

TETRODE

GU-78B

The GU-78B tetrode is used for power amplification in distributed amplifiers and single-sideband signal amplifiers at frequencies up to 250 MHz, in RF industrial engineering equipment.

GENERAL

Cathode: indirectly heated, oxide-coated.
 Envelope: metal ceramic, with ring leads of cathode, grid 2 and anode and pin leads of grid 1.
 Cooling: forced air.
 Height: at most 120 mm.
 Diameter: at most 111 mm.
 Mass: at most 1.8 kg.

OPERATING ENVIRONMENTAL CONDITIONS

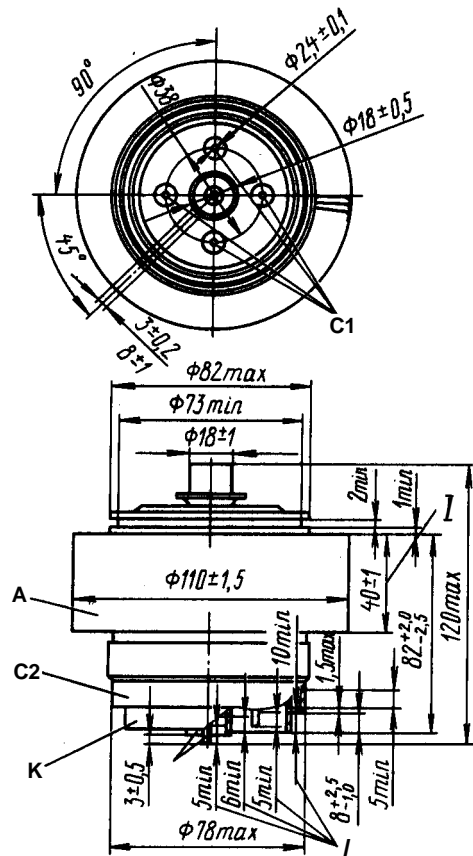
Vibration loads:
 frequencies, Hz 1-60
 acceleration, m/s² 20
 Multiple impacts with acceleration, m/s² 150
 Ambient temperature, °C -60 to +70
 Relative humidity at up to +25 °C without moisture condensation, % 98

BASIC DATA Electrical Parameters

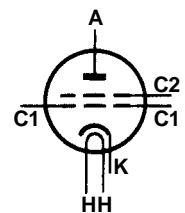
Heater voltage (AC or DC), V 27
 Heater current, A 3.4-4
 Anode voltage, kV 1.7
 Grid 2 voltage, V 300
 Negative grid 1 bias voltage, V 51-25
 Negative cutoff voltage (at anode voltage 3 kV, anode current 20 mA), absolute value, V -150
 Anode current, A 1.5
 Anode current at zero grid 1 voltage (at anode voltage 250 V), mA, at most 4.2
 Grid 2 current at zero grid 1 voltage (at anode voltage 250 V), mA, at most 0.9
 Mutual conductance, mA/V 40-80
 Output power under amplification of class AB1, kW:
 at heater voltage 27 V, at least 2.5
 at heater voltage 25.7 V, at least 2.2
 Common-cathode interelectrode capacitance, pF:
 input 100-150
 output 15-30
 transfer, at most 0.25

Limit Operating Values

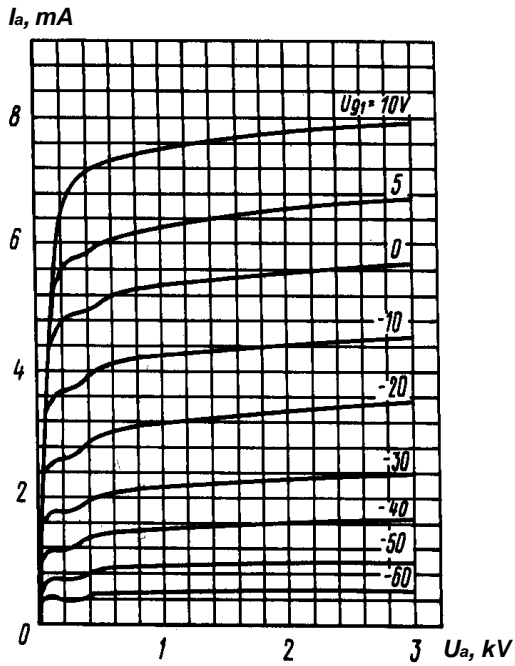
Heater voltage (AC or DC), V 25.5-28.3
 Anode voltage, V:
 DC 3200
 instantaneous value 6200
 Grid 2 voltage (DC), V 350
 Negative grid 1 voltage (DC, absolute value), V 150
 Cathode-heater voltage (either polarity, absolute value), V 150
 Cathode current (DC component), mA 2200
 Grid 1 current (DC component), mA 25
 Dissipation, W:
 anode 2500
 grid 2 30
 grid 1 1
 Operating frequency, MHz 250
 Cathode heating time, s 240
 Envelope temperature at hottest point, °C 200



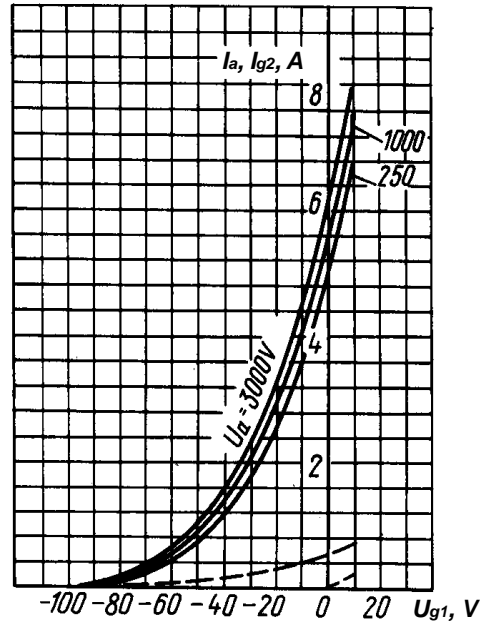
CONNECTION OF ELECTRODES WITH LEADS



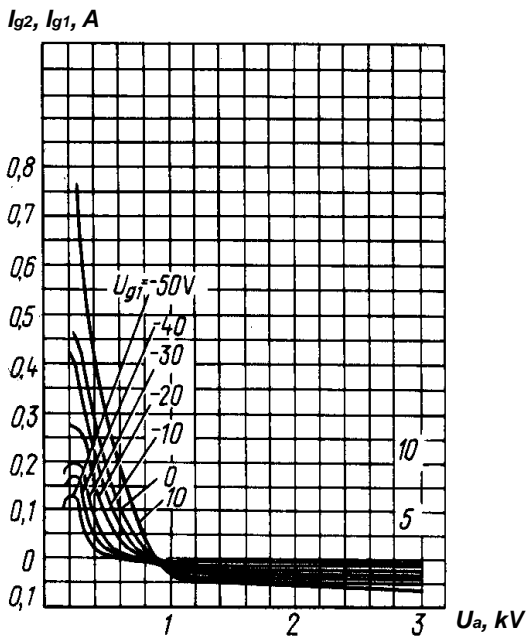
C1 - grid 1; C - grid 2;
 A - anode; K - cathode;
 H - heater; I - contact surfaces



Averaged Anode Characteristic Curves;
 $U_1 = 27 V$; $U_{g2} = 300 V$



Averaged Characteristic Curves;
 $U_1 = 27 V$; $U_{g2} = 300 V$;
 — anode-grid;
 - - - - grid 2;
 - grid 1



Averaged Characteristic Curves;
 $U_1 = 27 V$; $U_{g2} = 300 V$;
 — I_{g2} ;
 - - - - I_{g1}