

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

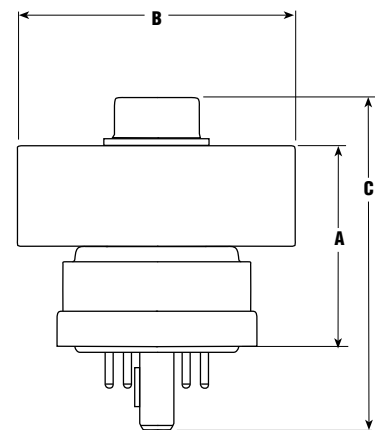
Electrical

Cathode:	Oxide-coated, unipotential	
Voltage (AC or DC)	6.3±0.3	V
Current	2.65	A
Heater-cathode voltage (max)	±100	V _{peak}
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

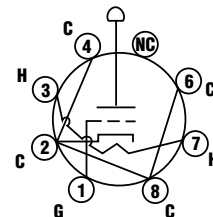
Svetlana 3CX300A1 Outline drawing



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



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

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Maximum Ratings

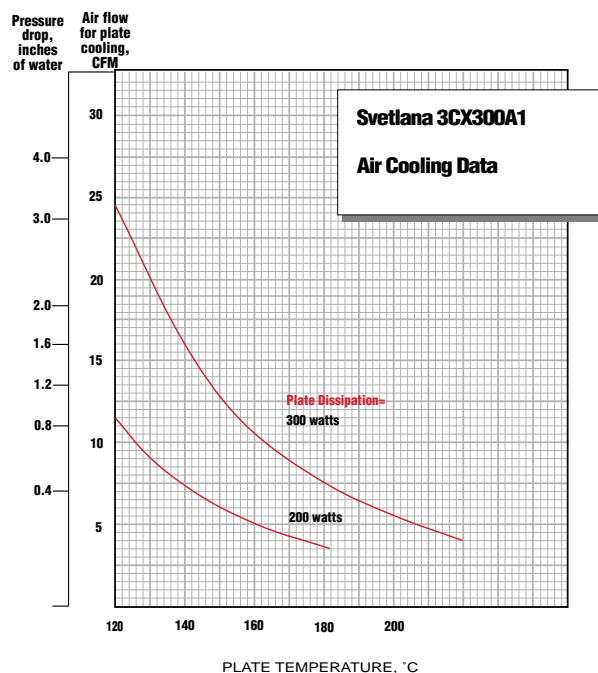
DC plate voltage	1800	V
Maximum signal DC plate current	470	mA
Plate dissipation w/forced-air cooling	300	W
Plate dissipation w/convection cooling	30	W
Grid dissipation (maximum)	1	W
Operating temperature (metal/ceramic seals or metal core)	250	C
Control grid maximum negative voltage	-400	V

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

