



ELECTRONIC TUBE REFERENCE

6S53NV

Nuvistor Tubes (all numbers) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Ruggedized Russian metal-ceramic high-frequency triode for grounded-grid amplification and oscillator service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 130 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
TRANSCONDUCTANCE	0.012 S
AMPLIFICATION FACTOR	80
MAXIMUM PLATE VOLTAGE	120 V
MAXIMUM PLATE DISSIPATION	1.2 W
MAXIMUM CATHODE CURRENT	15 mA
<i>Promoted values translated from the filename-designated Russian entry only.</i>	

6S53NV / 6C53H-B — Ruggedized Decimeter-Wave Common-Grid Triode

High-mu superminiature metal-ceramic triode for voltage amplification and oscillation in the decimeter wavelength range, with high vibration, shock, and temperature endurance.

Overview

The **6S53NV**, written **6C53H-B** in the Russian technical reference, is a **ruggedized superminiature triode** designed for **high-frequency voltage amplification and oscillation in common-grid circuits operating in the decimeter-wave band**. The manufacturer describes a **metal-ceramic envelope** with an approximate mass of **3 g**.

The related **6S53N** / **6C53H** is the standard version. The -B variant has separately specified electrical tolerances, lower feedthrough capacitance, higher mechanical endurance, and an extended ambient operating range.

Electrical Construction and Operating Characteristics

The tube contains an anode, control grid, and indirectly heated cathode. Its characteristic test conditions are **6.3 V heater**, **120 V anode voltage**, and **68 Ω cathode resistance**.

Parameter	6S53NV
Heater current	130 $\pm$ 20 mA
Anode current	9 $\pm$ 2.5 mA
Anode current at -5 V grid voltage	$\leq$50 μA
Grid reverse current	$\leq$0.1 μA
Cathode-to-heater leakage	$\leq$20 μA
Transconductance	12 $\pm$ 2.5 mA/V
Transconductance at 5.7 V heater	8 mA/V
Amplification factor	80 $\pm$ 20
Input resistance at 60 MHz	$\geq$10 kΩ
Equivalent noise resistance	$\leq$0.5 kΩ
Vibration-induced noise voltage	$\leq$40 mV

The reference additionally gives acceptance criteria of **grid reverse current $\leq$ 1.5 μ A**, **transconductance $\geq$ 8 mA/V**, and allowable transconductance variation of **+30% / -35%**.

The published amplification factor and transconductance characterize a high-mu, high-slope triode for the specified high-frequency circuit service.

Common-Grid Decimeter-Wave Application

The manufacturer explicitly identifies **common-grid voltage amplification and oscillation** in the **decimeter wavelength range**.

In a common-grid amplifier, the grid is the common RF reference, the signal enters the cathode circuit, and output is taken from the anode. This changes the circuit's input impedance and feedback relationships compared with grounded-cathode operation.

The datasheet provides electrical characteristic curves but does not specify a universal frequency response, circuit gain, or oscillator resonator.

Interelectrode Capacitances

Measurement	Value
Input capacitance	$6.75 \pm 0.75 \text{ pF}$
Output capacitance	$1.5 \pm 0.5 \text{ pF}$
Feedthrough capacitance	$\leq 0.05 \text{ pF}$
Cathode-to-heater capacitance	$2.5 \pm 0.5 \text{ pF}$

The small feedthrough capacitance is particularly relevant to minimizing unwanted input-output coupling in high-frequency operation.

Maximum Operating Ratings

Parameter	Limit
Heater voltage	5.7-7.0 V
Anode voltage	120 V
Anode voltage at cutoff	330 V
Maximum negative grid voltage	55 V
Cathode-to-heater voltage	100 V
Cathode current	15 mA
Anode dissipation	1.2 W
Grid dissipation	0.2 W
Grid-circuit resistance	1 MΩ
Maximum envelope temperature	250°C

The 330 V anode limit applies to the cutoff condition, not ordinary conducting operation.

Mechanical and Environmental Qualification

Condition	6S53NV rating
Vibration acceleration	20 g
Vibration-frequency range	5-5,000 Hz
Repeated shock	150 g
Single shock	1,000 g
Sustained acceleration	150 g
Ambient temperature	-60°C to +200°C
Minimum operating life	2,000 hours

The ruggedized variant has substantially greater mechanical and thermal endurance than the standard [6S53N](#), although the standard type has a longer specified minimum service life of 5,000 hours under its conditions.

Characteristic Curves

The Russian reference provides plate-current curves for several grid-bias values and transfer curves at different anode voltages. These document the relation between anode current, grid voltage, and plate voltage for the ruggedized triode.

Technical Summary

The **6S53NV / 6C53H-B** is a **6.3 V, 130 mA high-mu metal-ceramic triode** for **common-grid decimeter-wave amplification and oscillation**. It has nominal **80 amplification factor**, **12 mA/V transconductance**, and **9 mA anode current** at the published test point.

Its low feedthrough capacitance, high-frequency input-resistance specification, and ruggedized **20 g vibration, 1,000 g single-shock**, and **+200°C ambient** qualifications distinguish it from the standard [6S53N](#).

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1981 Russian Tubes Katsnelson and Larionov

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

1981 RUSSIAN TUBES KATSNELSON AND LARIONOV

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Nominal heater voltage	6.3 V	Published source value
Nominal heater current	130 mA	Published source value
Transconductance	12000 μ S	Published operating point
Amplification factor	80	Published operating point
Guaranteed service life	2000 h	Published source value

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