

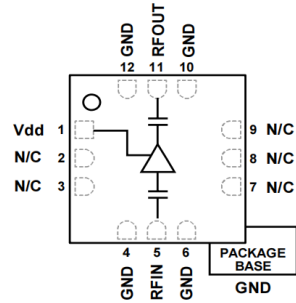
Performance Characteristics

- Frequency band: 8GHz~12GHz
- Noise factor: 0.8dB
- Gain:25dB
- Output P-1dB:14dBm
- Power supply: +5V@32mA
- Package size: 3×3mm

typical application

- base station communication
- wireless infrastructure
- automotive electronics
- Instrumentation

Functional Diagram



summary

The CWA0812SP3 is a GaAs MMIC low noise amplifier with a frequency range covering 8-12 GHz and an in-band noise figure of 0.8 dB. The chip is powered by a single +5V supply.

Electrical Performance Table (TA=+ 25°C , VD=5V)

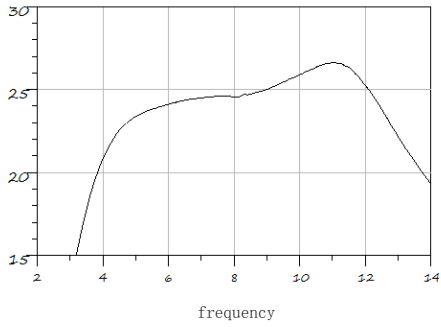
norm	minimum value	typical value	maximum values	unit (of measure)
frequency range	8-12			GHz
coefficient of noise	-	0.8	-	dB
gain (electronics)	-	25	-	dB
Input Return Loss	-	20	-	dB
Output Return Loss	-	18	-	dB
Output P1dB	-	14	-	dBm
Operating Current	-	33	-	mA

Utilization parameters (Exceeding any of these maximum limits may result in permanent damage.)

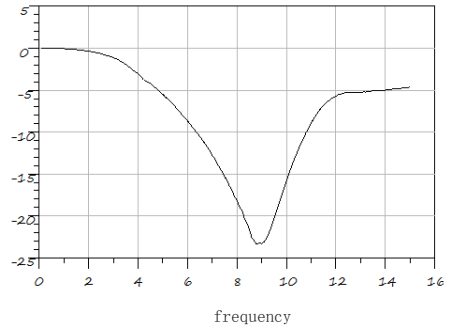
input power	15dBm
input voltage	+7V
Storage temperature	-65°C-150°C
operating temperature	-55°C-85°C

test curve

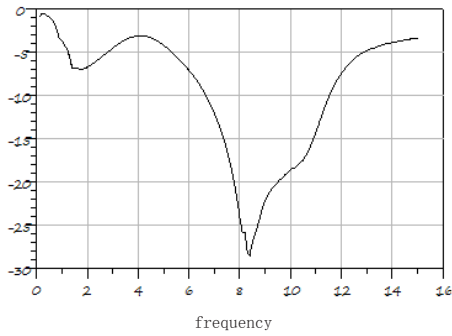
gain (electronics)



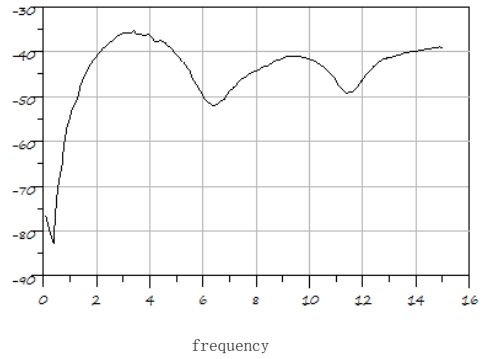
Input Return



Input Return Loss

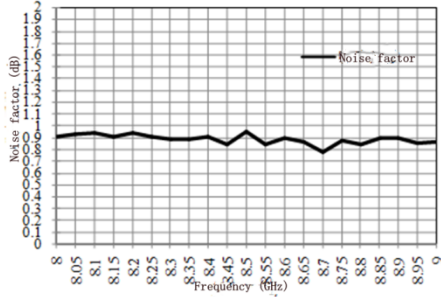


Reverse Isolation

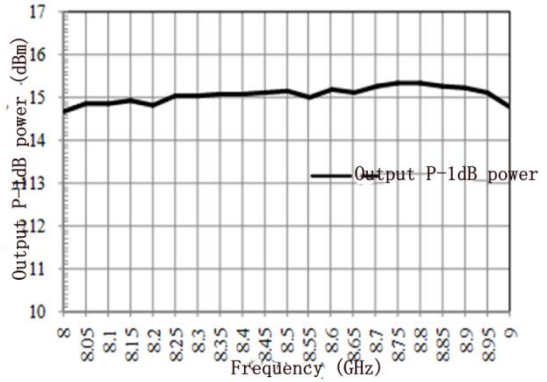


test curve

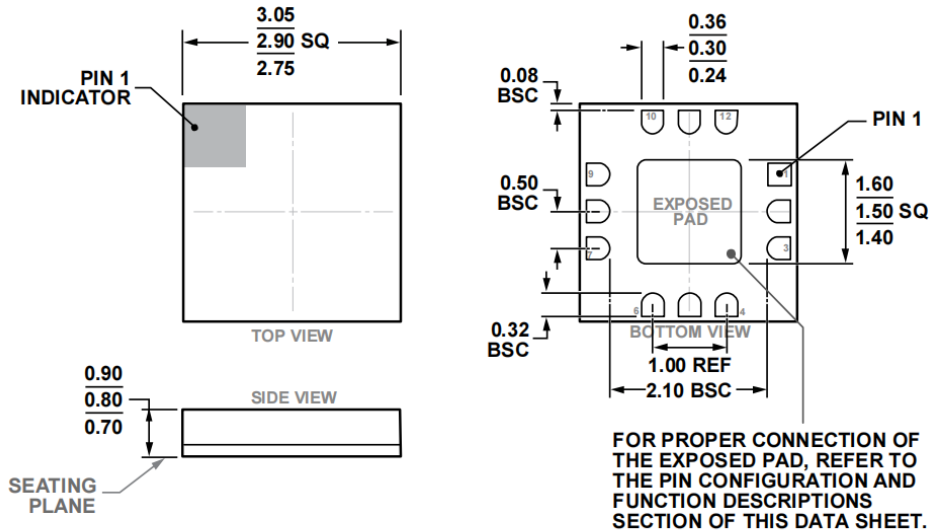
coefficient of noise



1dB compression point output power

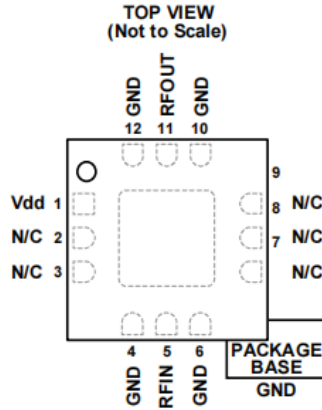


Outline Drawing



12-Terminal Leadless Chip Carrier (LCC)
(E-12-4)
Dimensions shown in millimeters

Pin Descriptions



Pin Number	Function	Description	Interface Schematic
1	Vdd	Power Supply Voltage for the amplifier. External bypass capacitors of 100 pF, 1000pF, and 2.2 μ F are required.	
2, 3, 7-9	N/C	No connection required. These pins may be connected to RF/DC ground without affecting performance.	
4, 6, 10, 12	GND	Package bottom has an exposed metal paddle that must also be connected to RF/DC ground.	
5	RFIN	This pin is AC coupled and matched to 50 Ohms from 21 - 29 GHz.	
11	RFOUT	This pin is AC coupled and matched to 50 Ohms from 21 - 29 GHz.	

Application Circuit

Component	Value
C1	100 pF
C2	1,000 pF
C3	2.2 μ F

