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.

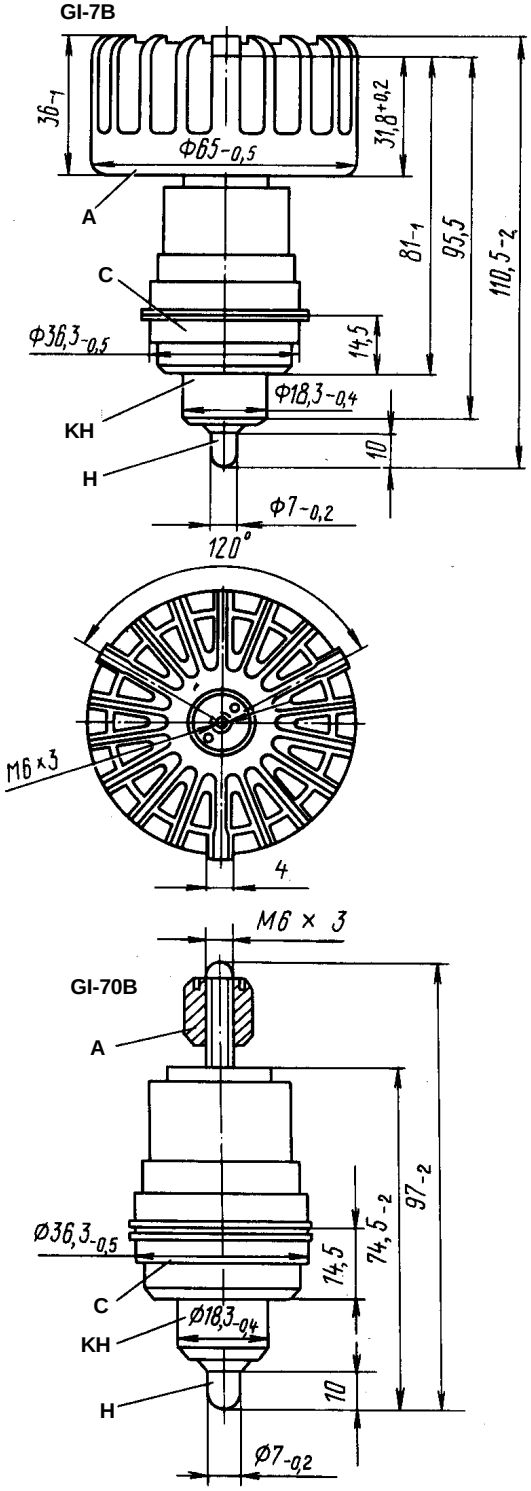
OPERATING ENVIRONMENTAL CONDITIONS

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	**24**

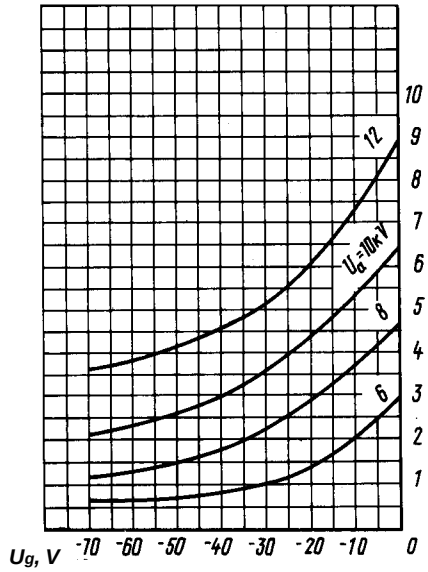
GI-7B



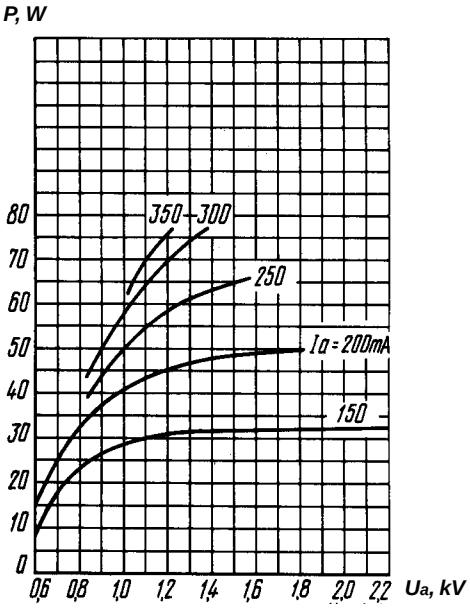
A - Anode; C - Grid; K - Cathode;
KH - Cathode and Heater

Limit Operating Values

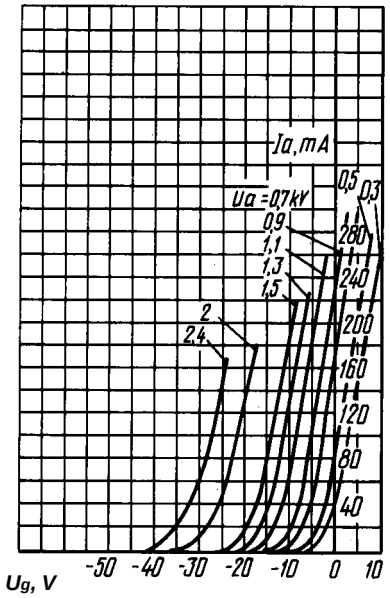
Heater voltage, V		**12-13**
Anode voltage, kV:		
in pulsed operation		**9**
instantaneous value in CW operation		**5**
DC in continuous operation		**2.5**
DC with cold cathode		**3**
Grid voltage, V:		
instantaneous value in continuous operation		**-400 to +80**
in pulsed operation		**-900 to +600**
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, μs		**10**
Temperature, °C:		
anode end face	**200**	
anode heat sink	**160**	
cathode lead	**100**	
grid lead	**200**	
outer ceramic parts	**250**	
Resistance in grid circuit, kΩ		**10**



Averaged Anode-Grid Characteristic Curves



Averaged Characteristic Curves Showing Oscillator Output Power versus AnodeVoltage in Continuous-Wave Generation: λ = 18.5 cm



Averaged Anode-Grid Characteristic Curves in Pulse Operation: U_1 = 12.6V