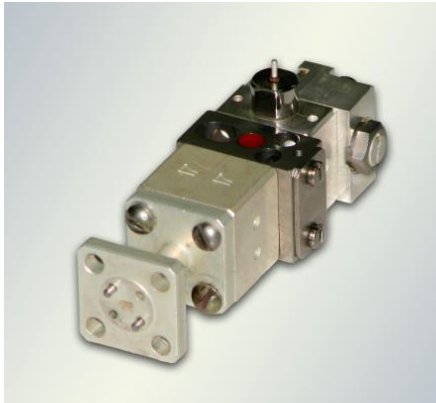




## 80–140 GHz high stable IMPATT oscillator



### APPLICATION

High stable IMPATT oscillator, **M311004** module, is intended for use both in equipment of common application and onboard equipment in frequency range  $F_0 = 80\text{--}140$  GHz.

The oscillator can be used in complex radio systems, as for instance, in W-band transceivers as local oscillator.

### DESCRIPTION

Structurally the oscillator consists of oscillating chamber, high-Q invar resonator, waveguide isolator, waveguide bandpass filter and current regulator.

As an active element in those oscillators special packaged silicon double-drift IMPATT diodes, production of RI "Orion", are used.

Application of high-Q invar resonator provides high stability of output signal (temperature instability of  $10^{-5}/^{\circ}\text{C}$ ) in a wide range of operating temperature as well as low level of phase noise ( $-80$  dB/Hz in relation to carrier at offset 10 kHz).

Waveguide isolator protects the oscillator output from external load effect. In addition at the oscillator output there is waveguide bandpass filter, suppressing amplitude noise up to minus 180 dB/Hz level relative to carrier at offset more than 1 GHz.



#### SPECIFICATIONS

Range of operating central frequencies $F_0^*$ , GHz	80–100	100–120	120–140
Output power, mW	15–50	10–30	10–20
Temperature coefficient of frequency, kHz/°C, no more	300	400	600
Level of phase noise at carrier offset, dB/Hz, no more			
10 kHz	- 80	- 70	- 60
100 kHz	- 100	- 90	- 80
Supply voltage/current consumption, V/mA	24/170	24/190	24/210
Type of connecting waveguide flange according to ГOCT 13317-89			

\*Value of  $F_0$  is specified at the order

#### OVERALL DIMENSIONS DRAWING

