Svetlana 833A Power Triode

The Svetlana™ 833A is a medium-mu power triode intended for use in RF amplifier, oscillator, or class B modulator service. The Svetlana 833A features rugged construction for high power RF transmitter applications. The envelope is fabricated from hard glass intended specifically for the high-temperature operation of transmitting tubes.

The internal tube parts are supported by low loss ceramic insulators for high-temperature operation and high voltage hold-off. The rugged grid structure is particularly well suited for industrial heating applications.

The Svetlana 833A is manufactured in the Ukraine. The strict manufacturing and quality control systems are similar to those at the Svetlana Complex in St. Petersburg where Svetlana ceramic power tubes and the majority of Svetlana glass power tubes are produced. The Svetlana 833A is designed to be a direct replacement in those applications originally designed for the original U.S. manufactured 833 and 833A.

Svetlana
ELECTRON DEVICES

Svetlana 833A

General Characteristics

Electrical

Filament:	Thoriated-tungsten	
Voltage (AC or DC)	10.0 +/- 0.5	V
Current	10	A
Amplification factor (average)	35	
Direct interelectrode capacitances (grounded filament):		
Grid to plate	6.3	pF
Grid to filament	12.3	pF
Plate to filament	8.5	pF
Maximum frequency for full ratings	30	MHz

Mechanical

Cooling	Radiation and convection or forced air
Socket	None. Post terminals
Plate and grid connector	Special, such as Svetlana AC-5 or RCA 208F1
Filament connectors	Special, such as Svetlana AC-4 or RCA 207F1
Operating position	Axis vertical, with filament posts up or down; Horizontal with plate in vertical plane (on edge)
Nominal dimensions:	
Diameter	116.8 mm (4.60 in.)
Overall height	219.2 mm (8.63 in.)
Net weight	454 gm

RF Power Amplifier and Oscillator, Class C Telegraphy or FM

Maximum ratings (Radiation & Convection cooling)

	CCS**	CAS***	
DC plate voltage	3000	3300	V
DC plate current	500	500m	A
Plate dissipation	300	350	W
DC plate input	1250	1500	W
DC grid current	100	00	mA
DC Grid Voltage	-500	-500	V

Typical Operation

(frequencies to 30 MHz)	ICAS**	
DC plate voltage	3000	V
DC grid voltage	-155	V
Peak Rf Grid Voltage	350	V
DC Plate current	500	mA
DC Grid current*	70	mA
Driving power	25	W
Output power	1150	W

* Approximate value ** Continuous Commercial Service

***Intermittent Commercial and Amateur Service

Power Triode

Audio Frequency Power Amplifier or Modulator, Class B, Grid Driven

Maximum Ratings (Radiation and Convection cooling)

	CCS**	ICAS***	
DC plate voltage	3000	3300	V
Maximum-signal DC plate current	500	500	mA
Plate dissipation	300	350	W
Maximum-signal plate input power	1125	1300	W

Typical operation (values are for two tubes)

	CCS**	ICAS***	
DC plate voltage	3000	3300	V
DC grid voltage	-70	-80	V
Zero-signal DC plate current*	100	100	mA
Maximum-signal DC plate current	750	780	mA
Peak AF grid-to-grid voltage	400	450	V
Maximum-signal driving power	20	30	W
Effective load resistance (plate to plate)	9.5K	10.5K	Ohms
Maximum-signal power output	1650	1900	W

Plate-Modulated RF Power Amplifier, Class C Telephony

Maximum Ratings (Radiation and Convection cooling)

	CCS**	ICAS***	
DC plate voltage	2500	3000	V
DC plate current	400	400	mA
Plate dissipation	200	250	W
DC plate input	835	000	W
DC grid current	100	100	mA
DC grid voltage	-500	-500	V

Typical Operation (Carrier conditions, to 30 MHz)

	CCS**	ICAS***	
DC plate voltage	2500	3000	V
DC plate current	335	335	mA
DC grid voltage	-300	-240	V
Peak RF grid voltage	460	410	V
DC grid current*	75	70	mA
Driving power	30	26	W
Output power	635	800	W

** Approximate value ** Continuous Commercial Service*

****Intermittent Commercial and Amateur Service*

Svetlana 833A

Maximum Ratings for Operation with Forced-Air Cooling (Frequencies to 20 MHz, RF Power Amplifier or Oscillator, Class C Telephony or FM)

	CCS**	ICAS***	
DC plate voltage	*4000*	*4000*	*V*
DC plate current	*500*	*500*	*mA*
Plate dissipation	*400*	*450*	*W*
DC plate input	*1800*	*2000*	*W*
DC grid voltage	*-500*	*-500*	*V*
DC grid current	*100*	*100*	*mA*

Audio Frequency Power Amplifier or Modulator, Class B, Grid Driven

	CCS**	ICAS***	
DC plate voltage	*4000*	*4000*	*V*
DC plate current	*500*	*500*	*mA*
Plate dissipation	*400*	*450*	*W*
DC plate input	*1600*	*1800*	*W*

Plate-Modulated RF Power Amplifier, Class C Telephony

	CCS**	ICAS***	
DC plate voltage	*3000*	*4000*	*V*
DC plate current	*450*	*450*	*mA*
Plate dissipation	*270*	*350*	*W*
DC plate input	*1250*	*1800*	*W*
DC grid voltage	*-500*	*-500*	*V*
DC grid current	*100*	*100*	*mA*

** Approximate value ** Continuous Commercial Service*

****Intermittent Commercial and Amateur Service*

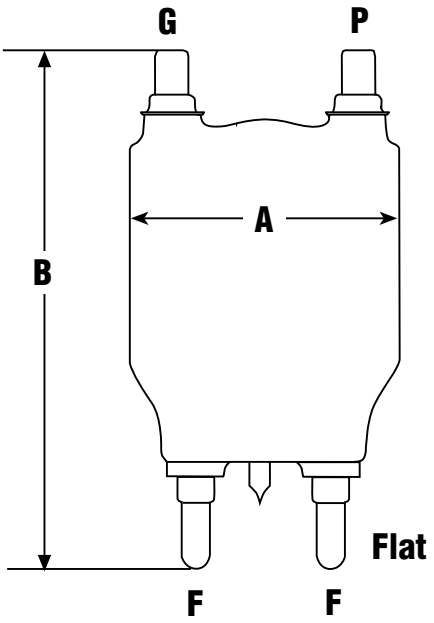
Power Triode

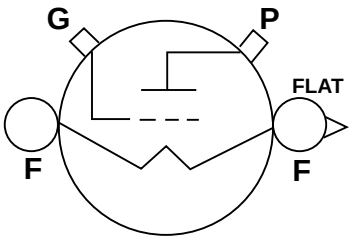
Electrical Application

At frequencies above 30 Mhz plate input power with radiation and convection cooling should be reduced according to the following table:

Frequency (Mhz)	Plate voltage and plate input (Class C operation)
50	90%
75	72%

At maximum plate-dissipation ratings the plate shows an orange-red color.





Mechanical Application

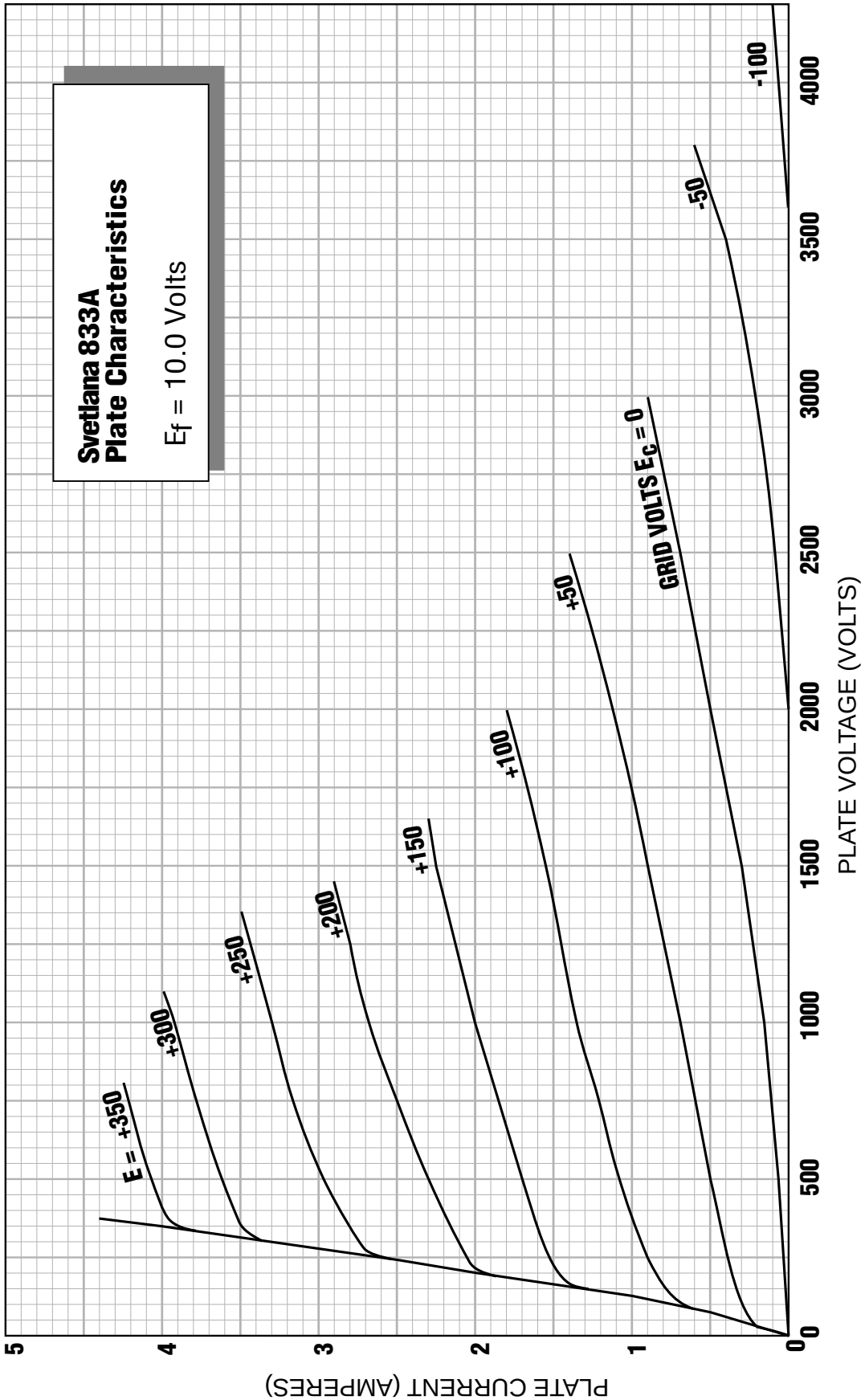
Mounting The Svetlana 833A may be operated with filament posts up or down, or horizontally with plate in vertical plane.

Dimensional Data

Dim.	Millimeters	Inches
A	116.6	4.59
B	223.8	8.81

Note: Use one Svetlana AC-5 plate connector and one Svetlana AC-5 grid connector. Use two Svetlana AC-4 filament connectors.

Svetlana 833A



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