
# SVETLANA TECHNICAL DATA

# 8560AS

## Conduction-cooled Radial Beam Power Tetrode

The Svetlana™ 8560AS is a compact metal/ceramic radial beam tetrode having a plate dissipation rating of 200 Watts with conduction cooling. The 8560AS is intended for Class AB SSB linear and FM CW RF amplifier service. The 8560AS has an indirectly-heated oxide cathode.

The inside-contact surface of the screen-grid ring is carefully controlled to mate with Motorola Micor® equipment sockets. The welded plate cap is rugged so it will not be damaged when used with tube removal devices.

The Svetlana 8560AS is manufactured in the Svetlana factory in St. Petersburg, Russia, and is designed to be a direct replacement for the 8560AS manufactured in the United States.

## Characteristics

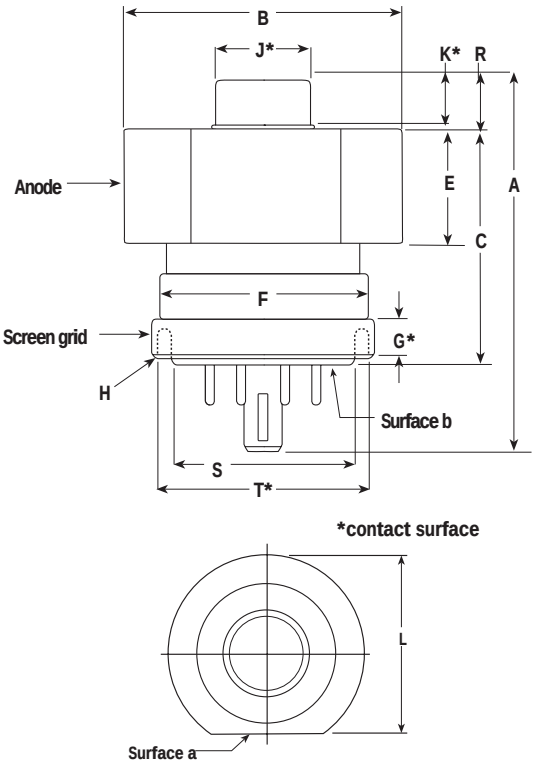
### Electrical

| | Min. | Nom. | Max. |
|---|---|---|---|
| *Heater Voltage (AC or DC)* | *5.7* | *6.0* | *6.3 V* |
| *Cathode: Oxide-coated, unipotential* | | | |
| *Cathode-to-heater potential, max.* | | | *± 150 V* |
| *Direct interelectrode capacitances, max., Grounded cathode:* | | | |
| *Input* | | | *15.7 pF* |
| *Output* | | | *4.5 pF* |
| *Feedback* | | | *0.04 pF* |
| *Maximum frequency for full ratings (CW)* | | | *500 MHz* |

### Mechanical

| | |
|---|---|
| *Operating Position* | *Any* |
| *Base* | *Special 9-pin* |
| *Recommended socket* | *Svetlana SK2A or Eimac/Johnson SK-660 series* |
| *Maximum dimensions:* | |
| *Height* | *62.1 mm (2.445 in.)* |
| *Diameter* | *41.4 mm (1.630 in.)* |
| *Maximum operating temperature; ceramic to metal seals* | *250° C* |
| *Cooling* | *Conduction* |
| *Maximum net weight* | *235 g (8.3 oz.)* |
| *Approximate shipping weight* | *700 g (1.5 lb.)* |

## Svetlana Outline drawing




### Dimensional Data

| Dim. | Millimeters | | Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 58.55 | 62.10 | 2.305 | 2.445 |
| B | 41.15 | 41.40 | 1.620 | 1.630 |
| C | 38.86 | 40.39 | 1.530 | 1.590 |
| E | 16.76 | 18.80 | 0.660 | 0.740 |
| F | _ | 35.71 | _ | 1.406 |
| G | 4.75 | _ | 0.187 | _ |
| H | Standard base to fit MICOR® equip. | | | |
| J | 14.20 | 14.53 | 0.559 | 0.572 |
| K | 6.10 | _ | 0.240 | _ |
| L | 38.74 | 39.12 | 1.525 | 1.540 |
| N | 89° | 91° | 89° | 91° |
| R | 6.86 | 7.87 | 0.270 | 0.310 |
| S | _ | 30.33 | _ | 1.194 |
| T | 33.98 | _ | 1.338 | _ |

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Svetlana
ELECTRON DEVICES

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# Conduction-cooled Radial Beam Power Tetrode

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## Radio Frequency Linear Amplifier, Class-AB$_1$, SSB Operation

### Maximum ratings

| | |
|---|---|
| *DC plate voltage* | *2000 V* |
| *DC screen voltage* | *400 V* |
| *DC plate current* | *250 mA* |
| *Plate dissipation* | *200 W* |
| *Screen dissipation* | *12 W* |
| *Grid dissipation* | *2 W* |

### Typical Operation

*(Peak-envelope conditions except where noted, grid driven)*

| | | | | |
|---|---|---|---|---|
| *DC plate voltage* | *1000* | *1500* | *2000* | *V* |
| *DC screen voltage* | *350* | *350* | *350* | *V* |
| *DC grid voltage** | *-55* | *-55* | *-55* | *V* |
| *Zero-signal plate current* | *100* | *100* | *100* | *mA* |
| *Single tone plate current* | *250* | *250* | *250* | *mA* |
| *Two-tone plate current* | *190* | *190* | *190* | *mA* |
| *Single-tone screen current*** | *10* | *8* | *5* | *mA* |
| *Two-tone screen current*** | *2* | *-1* | *-2* | *mA* |
| *Single-tone grid current*** | *0* | *0* | *0* | *mA* |
| *Peak rf grid Voltage*** | *50* | *50* | *50* | *V* |
| *Plate output power* | *120* | *215* | *300* | *W* |
| *Resonant load impedance* | *2000* | *3000* | *4000* | *Ohms* |

** Adjust to specified zero-signal dc plate current  ** Approximate values*

## Electrical Application

**Plate operation** The maximum rated plate dissipation is 200 Watts. This rating may be exceeded for brief periods during circuit adjustment without damage to the tube. The tube and associated circuits should be protected in the event of an internal arc by including a series current limiting resistance in the DC lead from the power supply to the plate. Its value must be 25 Ohms or more. The resistor should be capable of withstanding the high surge current caused by the arc. It should not be used as a fuse.

## Mechanical Application

**Mounting** The 8560AS may be mounted in any position. The heat sink configuration may determine the mounting position of the tube. Ideally, the anode should be clamped to a heat sink or insulating thermal link and the socket should be semi-floating, mechanically.

**Socket** A socket designed to fit the JEDEC B8-236 base should be used. The Svetlana 8560AS base dimensions are controlled to mate with Motorola MICOR® equipment. For new designs, the Svetlana SK2A or Johnson/Eimac SK-660 series is suggested. The Svetlana SK2A does not include a screen by-pass capacitor.

**Cooling** Sufficient cooling must be provided for the anode, base seals and body seals to maintain operating temperatures below the rated maximum values. Total conduction cooling or a combination of forced air and conduction cooling may be used. The use of sufficient pressure and thermal-conducting compound between the anode flat and the heat sink or thermal link is necessary for good heat transfer.

**Svetlana 8560AS Bottom View**