Svetlana 3CX300A1 Audio Power Triode

The Svetlana 3CX300A1 is a ceramic-metal forced-air-cooled power triode intended for use in high-end audio amplifier equipment requiring high power, low plate resistance and exceptional linearity. Ceramic-metal transmitting-tube construction gives the 3CX300A1 extreme ruggedness and freedom from microphonics. The large cathode and the grid are rigidly mounted on coaxial cones terminating in rugged ceramic-metal seals. The anode is machined from solid copper, to insure high power handling capability. The 3CX300A1 is suitable for single-ended Class A1 or push-pull Class A1 or AB1 operation. The Svetlana 3CX300A1 is manufactured at the Svetlana factory in St. Petersburg, Russia, using the same processes and materials as Svetlana's large RF power tubes. Thus, quality and reliability are assured to strict transmitting-tube standards.

General Characteristics

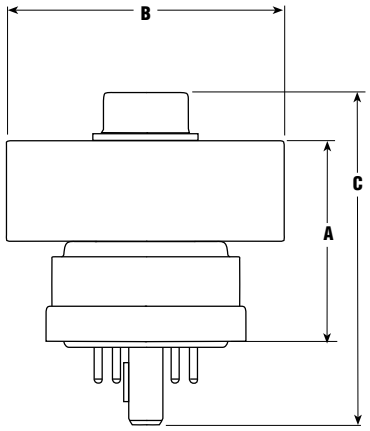
Electrical

Cathode:	*Oxide-coated, unipotential*	
Voltage (AC or DC)	*6.3±0.3*	*V*
Current	*2.65*	*A*
Heater-cathode voltage (max)	*±100*	*Vpeak*
Amplification factor	*9*	
Transconductance	*20,000*	*µS*
Plate resistance	*450*	*ohms*
Interelectrode capacitances (typical), with cathode grounded :		
Input	*25*	*pF*
Output	*1*	*pF*
Feedback	*10*	*pF*

Mechanical

Cooling	*Radiation and convection, or forced-air (see below)*
Base	*Ceramic, special 8-pin with center contact*
Basing diagram	*see below*
Socket	*Svetlana SK2A or equivalent*
Anode connector	*Svetlana AC-5 or equivalent*
Operating position:	*Any (vertical for convection cooling)*
(Note: for operation at >30W dissipation, forced-air cooling is required---consult cooling data on reverse.)	
Nominal dimensions:	
Diameter	*42 mm (1.656 in)*
Base to top	*52 mm (2.055 in)*
Overall height	*72 mm (2.836 in)*
Net weight	*200 gm*

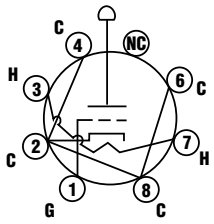
Svetlana 3CX300A1 Outline drawing



Dimensional Data

Dim.	Millimeters	Inches
A	52	2.055
C	72	2.836
B	42	1.656

Base pin connections bottom view



Top Cap= Anode
Center Guide Pin on Base= Control Grid

SM

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Maximum Ratings

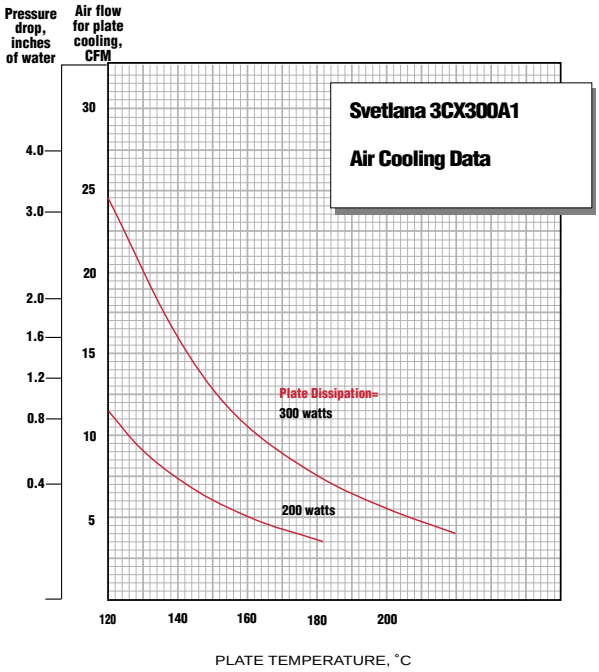
DC plate voltage	1800	V
Maximum signal DC plate current	470	mA
Plate dissipation w/forced-air cooling	300	W
Plate dissipation w/convection cooling	30	W
Grid dissipation (maximum)	1	W
Operating temperature (metal/ceramic seals or metal core)	250	C
Control grid maximum negative voltage	-400	V

Typical Operation, Class A, Audio Amplifier (single tube)

Plate voltage	500	V
Grid voltage	-55	V
Peak grid drive	120	VP-P
Plate current, no signal	80	mA
Plate current, max signal	95	mA
Effective load resistance	1600	ohms
Distortion at 1 watt into 8 ohms	0.67	%
Power output at 5% distortion	15	W

Typical Operation, Class AB1, Audio Power Amplifier, Push-Pull

Plate voltage	500	V
Grid voltage	-45	V
Peak grid drive	100	VP-P
Plate current, no signal (both tubes)	300	mA
Load resistance, plate-to-plate	2000	ohms
Power output	40	W



The flow rate for base cooling must be determined for satisfactory cooling to obtain base temperature not more than 220˚C.

If the temperature of ambient air will increase, air flow must be increased in accordance with Table 1.

Table 1

Ambient Air Temperature, ˚C	25	40	55	70
Correction Factor	1	1.2	1.5	1.9