The Svetlana™ GMI-42B is a metal-ceramic shielded-grid triode intended for use as a shunt regulator or pulse modulator in high-voltage systems. It features anode operating voltage of 33 kV and a plate dissipation of 500 watts using forced-air cooling. The GMI-42B has a shielding electrode connected internally to the cathode via short, low-impedance straps. This design permits operation with low grid current, and results in favorably low grid-anode capacitance. The presence of the ground-potential shield adjacent to the anode protects the cathode and the grid from damage due to transient arcs.

Features:
--- extremely rugged
--- plate currents up to 33 amps (duty cycle 0.2%)

**Characteristics**

**Electrical**

- **Cathode**: Oxide-coated, unipotential
- **Voltage (AC or DC)**: 26.0 (±2.5) V
- **Current**: 3400 (±250) mA
- **Heating time**: 3 min
- **Heater-cathode voltage, peak**: ±100 V
- **Amplification factor (nominal)**: <10
- **Transconductance (nominal)**: 400 µS
- **Interelectrode capacitances (typical), with cathode grounded**:
  - **Input**: <130 pF
  - **Output**: <25 pF
  - **Feedback**: <2 pF

**Mechanical**

- **Basing diagram**: see below
- **Socket**: customer-fabricated
- **Anode cap**: approx. 11/16 in (18 mm) diameter
- **Anode connector**: Svetlana AC-5 (modified)
- **Operating position**: Any
- **Cooling**: Forced-air (see diagram)

**Nominal dimensions**:

- **Height from base to anode top**: 95 mm (3 3/4 in)
- **Diameter of anode cooler**: 91 mm (3 9/16 in)
- **Outside diameter of base**: 90 mm (3 17/32 in)
- **Diameter of cathode and heater pins**: 5 mm (3/16 in)
- **Length of cathode and heater pins**: 9 mm (3/8 in)
- **Diameter of grid pin**: 4 mm (5/32 in)
- **Length of grid pin**: 9 mm (3/8 in)
- **Overall height**: 132 mm (5 3/16 in)
- **Net weight**: 1.2 kg

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![Svetlana Outline drawing](image)
Svetlana GMI-42B
Shielded-Grid Pulse Triode

Maximum ratings

- Anode voltage: 33 kV
- Anode dissipation: 500 W
- Cathode current, pulse (max duration 50 µS at max current): 33 A
- Grid voltage, negative: -600 V
- Grid voltage, positive (in pulse): 1400 V
- Maximum grid dissipation: 25 W
- Seal temperature: 250 °C

Typical operation as a switch:

- Anode voltage: 2.5 kV
- Grid voltage, negative: -200 V
- Grid voltage when switched on, positive: 1350 V
- Pulse duration: 10 µS
- Duty factor: 0.002
- Anode current when switched on: 30 A
- Grid current when switched on: <4.5 A

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**Typical Plate Characteristics**

<table>
<thead>
<tr>
<th>Plate Voltage (Ep, kV)</th>
<th>Plate Current (Ip, A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
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<tr>
<td>1.5</td>
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**Pressure drop, kPa**

- 1.5
- 1.0
- 0.5

**Air flow, m³/sec**

- 1.5
- 1.0
- 0.5

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**Air Cooling Data**

- Pressure: 500 W
- 400 W
- 300 W
- 200 W

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**Typical Plate Characteristics**

- Plate Current
- Grid Current

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- 1.0
- 0.5

**Air flow, m³/sec**

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