GI-7b/GI-70b/GI-7bT

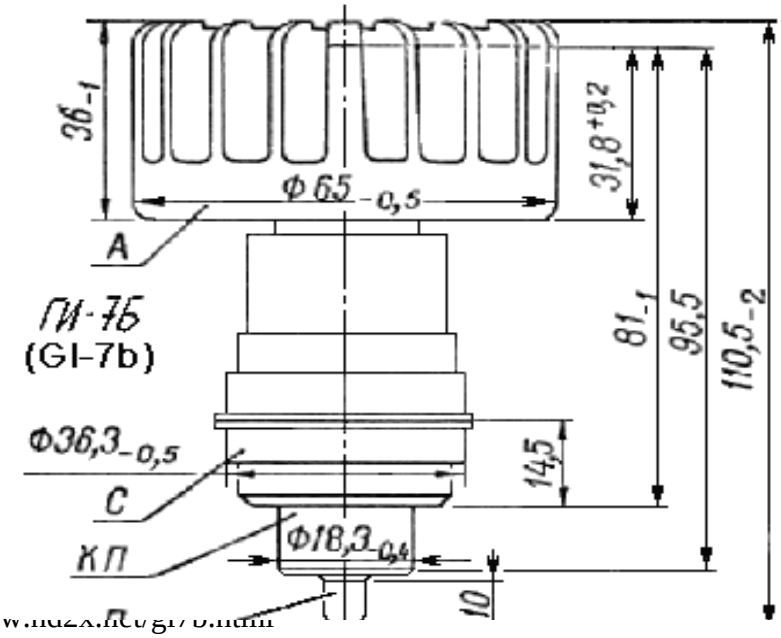
(similar to AEG LDa)

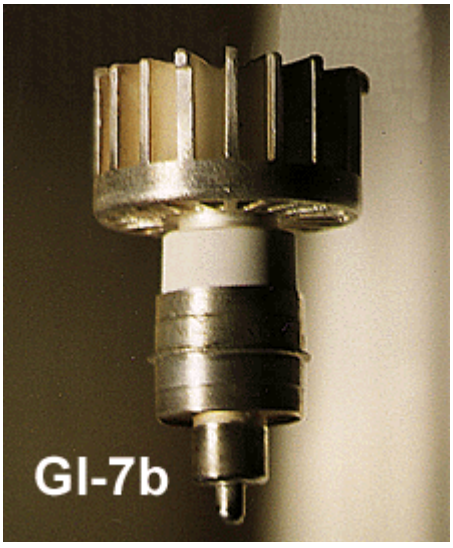
Microwave Triode

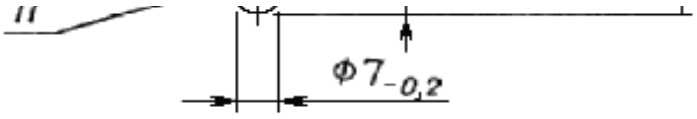
The GI-7b, GI-70b and GI-7bT microwave triode operates as an oscillator or an amplifier in continuous-wave or pulsed mode with anode modulation in the centimetric and decimetric wavelength ranges. The GI-7"b" is available in two variants differing in the type of cooling: the GI-7b with a heat sink for forced air cooling and the GI-70b with no heat sink for other systems of cooling. The GI-7b is physically identical to the GI-6b and GS-9b, although there are electrical differences. The GI-7bT comes with heat sink only, is more shock- and vibration-proof, and has a larger ceramic structure. It is designed to be used in Tanks. The "bT" varies in a few parameters from the "b", and these variations are noted in the tables below. As with most Russian power triodes, the heat sink on the GI-7b & GI-7bT is removable.

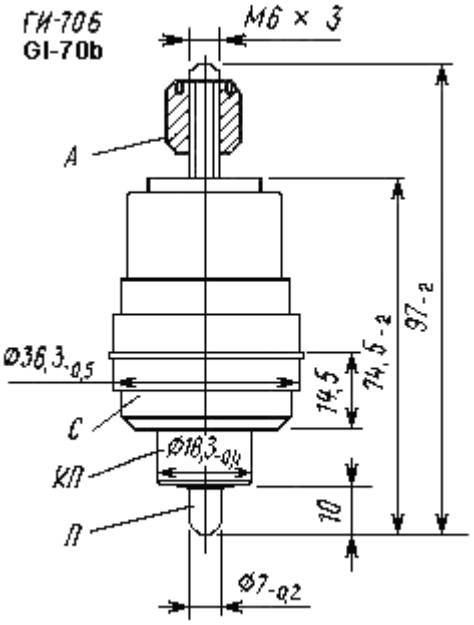
back

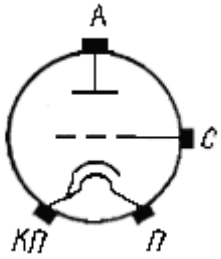
GENERAL	
Cathode: indirectly heated, dispenser, oxide-coated.	
Envelope: metal-ceramic.	
Cooling: 24 m^3/hr forced air (GI-7bT; 27 m^3/hr). For 350W output, 40 m^3/hr is required by all!	
Height, mm, at most:	with heat sink: 110.5
	without heat sink: 97
Diameter, mm, at most:	with heat sink: 65
	without heat sink: 36.3+
Mass, gm, at most:	with heat sink: 330
	without heat sink: 170





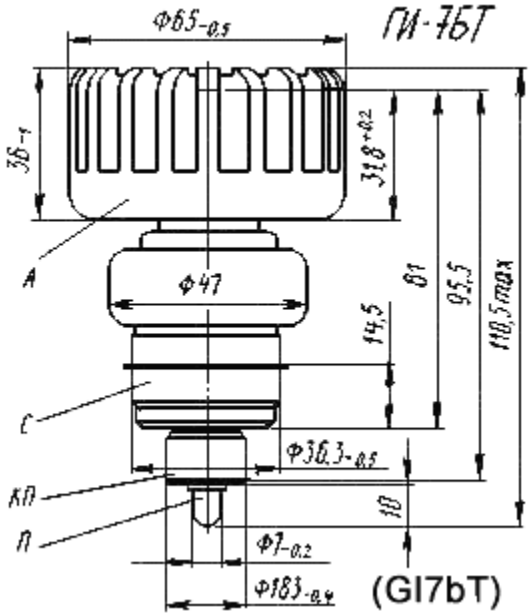






***A* - anode; *C* - grid; *KP* - cathode and heater; *P* - heater**

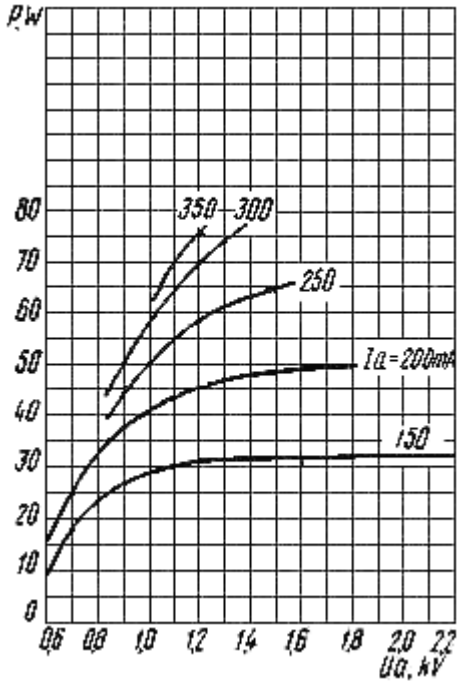
Note the physical difference of the GI-7bT compared to the GI-7b is in the "ceramic" portion of the body; 47mm diameter instead of a bit less than 36mm!

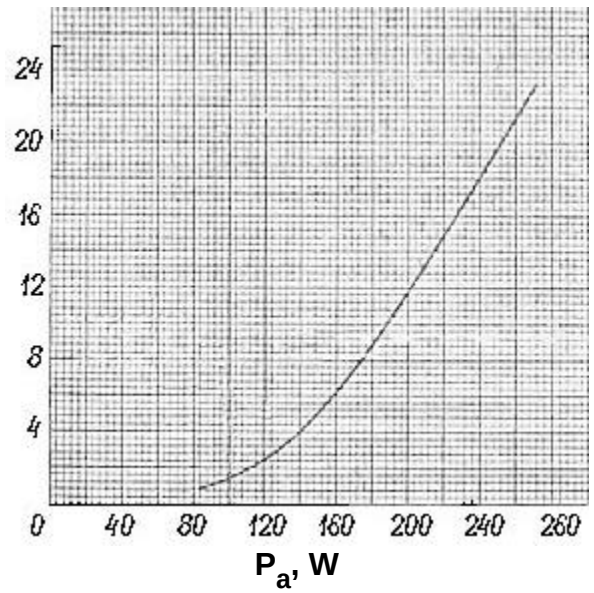


OPERATING ENVIRONMENTAL CONDITIONS	
Vibration loads:	
frequency, Hz	5-600
acceleration, m/s²	59
Multiple loads with acceleration, m/s²	342
Single impacts with acceleration, m/s²	1,465
Linear loads with acceleration, m/s²	490
Ambient Conditions:	
Temperature, °C	-60 to +100
Relative humidity at up to +40 °C, %	95-98

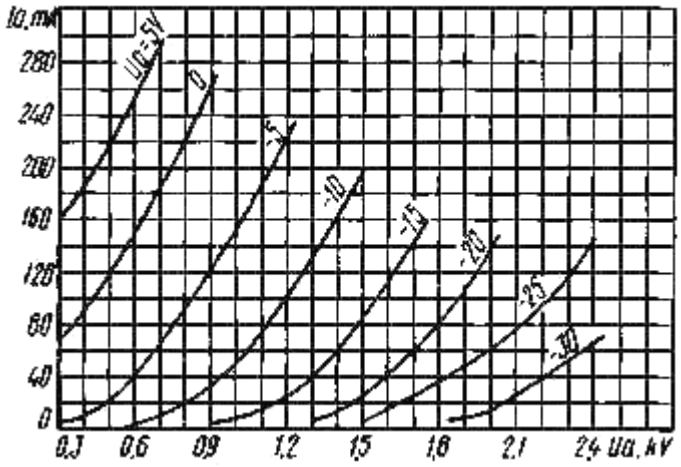
NOMINAL ELECTRICAL PARAMETERS	
Heater voltage, V	12.6
Heater current, A	1.925
Mutual conductance (V_a = 1.2 kV, I_a = 150 mA, change in V_g = 1V), mA/V:	>23
Operating point (negative V_g with V_a = 1.3KV, I_a = 150mA), V:	10
input capacitance, pF:	11.1
output capacitance, pF:	0.075
transfer capacitance, pF:	4.6
Warm up time (V_a = 400V), at most	90
Output, CW operation (V_a =1.05KV, I_a =300mA, wavelength 18.5 cm), W (GI7b / **GI7bT**):	>30 / >40
Output in pulsed operation (at peak V_a = 9KV, I_a = 7.5A, wavelength 10 cm, 1/pulse duty factor 1,400-150, pulse duration 3-10 ÷s), KW (GI7b / **GI7bT**):	>11 / >12
Designed Tube Life (hours)	>650

ELECTRICAL PARAMETER LIMITS	
Heater voltage, V	12-13.2
Heater current, A	1.8-2.05
Mutual conductance (V_a = 1.2 kV, I_a = 150 mA, change in V_g = 1V), mA/V:	20-26
Operating point (negative V_g with V_a = 1.3KV, I_a = 150mA), V	7.5-12.5
input capacitance, pF	10-12.2
output capacitance, pF:	0.055-0.095
transfer capacitance, pF (GI7b / **GI7bT**):	4-5.2 / 4.2-5.0
Maximum CW Anode voltage (V_a), KV:	2.5
Maximum Instantaneous value Anode voltage (V_a), KV:	5
Instantaneous value Grid voltage (V_g), V	-400 to +80
Maximum CW Cathode current (I_c), r.m.s./key down, A	0.6 / 0.4
Anode Dissipation, W:	350
Grid Dissipation, W:	7
Temperature at anode lead, °C	200
Temperature at radiator, °C	160
Temperature at cathode leads, °C	100
Temperature at grid leads, °C	200
Temperature at external ceramic parts, °C	250
Minimum wavelength in CW operation, cm	10
Minimum wavelength in pulsed operation, cm	9

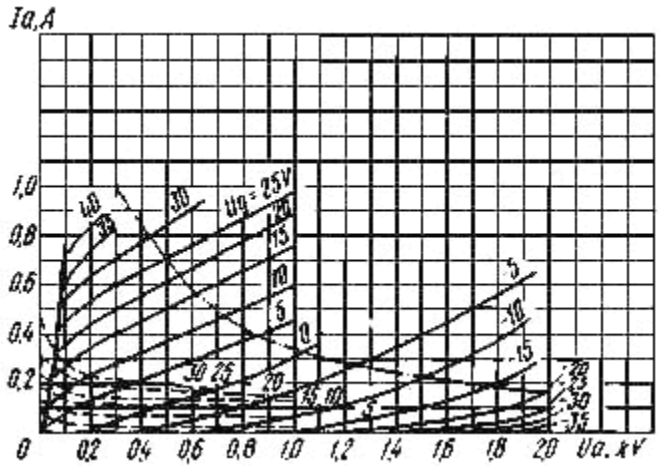




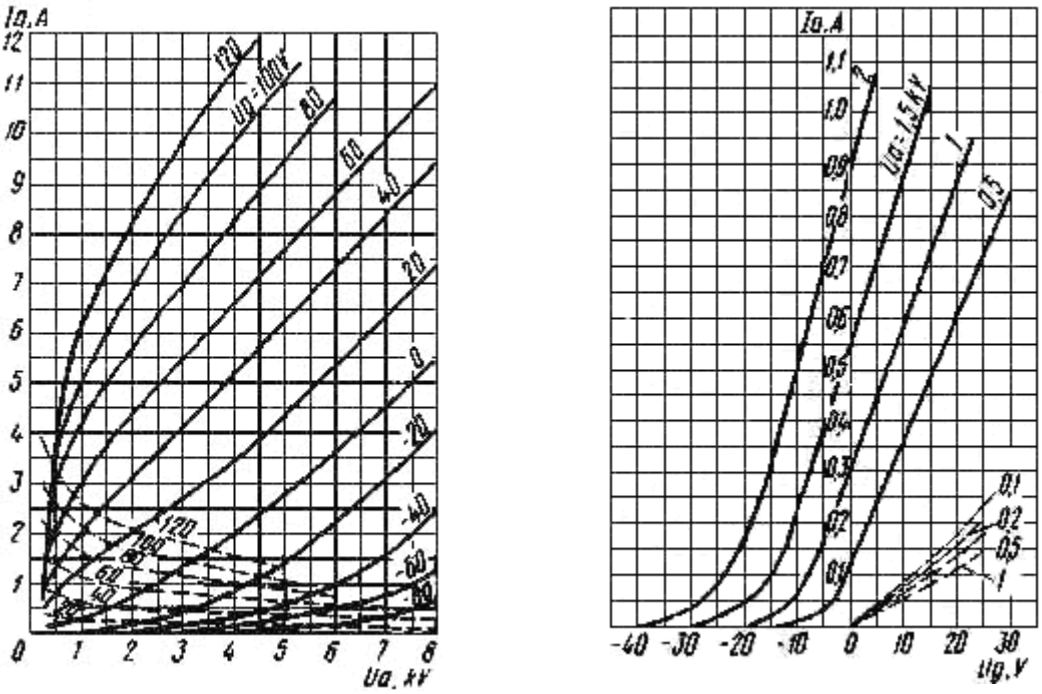
Averaged Anode Characteristic Curves:
U_f = 12.6V



Averaged Anode-Grid Characteristic Curves:
U_f = 12.6V



ContinuousWave Generation:
***L* = 18.5cm**



Averaged Anode Characteristic Curves:
***U_f* = 12.6V;**
_____ anode;
_ _ _ grid-anode;