



# SVETLANA TECHNICAL DATA

## 3CX4500F3/YU108

### Medium-Mu Industrial Triode

**T**he Svetlana™ 3CX4500F3/YU108 is a high-performance ceramic/metal power triode designed for use in amplifier, oscillator, or modulator service. A modern mesh filament is used, replacing the old-fashioned hairpin construction. The improved mesh filament design ensures better mechanical rigidity and long lasting concentricity of the filament, contributing to longer life. Flexible leads connect to the filament terminals and a flange is connected to the grid. The flange provides a convenient way to mount the tube.

The Svetlana 3CX4500F3/YU108 is manufactured in the Svetlana Electron Devices complex in St. Petersburg, Russia. Svetlana has achieved the improved performance described above with exact replacement compatibility with the 3CX4500F3/YU108 manufactured in the United States.

### Characteristics

<b>Electrical</b>		
Filament:	<i>Thoriated-tungsten mesh</i>	
Voltage	$7.0 \pm 0.35$	V
Current @ 7.0V	78	A
Amplification factor (average)	22	
<i>Direct interelectrode capacitances, with filament grounded*:</i>		
Input	35.0	pF
Output	0.9	pF
Feedback	20	pF
Maximum frequency for full ratings (CW)	75 MHz	

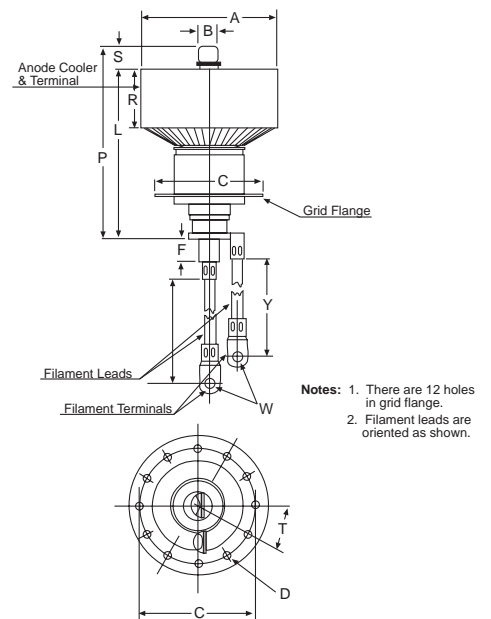
<b>Mechanical</b>		
Cooling	<i>Forced air</i>	
Base	<i>Flying leads/flange</i>	
Socketing	<i>None. Mounting flange</i>	
Operating position	<i>Vertical, base up or down</i>	
Maximum operating temperature	250° C	
<i>Maximum dimensions:</i>		
Length	46.83 cm (18.44 in.)	
Diameter	10.79 cm (4.25 in.)	
Net weight	2.9 kg (6.5 lb.)	

### RF Power Amplifier or Oscillator, Class C, FM or CW

<i>Maximum Ratings:</i>		
DC plate voltage	9,000	V
DC plate current	3.0	A
Plate dissipation	6000	W
Grid dissipation	300	W
DC grid voltage	-1000	V
DC grid current	0.8	A

\*Capacitance values are for a cold tube measured in a shielded fixture

### Svetlana Outline drawing



	Inches			Millimeters		
	Min.	Max.	Ref.	Min.	Max.	Ref.
A	6.000	6.125	—	152.4	155.58	—
B	.781	.843	—	19.8	21.40	—
C	4.230	4.255	—	107.4	108.1	—
D	.230	.265	—	5.84	6.73	—
F	.812	.937	—	20.6	21.2	—
G	3.855	3.885	—	97.9	98.7	—
L	—	3.325	—	—	84.5	—
P	8.000	9.000	—	203.2	228.6	—
R	—	2.57	—	—	65.1	—
S	1.000	1.125	—	25.4	28.6	—
T	—	—	30°	—	—	30°
W	.385	.395	—	9.78	10.1	—
Y	7.000	7.500	—	177.8	190.5	—
Z	7.000	7.500	—	177.8	190.5	—



**Svetlana**  
ELECTRON DEVICES

**Headquarters:**  
8200 South Memorial Parkway  
Huntsville, AL 35802  
USA  
Phone: 205 882 1344  
Fax: 205 880 8077

**Marketing & Engineering:**  
3000 Alpine Road  
Portola Valley, CA 94028  
USA  
Phone: 415 233 0429  
Fax: 415 233 0439

[www.svetlana.com](http://www.svetlana.com)

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## Typical Operation

(Frequencies to 30MHz)

DC plate voltage		8,000
V		
DC plate current	2.75	A
DC grid voltage*	-705	V
DC grid current	680	mA
Peak positive RF grid voltage*	346	V
Driving power*	710	W
Grid resistor	1040	Ohms
Plate input power	22,000	W
Plate dissipation	4,800	W
Plate output power	15,000	W
Approximate load impedance	1437	Ohms

\*Approximate values

Base-to-Anode Air Flow				
Anode Dissipation Watts	Sea Level		5000 Feet	
	Air Flow CFM	Pressure Drop Inches of Water	Air Flow CFM	Pressure Drop Inches of Water
4500	125	0.18	155	0.23

Anode-to-Base Air Flow <sup>1</sup>				
Anode Dissipation Watts	Sea Level		5000 Feet	
	Air Flow CFM	Pressure Drop Inches of Water	Air Flow CFM	Pressure Drop Inches of Water
4500	250	0.6	310	0.75

<sup>1</sup> When air is supplied in the anode-to-base direction, a minimum of 5 cfm must be directed into the filament-stem structure between the inner and outer filament terminals to maintain the base seals below 250° C. A separate air system is not required with base-to-anode airflow.

