

SVETLANA TECHNICAL DATA

GMI-42B Shielded-Grid Pulse Triode



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

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

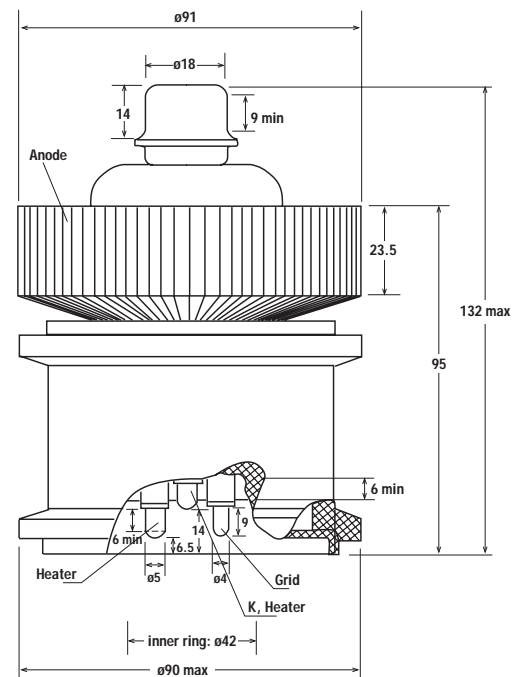
Mechanical

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

Nominal dimensions:

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

Svetlana Outline drawing



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Maximum ratings

Anode voltage	33	kV
Anode dissipation	500	W
Cathode current, pulse (max duration 50 μ S 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	$^{\circ}$ 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	μ S
Duty factor	0.002	
Anode current when switched on	30	A
Grid current when switched on	<4.5	A

