OKI Electronic Components

This version: 2.0 Jun. 2001
Previous version: 1.0 Jul.

KGA4117 Preliminary

15 GHz Ultra-Broadband Amplifier

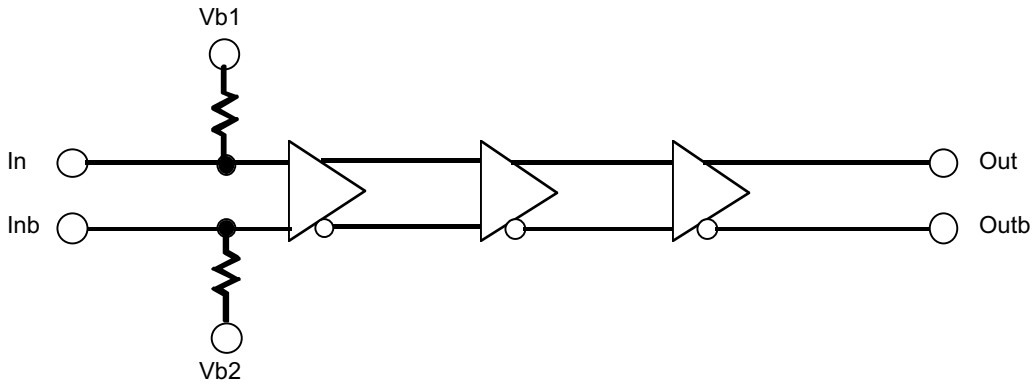
DESCRIPTION

KGA4117 is an ultra-broadband constant gain amplifier implemented 0.1 µm gate GaAs P-HEMT device technology.

FEATURES

- Broadband Amplifier: to 15 GHz (Typ.)
- Single Supply Voltage: –5 V

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

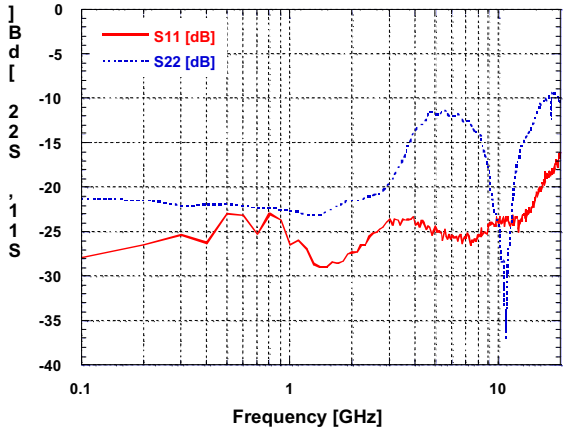
Items	Symbol	Min.	Max.	Unit
Supply Voltage	V_{SS}	–7	0.3	V
Input Amplitude	Vin		1.6	V_{PP}
Storage Temperature	T_{ST}	—45	125	°C

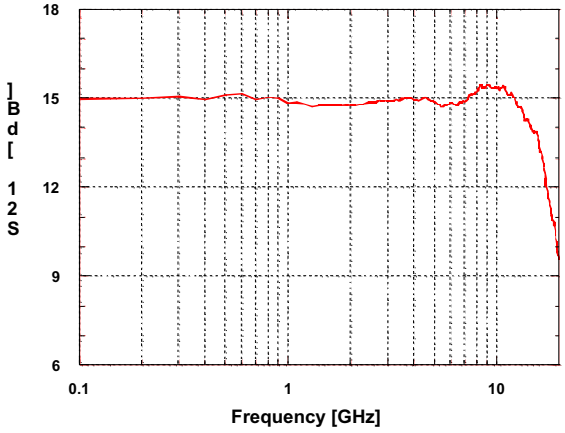
ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{SS}	–5.25	–5	–4.75	V
Supply Current	I_{SS}		100		mA
Operating Temperature	Ta	0		80	°C
Bandwidth (–3 dB)	Fc	12	15		GHz
Gain	Gmax	12	15		dB
Input Amplitude	Vin			1.0	V_{PP}
Output Saturation Amplitude	ΔVop	0.8	1.0		V_{PP}
Input Return Loss (<10 GHz)	S11	15			dB
Output Return Loss (<10 GHz)	S22	10			dB

Input/Output Interface
50Ω AC Coupling (External blocking capacitor is required)

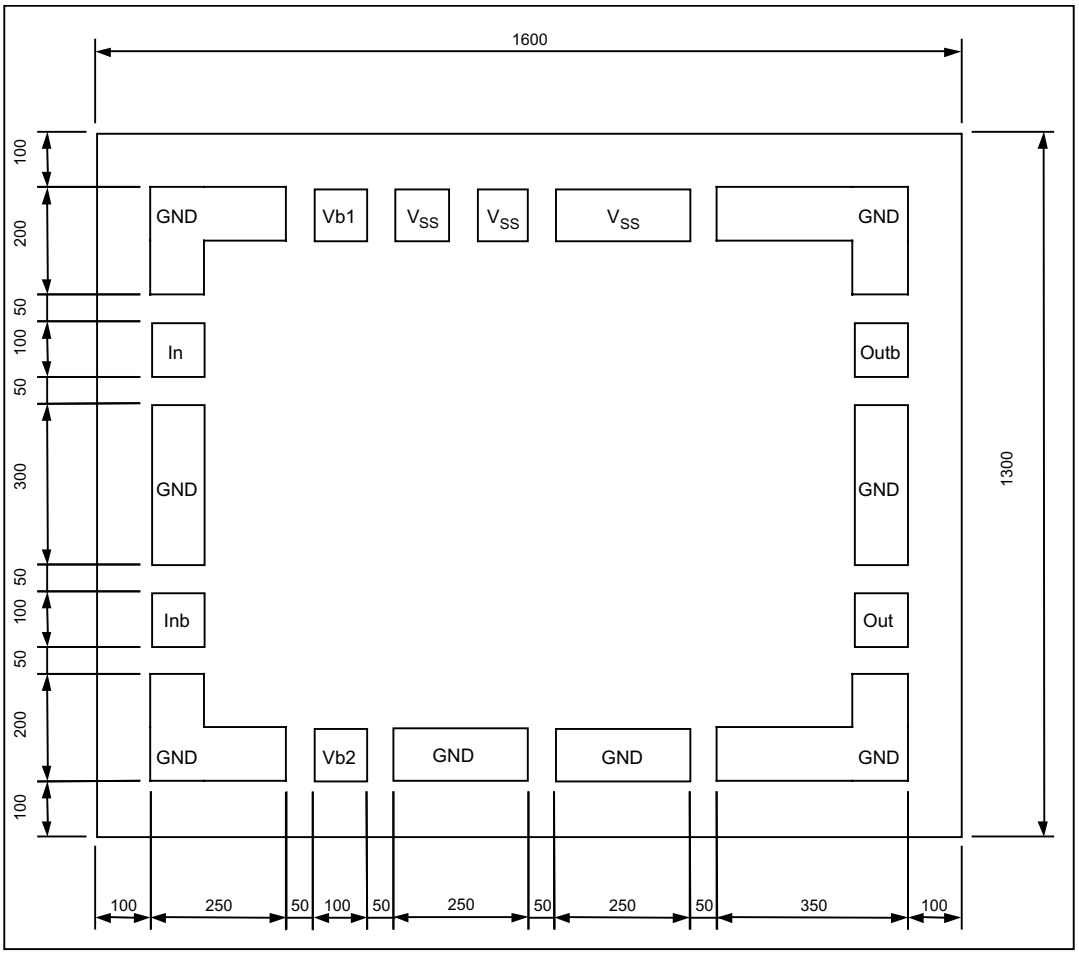
TYPICAL CHARACTERISTICS





Gain : 15 dB
Bandwidth : 17 GHz

PAD ARRANGEMENT



In : Signal input port
Inb : Signal input-bar port
Out : Signal output port
Outb : Signal output-bar port
Vb1 : Input termination port (External capacitor is required) and input bias control port
Vb2 : Input-bar termination port (External capacitor is required) and input-bar bias control port
V_{ss} : Supply voltage port

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