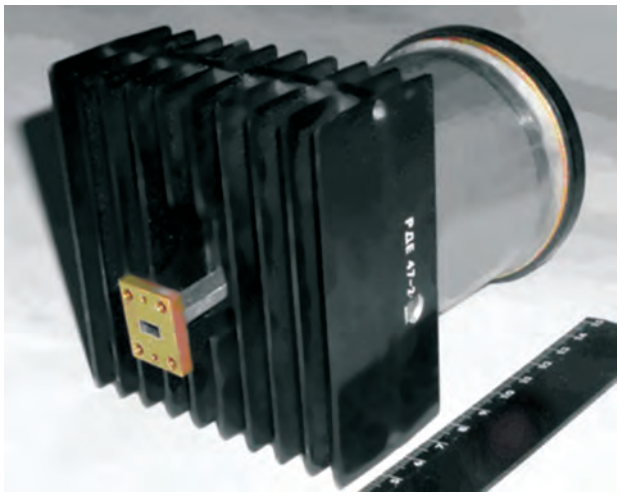
QUASI-OPTICAL SOLID GENERATORS (QSGs)



Appearance of 8-mm QSG

Advantages

Unlike the waveguide analogs, the QSGs have an open spherical oscillatory system. The QSGs are designed for fixed frequencies. The frequency is mechanically adjustable to 0.5 GHz. The generators do not require forced cooling. The QSG frequency instability for 1 s does not exceed 10^{-8}, which is, at least, several ten times better than that of waveguide generators. This improved long-term frequency stability is achieved due to the use of high Q-factor quasi-optical resonators and sealed temperature-stabilized chambers filled with inert gas

Areas of Application

Research, spectroscopy, microwave technology, low-noise heterodynes and generators for pumps of parametric amplifiers in radars and radio navigation

Specification

Device type	Diode type	Frequency, GHz	Power, mW
GKG-8	Gunn diode (GD) AsGa	30—40	110
GKG-3	GD InP	80—86	10
GKL-8	Impact avalanche and transit-time diode (IMPATT diode)	33—42	180
GKL-5	IMPATT diode	53—62	60
GKG-8E	GD AsGa	37.5	110
GKL-3	IMPATT diode	93—96	15
GKL-3A	IMPATT diode	115	15
GKL-1	IMPATT diode (second harmonic)	~300	~2

Stage of Development. Suggestions for Commercialization

IRL3, TRL5
The devices are ready for manufacture

IPR Protection

IPR3

Contact Information

Yuri F. Lohvinov, O.Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine;
+38 057 315 20 09, e-mail: logvinov@ire.kharkov.ua