



One-stage pulse IMPATT-amplifier in frequency range 90–100 GHz



APPLICATION

High stable amplifying module of pulse mode on IMPATT diodes, **M322001**, can be used in various transmitting devices in frequency range $F_0 = 90\text{--}100$ GHz.

In a band of operating frequencies $F_0 \pm 0.5$ GHz the amplifier provides output pulse power level more than 10 W at pulse duration of 80–100 ns and maximum repetition rate 50 kHz. The amplifier operates in saturation mode with gain not less than 6 dB.

DESCRIPTION

The amplifier is made on reflecting scheme with the use of waveguide circulator.

Special packaged silicon double drift pulse IMPATT-diodes of RI "Orion" production are used as active elements. The amplifier is supplied by pulse current source delivered complete with the amplifier. The pulse current source provides current pulses of 10–12 A amplitude at pulse duration up to 120 nsec and maximum repetition rate 50 kHz. The source has protection against wrong sequence of control pulses.



SPECIFICATIONS

Range of central operating frequency, F_0^* , GHz	90–100	
Operating frequency band, GHz	$F_0 \pm 0.5$	
Gain, dB, not less	6	
Output pulse power, W, no more	10	
Pulse duration of output signal, ns	80–100	
Pulse repetition rate of output signal, kHz, no more	50	
Pulse power of input signal, W	2–3	
Repetition rate of input signal, no more, kHz	50	
Supply voltage, V / current consumption, mA, no more	+48/90 +7/30	
Type of connecting waveguide flange: UG-387/U, channel WR-10		
<i>Electrical characteristics of start control pulse</i>		
Input levels on load 50 Ohm, V	low	0–0.4
	high	2.4–4.0
Start pulse duration, nsec	130	
Repetition rate of start control pulse, kHz, no more	50	
Input resistance at control input, Ohm	50	

* F_0 is specified by a customer

OUTLINE DRAWING

