



Semiconductor noise generators in 80–170 GHz frequency range



APPLICATION

Noise generators, **M313004** type are used for measurement of a noise factor of components and systems operating in millimeter wave range, and also in order to calibrate and check the operation of receiving and amplifying devices.

Semiconductor microwave noise generators of **M313004** type operate over the range from 80 GHz up to 170 GHz and provide a uniform level of noise signal spectral density 10–20 dB relative to KT_0 .

DESCRIPTION

In noise generators special packaged silicon IMPATT diodes, production of RI "Orion", are used as an active element.

The noise generators are characterized by high stability of noise spectral density level. Waveguide uncoupler protects generator output from external load. The generators each is calibrated in several points over operating frequency band. Sensitivity of noise signal level to temperature does not exceed 0.01 dB/°C in a wide range of operating temperatures.

Noise generators of **M313004** type can be delivered in two options.

M313004-1 – Broadband noise generators with operating frequency band, equal to waveguide channel band, and noise spectral density level 10–15 dB relative to KT_0 (fig. 1).

M313004-2 – Narrow-band noise generators with operating frequency band of 2 GHz and raised noise spectral density level of 20–23 dB relative to KT_0 (fig. 2).

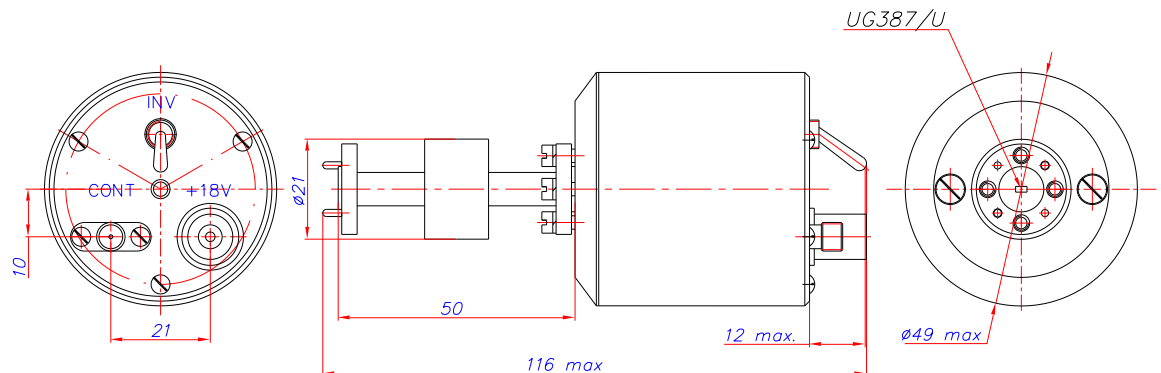


SPECIFICATION

| | M313004-1 | | M313004-2 | |
|--|-------------------------------------|---------|-------------|-------------|
| | Range of operating frequencies, GHz | 80–120 | 120–170 | 80–120 |
| Band of operating frequencies, GHz | 80–120 | 120–170 | $F_0 \pm 1$ | $F_0 \pm 1$ |
| Excess noise ratio, dB·KT ₀ | 10–15 | 10–15 | 20–23 | 20–23 |
| Flatness of excess noise ratio in a band of operating frequencies, dB | ±1,5 | ±3,0 | ±0,5 | ±1,0 |
| VSWR | 1,3 | 1,4 | 1,3 | 1,4 |
| Temperature stability excess noise ratio level, dB/°C | 0,01 | 0,01 | 0,01 | 0,01 |
| Supply voltage/consumption current, V/A, no more | 18/0,15 | 18/0,15 | 18/0,15 | 18/0,15 |
| Type of connecting waveguide flange according to ГГОСТ 13317-89 or UG-387/U-M (it is specified at the order) | | | | |

OVERALL DIMENSIONS DRAWING

M313004-01



M313004-02

