

TRIODE

GI-7B(GI-70B)

The GI-7B (GI-70B) microwave triode operates as an oscillator and an amplifier in continuous-wave or pulsed mode with anode modulation in the centimetric and decimetric wavelength ranges.

The triode is available in two variants differing in the type of cooling: the GI-7B with a heat sink for forced air cooling and the GI-70B with no heat sink for other systems of cooling.

GENERAL

Cathode: indirectly heated, oxide-coated.

Envelope: metal-ceramic.

Cooling: forced air.

Height: 110.5 mm with heat sink, 97 mm with no heat sink.

Diameter: 65 mm with heat sink.

Mass: at most 330 g with heat sink, 170 g with no heat sink.

OPERATING ENVIRONMENTAL CONDITIONS

Vibration loads:

frequencies, Hz

5-600

acceleration, m/s²

59

Multiple impacts with acceleration, m/s²

343

Ambient temperature, °C

-60 to +100

Relative humidity at up to +40 °C, %

98

BASIC DATA ELECTRICAL PARAMETERS

Heater voltage, V

12.6

Heater current, A

1.8-2.05

Mutual conductance (at anode voltage 1.2 kV, grid voltage change by 1 V, anode current 150 mA), mA/V

20-26

Penetration factor (at anode voltage 1.3 kV, anode voltage change 200 V, anode current 150mA), %

1.2-1.8

Operating point (negative grid voltage at anode voltage 1.3 kV, anode current 150 mA), V

12.5-7.5

Interelectrode capacitance, pF:

input

10-12

output

0.055-0.095

transfer

4-5.2

Warm up time (at anode voltage 400 V), s, at most

90

Output power:

in CW operation (at anode voltage 1.05 kV,

anode current 300mA, wavelength 18.5cm), W, at least

30

in pulsed operation (at peak anode voltage 9 kV, anode

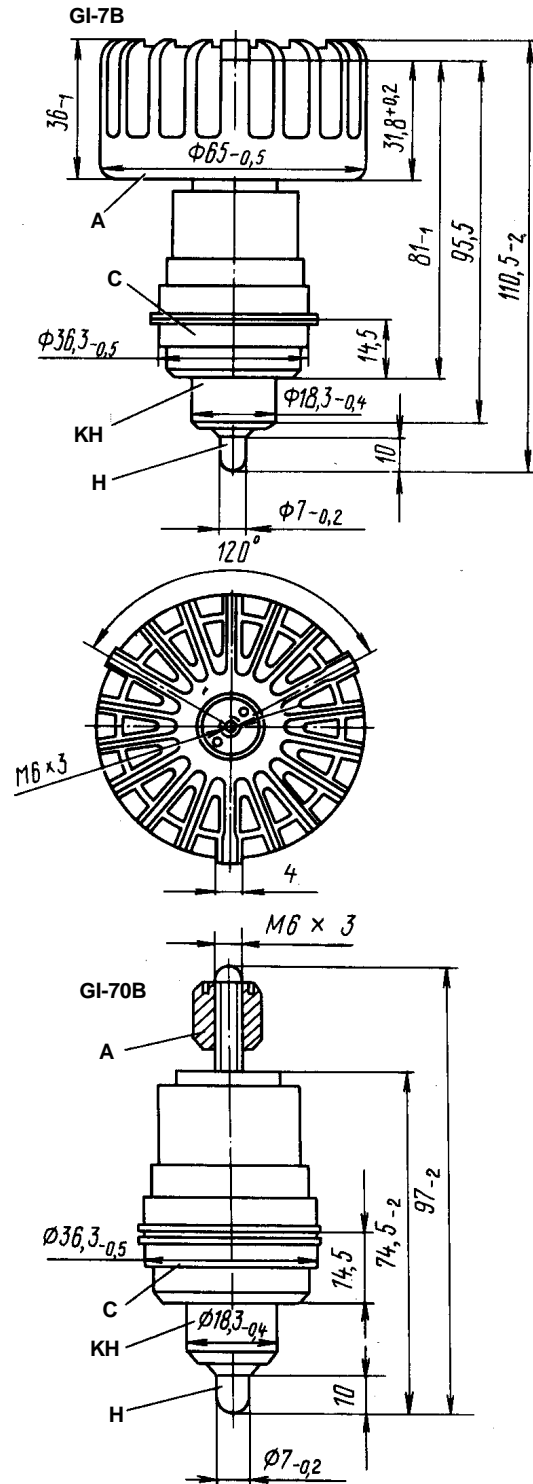
current 7.5 A, wavelength 10 cm, 1/pulse duty factor 1,

400-150, pulse duration 3-10 μs), kW, at least

1

Output power over 650 h of service, W, at least

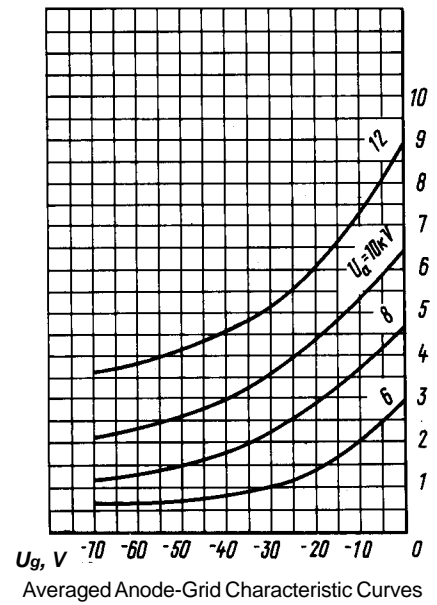
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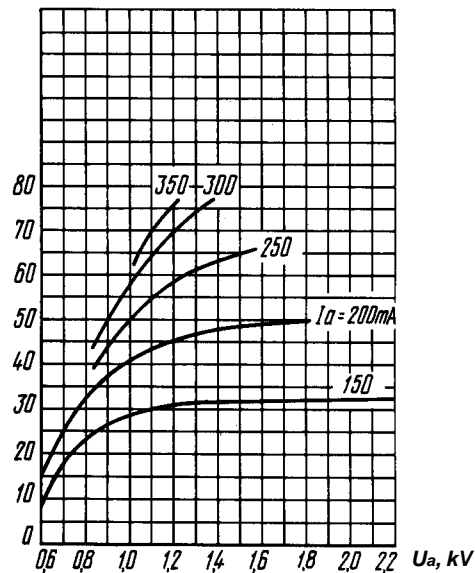
A - Anode; C - Grid; K - Cathode;
KH - Cathode and Heater

Limit Operating Values

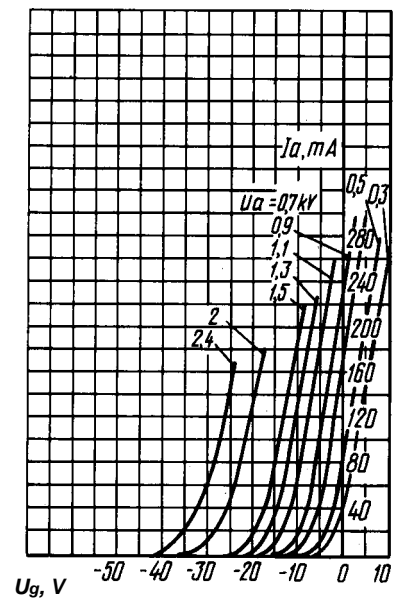
Heater voltage, V	12-13
Anode voltage, kV:	
in pulsed operation	9
instantaneous value in CW operation	5
DC in continuous operation	2.5
DC with cold cathode	3
Grid voltage, V:	
instantaneous value in continuous operation	-400 to +80
in pulsed operation	-900 to +600
Cathode current, A:	
r.m.s. value	0.6
DC component under conditions of class B without modulation	0.4
instantaneous value under conditions of class B without modulation	1.25
Anode current (DC component in pulsed operation), A	7.5
Dissipation, W:	
anode	350
grid	7
Wavelength, cm	9
Cathode heating time, min.	1.5
Pulse duration, μ s	10
Temperature, $^{\circ}$ C:	
anode end face	200
anode heat sink	160
cathode lead	100
grid lead	200
outer ceramic parts	250
Resistance in grid circuit, k Ω	10



P, W



Averaged Characteristic Curves Showing Oscillator Output Power versus Anode Voltage in Continuous-Wave Generation: $\lambda = 18.5$ cm



Averaged Anode-Grid Characteristic Curves in Pulse Operation: $U_a = 12.6$ V