ELECTRONIC TUBE REFERENCE

# 6S63N

Nuvistor Tubes (all numbers) electronic tube

CONSOLIDATED TECHNICAL DATA
**1 SECTION**
CONSTRUCTION
**TRIODE**

Russian economical low-voltage metal-ceramic triode for general radio equipment.

## 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

**SECTION1** Triode

| | |
|---|---|
| **TRANSCONDUCTANCE** | 0.0081 S |
| **AMPLIFICATION FACTOR** | 15 |
| **MAXIMUM PLATE VOLTAGE** | 100 V |
| **MAXIMUM PLATE DISSIPATION** | 1.2 W |
| **MAXIMUM CATHODE CURRENT** | 15 mA |

*Promoted values translated from the filename-designated Russian entry only.*

## 6S63N / 6C63H — Low-Voltage Superminiature Radio Triode

*An economical metal-ceramic triode intended for universal radio equipment operating at low supply voltage.*

# Overview

The **6S63N**, written **6C63H** in the Russian technical reference, is a **low-voltage, economical superminiature triode** intended for use in **universal radio equipment**. The manufacturer explicitly identifies its low-voltage operating role and describes a **metal-ceramic envelope** weighing approximately **3 g**.

The principal characteristic measurements use only **27 V anode voltage**, indicating an intended operating region substantially below that of conventional high-voltage receiving amplifiers.

# Construction and Electrical Characteristics

The 6S63N contains an anode, control grid, and indirectly heated cathode. The manufacturer drawing shows grouped connections **1, 2, 3** for the anode, **4, 5, 6** for the grid, **7, 8, 9** for the cathode, and **10 and 12** for the heater.

The basic test conditions are **6.3 V heater**, **27 V anode**, and **130 Ω cathode resistor**.

| Characteristic | Value |
|---|---|
| Heater current | **130 ± 20 mA** |
| Anode current | **7 ± 2 mA** |
| Anode current at −7 V grid bias | **≤50 µA** |
| Grid reverse current at −1.5 V | **≤0.1 µA** |
| Cathode-to-heater leakage | **≤20 µA** |
| Transconductance | **8 mA/V**, +2/−1.5 |
| Amplification factor | **15 ± 5** |
| Input resistance at 60 MHz | **≥10 kΩ** |
| Equivalent internal noise resistance | **0.3–0.5 kΩ** |
| Vibration-induced noise voltage | **≤40 mV** |

The amplification factor of approximately **15** is substantially lower than that of many high-mu receiving triodes, while the transconductance remains relatively high at the specified low-voltage test point.

# Low-Voltage Radio Applications

The manufacturer describes the tube as suitable for **universal radio equipment** and specifically characterizes it as **low-voltage and economical**.

The 27 V anode characteristic point supports its use where high-voltage supply rails are unavailable or undesirable. The source does not specify a universal oscillator frequency or one complete radio receiver

circuit, so these should not be inferred.

## Interelectrode Capacitances

| Measurement | Value |
|---|---|
| Input capacitance | **4.2 ± 0.8 pF** |
| Output capacitance | **2.3 ± 0.7 pF** |
| Feedthrough capacitance | **≤2.2 pF** |

These capacitances influence input loading and feedback in radio-frequency and amplifier circuits.

## Operating Limits

| Parameter | Limit |
|---|---|
| Heater voltage | **5.7–7.0 V** |
| Anode voltage | **100 V** |
| Anode voltage at cutoff | **300 V** |
| Cathode-to-heater voltage | **100 V** |
| Cathode current | **15 mA** |
| Anode dissipation | **1.2 W** |
| Grid dissipation | **0.02 W** |
| Grid-circuit resistance | **5 MΩ** |
| Envelope temperature | **250°C** |

The cutoff-condition anode voltage is a separate rating, not a permissible 300 V continuous conducting operating point.

## Mechanical and Environmental Endurance

The reference specifies **at least 5,000 hours** of operating life, **15 g vibration acceleration over 5–2,500 Hz**, **150 g repeated shock**, **1,000 g single shock**, **150 g sustained acceleration**, and an ambient operating range of **−60°C to +200°C**.

These are substantial endurance specifications for a compact radio receiving tube.

## Technical Summary

The **6S63N / 6C63H** is a **6.3 V superminiature metal-ceramic low-voltage triode** for universal radio equipment. Its principal test point uses **27 V anode voltage**, with approximately **7 mA anode current**, **8 mA/V transconductance**, and **15 amplification factor**.

Its economical low-voltage design, compact construction, specified noise characteristics, and high mechanical and temperature endurance distinguish it from conventional glass receiving triodes.

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 | **8100 uS** | Published operating point |
| Amplification factor | **15** | Published operating point |
| Guaranteed service life | **2500 h** | Published source value |

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