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

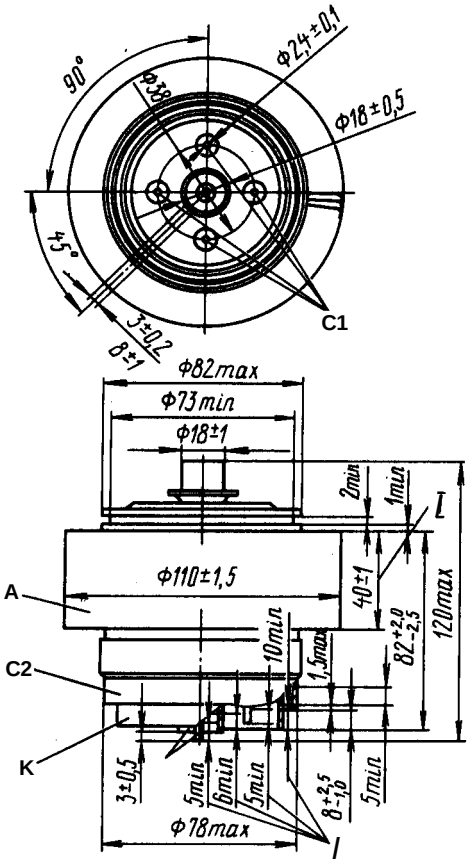
Vibration loads:	
frequencies, Hz	**1-60**
acceleration, m/s^2	**20**
Multiple impacts with acceleration, m/s^2	**150**
Ambient temperature, °C	**-60 to +70**
Relative humidity at up to +25 °C without moisture condensation, %	**98**

BASIC DATA Electrical Parameters

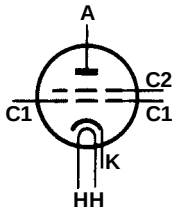
Heater voltage (AC or DC), V	**27**
Heater current, A	**3.4-4**
Anode voltage, kV	**1.7**
Grid 2 voltage, V	**300**
Negative grid 1 bias voltage, V	**51-25**
Negative cutoff voltage (at anode voltage 3 kV, anode current 20 mA), absolute value, V	**-150**
Anode current, A	**1.5**
Anode current at zero 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

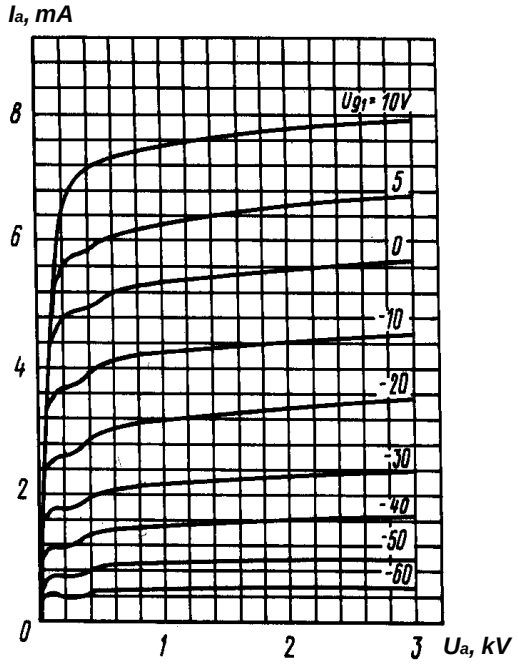
Heater voltage (AC or DC), V	**25.5-28.3**
Anode voltage, V:	
DC	**3200**
instantaneous value	**6200**
Grid 2 voltage (DC), V	**350**
Negative grid 1 voltage (DC, absolute value), V	**150**
Cathode-heater voltage (either polarity, absolute value), V	**150**
Cathode current (DC component), mA	**2200**
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**



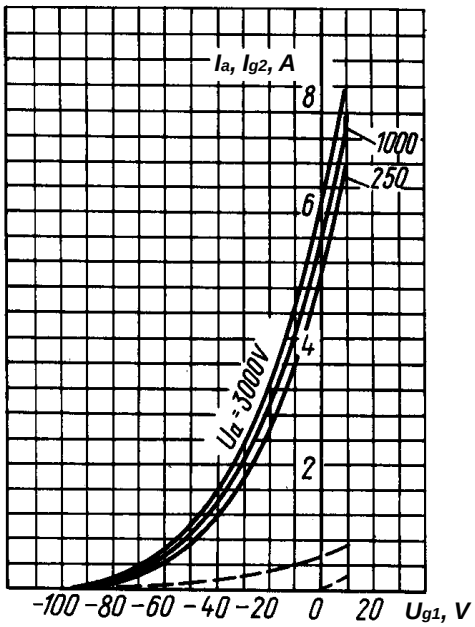
CONNECTION OF ELECTRODES WITH LEADS



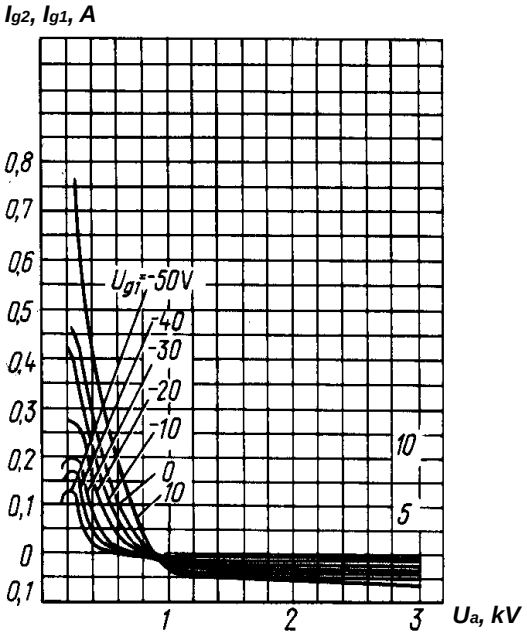
C1 - grid 1; C - grid 2; A - anode; K - cathode; H - heater; *I* - contact surfaces



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}