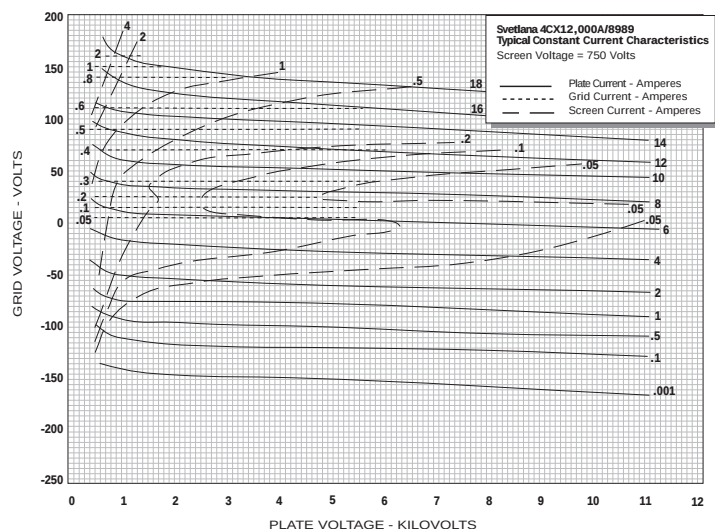
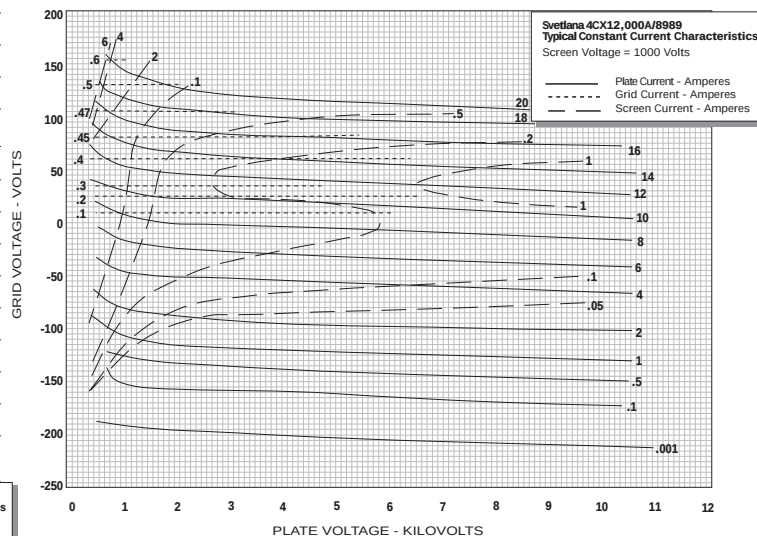
DC plate voltage	10,000	V
DC screen voltage	2,000	V
DC grid voltage	-500	V
DC plate current	3.5	A
Plate dissipation	12	kW
Screen dissipation	300	W
Grid dissipation	150	W

Typical Operation (Frequencies to 110 MHz)

DC plate voltage	8.0	8.0	10.0	kVdc
DC screen voltage	750	800	800	Vdc
DC grid voltage	-300	-400	-300	Vdc
DC plate current	1.6	2.58	2.81	Adc
DC screen current	115	120	130	mA
DC grid current	51	38	32	mA
Driving Power	165	250	275	W
Plate dissipation	1.8	4.9	5.6	kW
Plate output power	11	15.8	22.5	kW



Svetlana
ELECTRON DEVICES



Cooling

Inlet Air Temperature = 25°C

Plate Dissipation Watts	Sea Level		5,000 Feet		10,000 Feet	
	Air Flow CFM	Pressure Drop Inches of Water	Air Flow CFM	Pressure Drop Inches of Water	Air Flow CFM	Pressure Drop Inches of Water
7500	120	0.27	140	0.40	170	0.40
12500	260	1.12	310	1.14	380	1.29

Inlet Air Temperature = 50°C

Plate Dissipation Watts	Sea Level		5,000 Feet		10,000 Feet	
	Air Flow CFM	Pressure Drop Inches of Water	Air Flow CFM	Pressure Drop Inches of Water	Air Flow CFM	Pressure Drop Inches of Water
7500	160	0.41	190	0.45	230	0.56
12500	360	1.58	440	1.74	530	2.05