

TETRODE

GU-39B-1

The GU-39B-1 tetrode is used as a power amplifier in stationary short-wave transmitters.

GENERAL

Cathode: directly heated, carbonized thoriated tungsten.
 Envelope: glass-to-metal.
 Cooling: forced air.
 Height: at most 293 mm.
 Diameter: at most 128 mm.
 Mass: at most 8 kg.

OPERATING ENVIRONMENTAL CONDITIONS

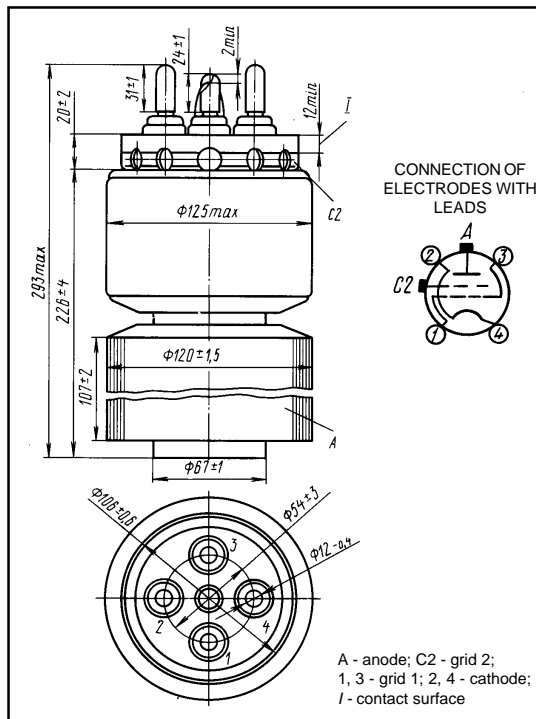
Ambient temperature, °C **-10 to +55**
 Relative humidity at up to +25 °C, % **98**

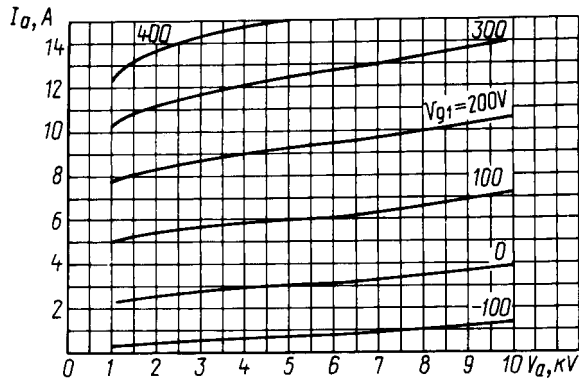
BASIC DATA Electrical Parameters

Filament voltage, V **6.3**
 Filament current, A **85-105**
 Mutual conductance (at anode voltage 3 kV, grid 2 voltage 1 kV, anode currents 1.5 and 2 A), mA/V **20-28**
 Gain coefficient (grid 1 -grid 2) (at anode voltage 3 kV, grid 2 voltages 1 and 1.2 kV, anode current 1.5 A) **6-9**
 Anode current (at anode voltage 3 kV, grid 1 voltage -100 V, grid 2 voltage 1 kV), A, at most **1**
 Negative bias voltage (at anode voltage 8.5 kV, grid 2 voltage 1.2 kV, anode current 0.5 A), V **140-180**
 Interelectrode capacitance, pF:
 input, at most **80**
 output, at most **29**
 transfer, at most **0.7**
 Output power (at anode voltage 10 kV, operating frequency 30 MHz), kW, at least **13**

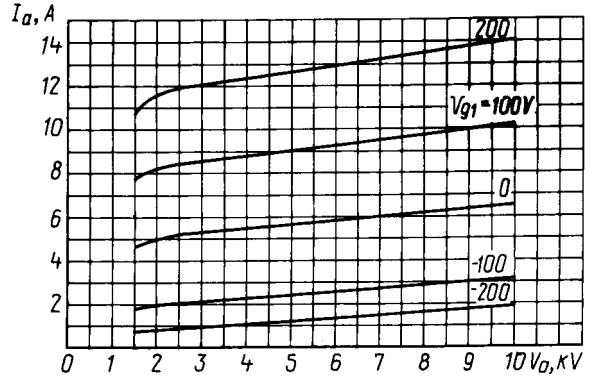
Limit Operating Values

Filament voltage, V **6-6.6**
 Anode voltage (DC), kV **10**
 Negative grid 1 voltage, V **800**
 Grid 2 voltage (DC), kV **2**
 Filament starting current, A **150**
 Dissipation, W:
 anode **8-10³**
 grid 2 **450**
 grid 1 **200**
 Operating frequency at output power at least 13kW, MHz **30**
 Cutoff frequency, MHz **100**
 Anode temperature, °C **200**
 Temperature at envelope, stem and seals, °C **150**

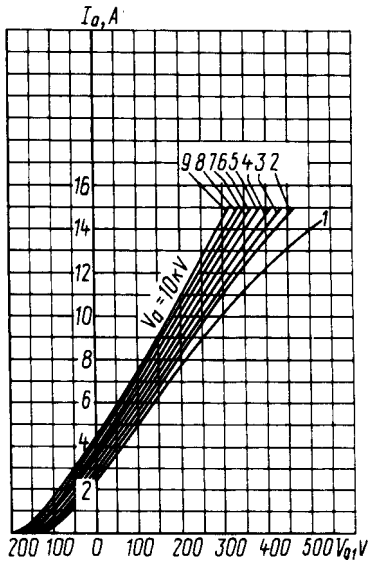




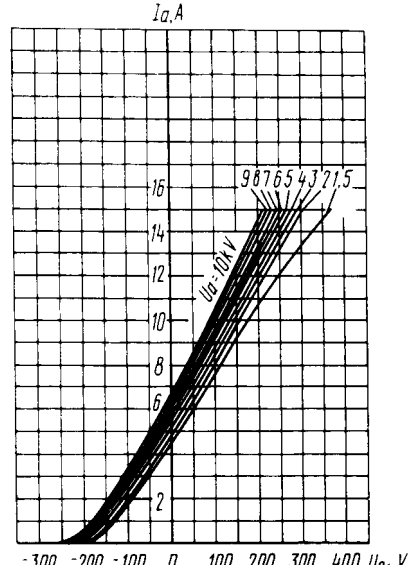
Averaged Anode Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1 \text{ kV};$



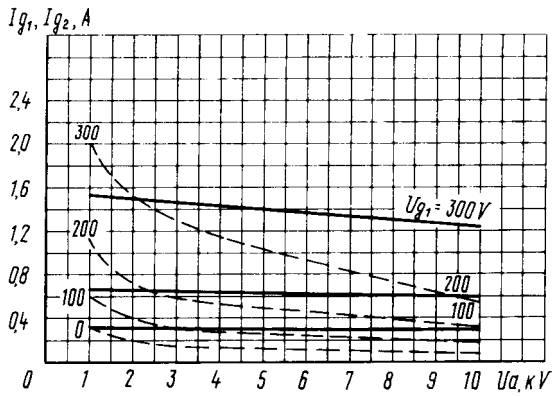
Averaged Anode Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1.5 \text{ kV};$



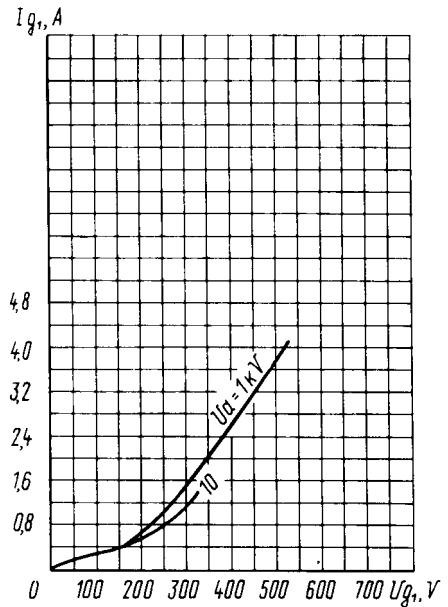
Averaged Anode-Grid Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1 \text{ kV};$



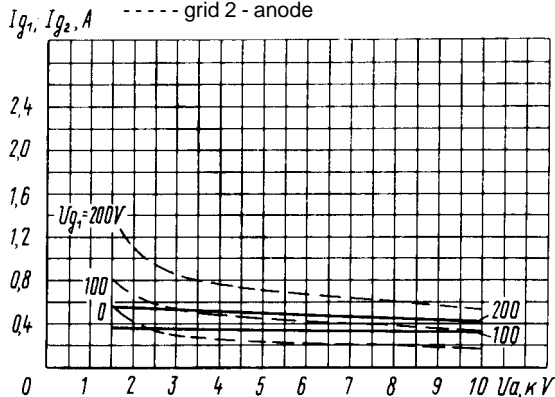
Averaged Anode-Grid Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1.5 \text{ kV};$



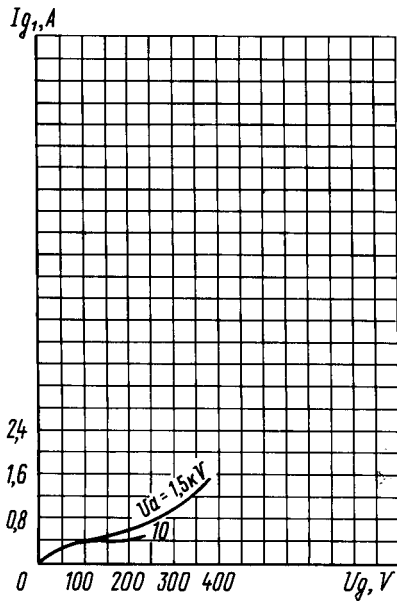
Averaged Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1 \text{ kV};$
 — grid 1 - anode;
 - - - grid 2 - anode



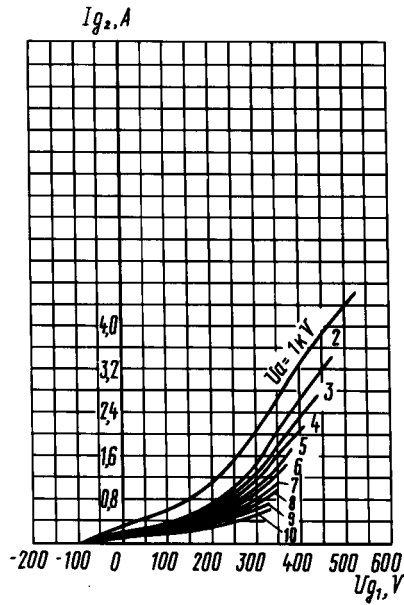
Averaged Grid 1 Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1 \text{ kV};$



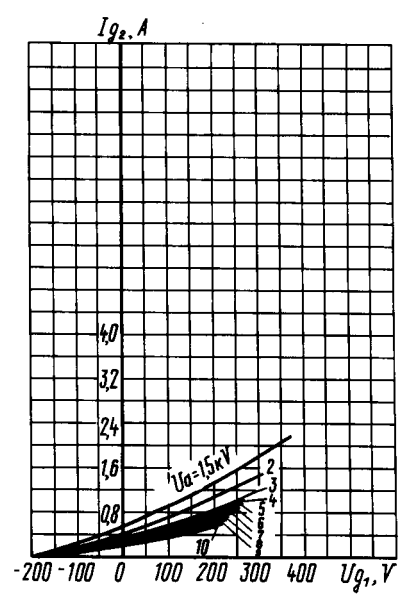
Averaged Characteristic Curves:
 $U_1 = 6.3 \text{ V}; U_{a2} = 1.5 \text{ kV};$
 — grid 1 - anode;
 - - - grid 2 - anode



Averaged Grid 1 Characteristic Curves:
 $U_1 = 6.3 \text{ V}$; $U_{g2} = 1.5 \text{ kV}$



Averaged Grid 2 Characteristic Curves:
 $U_1 = 6.3 \text{ V}$; $U_{g2} = 1 \text{ kV}$



Averaged Grid 2 Characteristic Curves:
 $U_1 = 6.3 \text{ V}$; $U_{g2} = 1.5 \text{ kV}$