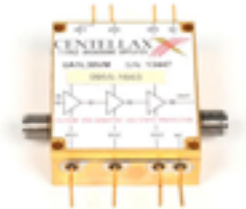
Centellax UA1L30VM

Broadband Amplifier Module



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Used and in Excellent Condition

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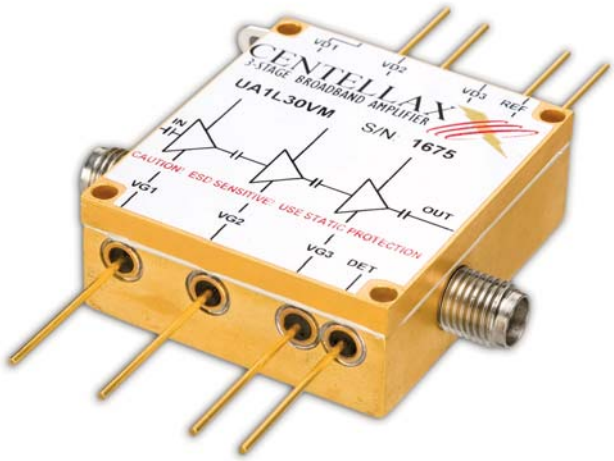
UA1L30VM
Broadband Amplifier Module

Features

- 23 dBm saturated output power
- 27 dB gain (to 30 GHz)
- 3.4 W power dissipation
- Small size package
- 4.5 dB NF



Application

- mm-wave systems
- High frequency test instrumentation
- Broadband gain amplifier

Description

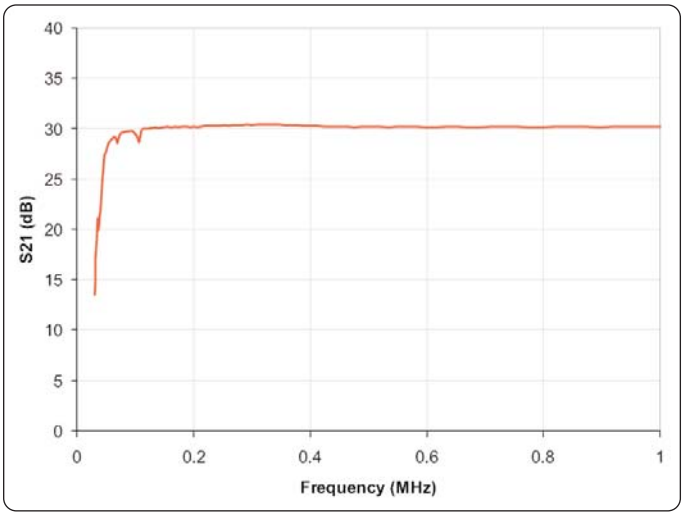
The UA1L30VM Amplifier is a general-purpose broadband amplifier designed for microwave communications, test equipment, and military systems. Its small size and exceptional performance make it a versatile gain block which can improve power and gain in a single package potentially replacing 2 or 3 narrower band amplifiers.

The UA1L30VM provides a complete amplifier module package with a wide frequency range of 1GHz to 30 GHz, low power dissipation, ample output power, low noise figure and gain control.

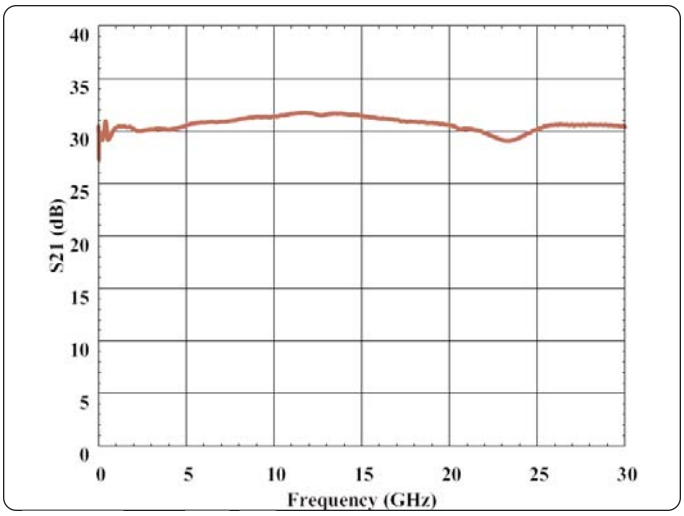
Key Specifications (Specifications pertain to measurements @ 25°C)

Vd1 = Vd2 = Vd3 = 7V, Vg1 = Vg2 = Vg3 = -0.05 V, Z_0 = 50Ω

Parameter	Description	Minimum	Typical	Maximum
S21 (dB)	Small Signal Gain 0.01 - 30 GHz	27	30	-
S11 (dB)	Input Match 0.01 - 30 GHz	-	-12	-10
S22 (dB)	Output Match 0.01 - 30 GHz	-	-12	-10
P_{sat} (dBm)	Saturated Power Output	-	22	-



UA1L30VM typical measured performance
Bias: Vd1= Vd2= Vd3 =7V, Vg1=Vg2=Vg3 =–0.05 V



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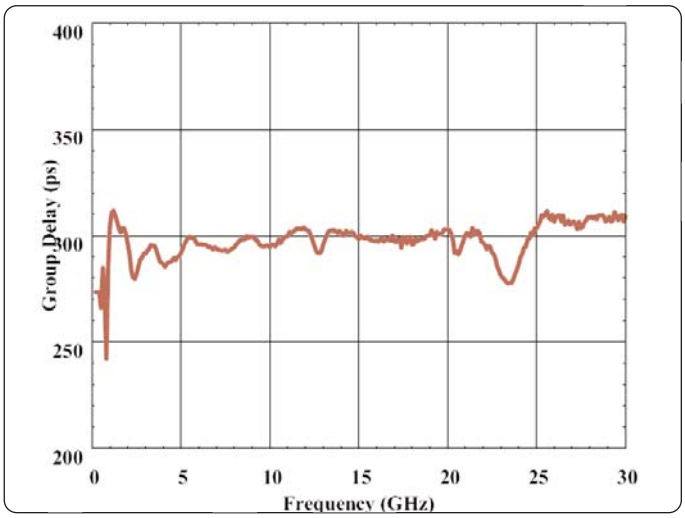

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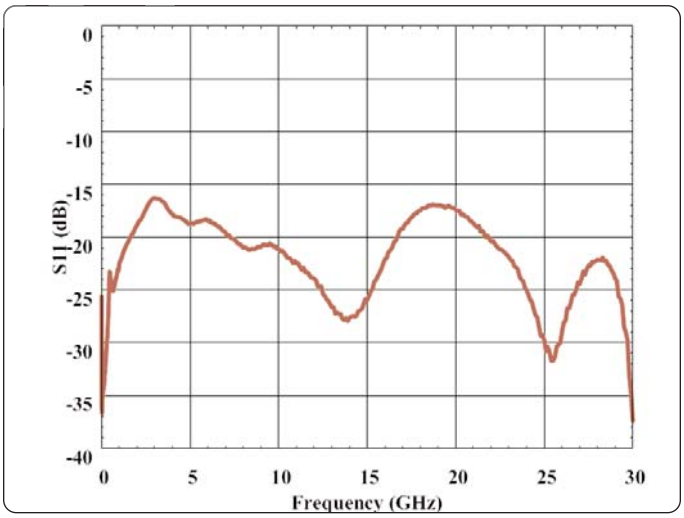

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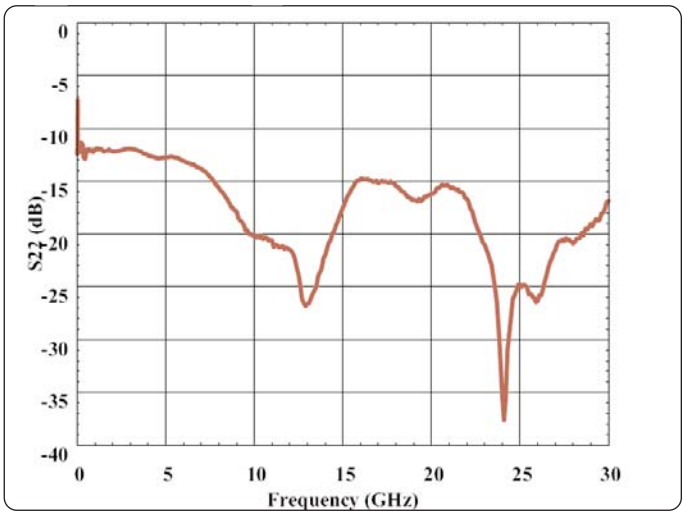

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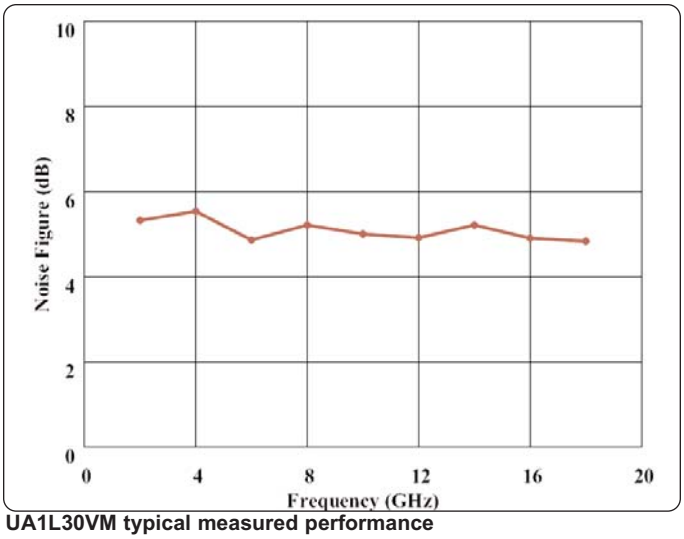

UA1L30VM typical measured performance
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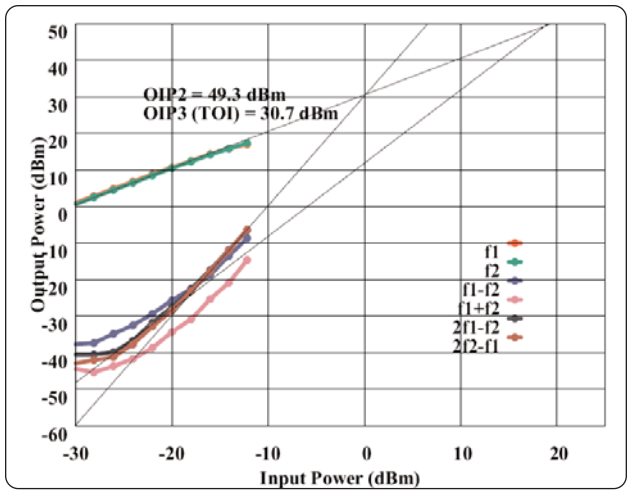
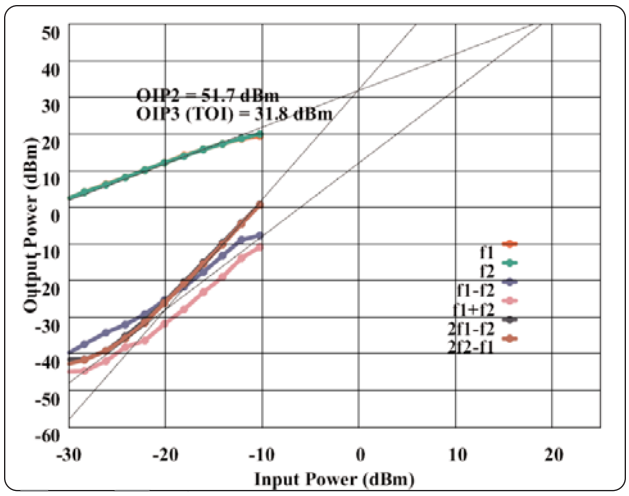
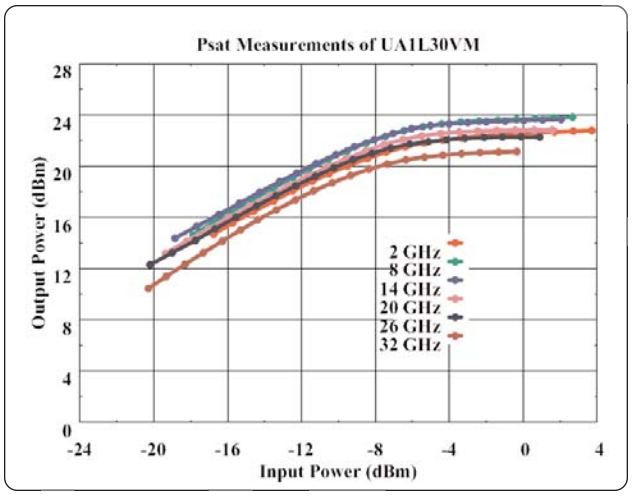


IMD Performance of UA1L30VM @ 10 GHz



IMD Performance of UA1L30VM @ 4 GHz



UA1L30VM typical measured performance
Bias: Vd1= Vd2= Vd3 =7V, Vg1=Vg2=Vg3 =–0.05 V

UA1L30VM Options

OPT001: with Output Power Detector

OPT002: with Low Noise Figure Option (Less Output Power)

OPT003: with Performance Specifications to 40GHz

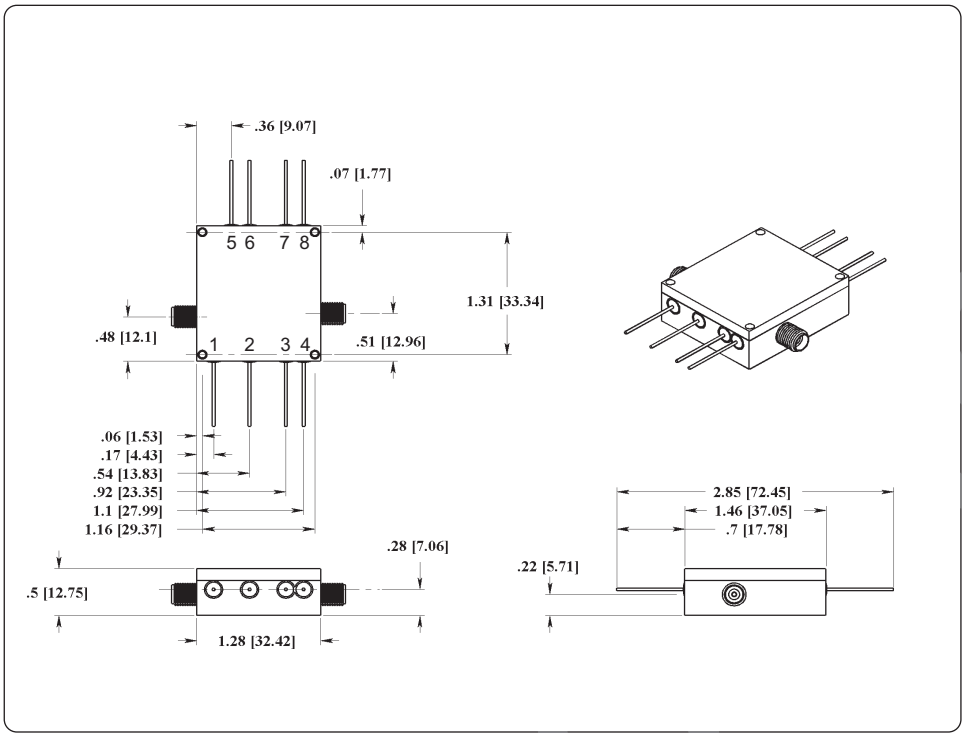
OPT004: with Peak Power Detector

OPTSBB: with Bias Board

Operating Specifications

Parameter	Description	Minimum	Typical	Maximum
Vdd1 (V)	First Drain Voltage	—	+7	+8
Vdd2 (V)	Second Drain Voltage	—	+7	+8
Vdd3 (V)	Third Drain Voltage	—	+7	+8
Id1 (mA)	First Drain Current	—	85	—
Id2 (mA)	Second Drain Current	—	150	—
Id3 (mA)	Third Drain Current	—	240	—
Vg1 (V)	First Gate Voltage	–1	–0.2 to 0	+0.5
Vg2 (V)	Second Gate Voltage	–1	–0.2 to 0	+0.5
Vg3 (V)	Third Gate Voltage	–1	–0.2 to 0	+0.5
Pdc (W)	Power Dissipation	—	3.4	—
Tbs (°C)	Case Temperature	—	—	75**

** Four threaded holes are provided for convenient heatsink attachment. The package body temperature must not exceed Tbs maximum.



Physical Characteristics

(all measurements in inches[mm])

DC pin diameter is 0.03in [0.76mm]

Mounting holes: 2-56 Through, x4

UA1L30VM Pin Definition

Pin	Function	Operational Notes
RFin	RF Input	K-Connector (f)
RFout	RF Output	K-Connector (f)
1 (Vg1)	1st stage gate bias	Adjust for optimum gain (-0.2 V to 0 V typical)
2 (Vg2)	2nd stage gate bias	Adjust for optimum gain (-0.2 V to 0 V typical)
3 (Vg3)	3rd stage gate bias	Adjust for optimum gain (-0.2 V to 0 V typical).
4 (Det)	RF Power Detector	(option)
5 (Vd1)	1st stage drain bias	Set at typical operating specification, adjust for desired amplitude
6 (Vd2)	2nd stage drain bias	Set at typical operating specification, adjust for desired amplitude
7 (Vd3)	3rd stage drain bias	Set at typical operating specification, adjust for desired amplitude
8 (Ref)	RF Power Reference	(option)

Bias Recommendations (in order):

1) Bias gates; 2) Bias Drains; 3) Adjust for the optimum gain