

Russian metal-ceramic microwave triode for oscillator and amplifier service in continuous-wave or pulsed operation.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	12.6 V / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
MAXIMUM PLATE VOLTAGE	9000 V
Promoted-field audit performed from English ratings/characteristics; detailed electrical values retained in parameter table.	

UMNynbCHBLIW reHepaTopHbli CBEPXBbICOKOYaCTOT- The TU-76 (FT'N-70B) microwave triode operates as MOAYNAUMMA B CAaHTUMETPOBOM U AeLMMETPOBOM Aua- The triode is available in two variants differing in the nasoHax BOMH. type of cooling: the N'A-7B with a heat sink for forced air KaTog — okeuaHbI KOCBEHHOTO Hakana. Cathode: indirectly heated, oxide-coated. OdbopmneHue — MeTannokepamm4eckoe. Envelope: metal-ceramic.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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Published test conditions and operating points. Values on this page are preserved as reported by this source.

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Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Hoih Tpuopg MNN [1]	76	Hoih Tpuopg MNN-76 (MA-706) npegHasHayeH Ans reHe- an oscillator and an amplifier in continuous-wave or
Hoih Tpuopg MNN [2]	706	Hoih Tpuopg MNN-76 (MA-706) npegHasHayeH Ans reHe- an oscillator and an amplifier in continuous-wave or
temperature, °C [1]	343 C	MICE 343 Ambient temperature, °C -60to +100
temperature, °C [2]	-60 C	MICE 343 Ambient temperature, °C -60to +100
temperature, °C [3]	100 C	MICE 343 Ambient temperature, °C -60to +100
voltage	1.2 uS	KpyTusHa xapakTepucTuky (Npy HanpsXxeHuu Mutual conductance (at anode voltage 1.2 kV,
current [1]	12 mA	anoga 1,2 kB, nameHeHUu HaNPSHKEHUS CETKU Ha grid voltage change by 1V, anode current 150 mA),
current [2]	1 mA	anoga 1,2 kB, nameHeHUu HaNPSHKEHUS CETKU Ha grid voltage change by 1V, anode current 150 mA),
current [3]	150 mA	anoga 1,2 kB, nameHeHUu HaNPSHKEHUS CETKU Ha grid voltage change by 1V, anode current 150 mA),
anode [1]	13 kV	MponuyaemocTs (Npu Hanps>xeHWN aHoga 1,3 kB, Penetration factor (at anode voltage 1.3 kV, anode
anode [2]	1.3 kV	MponuyaemocTs (Npu Hanps>xeHWN aHoga 1,3 kB, Penetration factor (at anode voltage 1.3 kV, anode

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
current [1]	200 A	u3MeHeHun HanpsxHeus aHoaa 200 B, Toke voltage change 200 V, anode current
current [2]	200 A	u3MeHeHun HanpsxHeus aHoaa 200 B, Toke voltage change 200 V, anode current
anode	0 V	Pa6ouas To4ka (0TpULaTebHOe HanpaXeHne CeTku Operating point (negative grid voltage at anode
current [1]	13 mA	npu Hanpsxexun aHoaa 1,3 kB, Toke aHoga voltage 1.3 kV, anode current 150 mA), V. 125-7.5
current [2]	1.3 mA	npu Hanpsxexun aHoaa 1,3 kB, Toke aHoga voltage 1.3 kV, anode current 150 mA), V. 125-7.5
current [3]	150 mA	npu Hanpsxexun aHoaa 1,3 kB, Toke aHoga voltage 1.3 kV, anode current 150 mA), V. 125-7.5
current [4]	125 mA	npu Hanpsxexun aHoaa 1,3 kB, Toke aHoga voltage 1.3 kV, anode current 150 mA), V. 125-7.5
current [5]	-7.5 mA	npu Hanpsxexun aHoaa 1,3 kB, Toke aHoga voltage 1.3 kV, anode current 150 mA), V. 125-7.5
Interelectrode capacitance, pF [1]	150 pF	150 mA), B 12,5-7,5 Interelectrode capacitance, pF:
Interelectrode capacitance, pF [2]	125 pF	150 mA), B 12,5-7,5 Interelectrode capacitance, pF:
Interelectrode capacitance, pF [3]	-75 pF	150 mA), B 12,5-7,5 Interelectrode capacitance, pF:
iNpUt [1]	10	MexanekTpoaHblie emkocTu, Nd: iNpUt ... 10-12.2
iNpUt [2]	-12.2	MexanekTpoaHblie emkocTu, Nd: iNpUt ... 10-12.2
output L [1]	10	BXOAHAS . oo otth it e 10-12,2 output L 0.055-0.095
output L [2]	-122	BXOAHAS . oo otth it e 10-12,2 output L 0.055-0.095
output L [3]	0.055	BXOAHAS . oo otth it e 10-12,2 output L 0.055-0.095
output L [4]	-0.095	BXOAHAS . oo otth it e 10-12,2 output L 0.055-0.095

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
voltage [1]	4 V	MPOXOAHAN . . o\ it ie e 4-52 Warm up time (at anode voltage 400 V), s,
voltage [2]	-52 V	MPOXOAHAN . . o\ it ie e 4-52 Warm up time (at anode voltage 400 V), s,
voltage [3]	400 V	MPOXOAHAN . . o\ it ie e 4-52 Warm up time (at anode voltage 400 V), s,
power	90 W	.. 90 Output power:
voltage	1.05 kV	MouwHOCTb BbixOaHas, BT, He MeHee: in CW operation (at anode voltage 1.05 kV,
wavelength [1]	300 cm	B HEMPEPbLIBHOM peXxume (MPpu HanpskeHun aHoaa anode current 300 mA, wavelength 18.5cm),
wavelength [2]	18.5 cm	B HEMPEPbLIBHOM peXxume (MPpu HanpskeHun aHoaa anode current 300 mA, wavelength 18.5cm),
voltage	185 V	18,5CM) in pulsed operation (at peak anode voltage
wavelength [1]	9 cm	B UMIMYNCHOM peXxxuMe (MPU Hanpsi>keHun aHoza 9kV, anode current 7.5 A, wavelength 10 cm,
wavelength [2]	7.5 cm	B UMIMYNCHOM peXxxuMe (MPU Hanpsi>keHun aHoza 9kV, anode current 7.5 A, wavelength 10 cm,
wavelength [3]	10 cm	B UMIMYNCHOM peXxxuMe (MPU Hanpsi>keHun aHoza 9kV, anode current 7.5 A, wavelength 10 cm,
pulse duration [1]	9 s	B umnynece 9 kB, Toke aHoga 7,5 A, pnuHe 1/pulse duty factor 1,400—150, pulse duration
pulse duration [2]	75 s	B umnynece 9 kB, Toke aHoga 7,5 A, pnuHe 1/pulse duty factor 1,400—150, pulse duration
pulse duration [3]	1 s	B umnynece 9 kB, Toke aHoga 7,5 A, pnuHe 1/pulse duty factor 1,400—150, pulse duration
pulse duration [4]	1400 s	B umnynece 9 kB, Toke aHoga 7,5 A, pnuHe 1/pulse duty factor 1,400—150, pulse duration
pulse duration [5]	-150 s	B umnynece 9 kB, Toke aHoga 7,5 A, pnuHe 1/pulse duty factor 1,400—150, pulse duration
power over [1]	3 W	ASMTENBHOCTY umnynbca 3—10MKe) Output power over 650 h of service, W, at
power over [2]	-10 W	ASMTENBHOCTY umnynbca 3—10MKe) Output power over 650 h of service, W, at

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
power over [3]	650 W	ASMTENBHOCTY umnynbca 3—10MKe) Output power over 650 h of service, W, at
voltage, V [1]	12 V	Hanpsxenwe Hakana, B 12-13,2 Heater voltage, V
voltage, V [2]	-132 V	Hanpsxenwe Hakana, B 12-13,2 Heater voltage, V
current, A [1]	-900 A	B UMNILCHOM peXume -900- +600 Cathode current, A:
current, A [2]	600 A	B UMNILCHOM peXume -900- +600 Cathode current, A:
pulsed	125 A	L 1,25 Anode current (DC component in pulsed
Dissipation, W	75 W	UMITYTIBCHOM PEXUME, A 7,5 Dissipation, W:
anode	350	PaccevBaemas MOWHOCTb, BT: anode 350
grid [1]	350	GHOMOM i 350 grid ... 7
grid [2]	7	GHOMOM i 350 grid ... 7
Wavelength,em [1]	7 cm	CEBTKOM vttt 7 Wavelength,em 9
Wavelength,em [2]	9 cm	CEBTKOM vttt 7 Wavelength,em 9
heating time, min [1]	9 s	OnHA BOMHBL CM . . .o 9 Cathode heating time, min. 1.5
heating time, min [2]	1.5 s	OnHA BOMHBL CM . . .o 9 Cathode heating time, min. 1.5
Temperature, °C	10 C	BnuTenbHOCTb UMMYNLCA, MKC ou vt 10 Temperature, °C:
anode heatsink	200	e s 200 anode heatsink
grid circuit, k€	2 ohm	BHELUHUX Kepamndeckux Yacten Resistance in grid circuit, k€2 ...
Pulse A=	185	Averaged Anode-Grid Characteristic Curves in Pulse A=185cm
Voltage in Continuous	126 W	Uy=126V Output Power versus Anode Voltage in Continuous-
frequency [1]	12.6 Hz	U; = 12.6 V; T = 4 ps; frequency 350 imp/s; Ui=126V;
frequency [2]	4 Hz	U; = 12.6 V; T = 4 ps; frequency 350 imp/s; Ui=126V;

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
frequency [3]	350 Hz	U _i = 12.6 V; T = 4 ps; frequency 350 imp/s; U _i =126V;
frequency [4]	126 Hz	U _i = 12.6 V; T = 4 ps; frequency 350 imp/s; U _i =126V;