MGA-16216

Dual LNA for Balanced Application 1440-2350 MHz

Data Sheet

Description

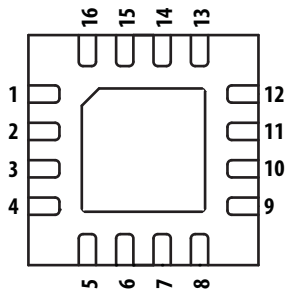
Avago Technologies' MGA-16216 is an ultra low-noise high linearity amplifier pair with built-in active bias and shutdown features for balanced applications in the 1950 MHz band. Shutdown functionality is achieved using a single DC voltage input pin. High linearity is achieved through the use of Avago Technologies' proprietary GaAs Enhancement-mode pHEMT process1. It is housed in a miniature 4.0 x 4.0 x 0.85 mm3 16-pin Quad Flat No-lead (QFN). The compact footprint coupled with ultra low noise and high linearity makes MGA-16216 an ideal choice for basestation transmitters and receivers.

Component Image

4.0 x 4.0 x 0.85 mm^3 16-Lead QFN

Note:
Package marking provides orientation and identification
"16116" = Device Code
"YYWW" = Date Code identifies year and work week of manufacturing
"XXXX" = Last 4 digit of assembly lot number

Pin Configuration



Pin	Use	Pin	Use
1	RFIN1	9	RFOUT2
2	GND	10	GND
3	GND	11	GND
4	RFIN2	12	RFOUT1
5	Bias_out2	13	Not used
6	Vsd2	14	Bias_in1
7	Bias_in2	15	Vsd1
8	Not used	16	Vias_out2

Features

- Ultra Low Noise Figure
- Variable Bias and Shutdown functionality
- High IIP3:+18dBm typ.
- GaAs E-pHEMT Technology [1]
- Small package size: 4.0 x 4.0 x 0.85 mm^3
- RoHS and MSL1 compliant.

Typical Performances

1950 MHz @ 4.8V, 55mA (typ per amplifier)

- Gain : 18.6 dB
- NF : 0.317 dB [2]
- IIP3 : 17.5 dBm
- P1dB : 19.5 dBm
- Shutdown voltage range Vsd > 1.5V
- Total shutdown current (Vsd1, Vsd2 = 3V) : 4.8mA

Applications

- Basestation receivers and transmitters in balanced configuration.
- Ultra low-noise RF amplifiers.

Notes:
1. Enhancement mode technology employs positive Vgs, thereby eliminating the need of negative gate voltage associated with conventional depletion mode devices.
2. Measured at RFin pin of packaged part, other losses deembedded.
3. Good RF practice requires all unused pins to be grounded.

Attention: Observe precautions for handling electrostatic sensitive devices.
ESD Machine Model = 90 V
ESD Human Body Model = 600 V
Refer to Avago Application Note A004R: Electrostatic Discharge, Damage and Control.

Absolute Maximum Rating [1] T_A=25°C

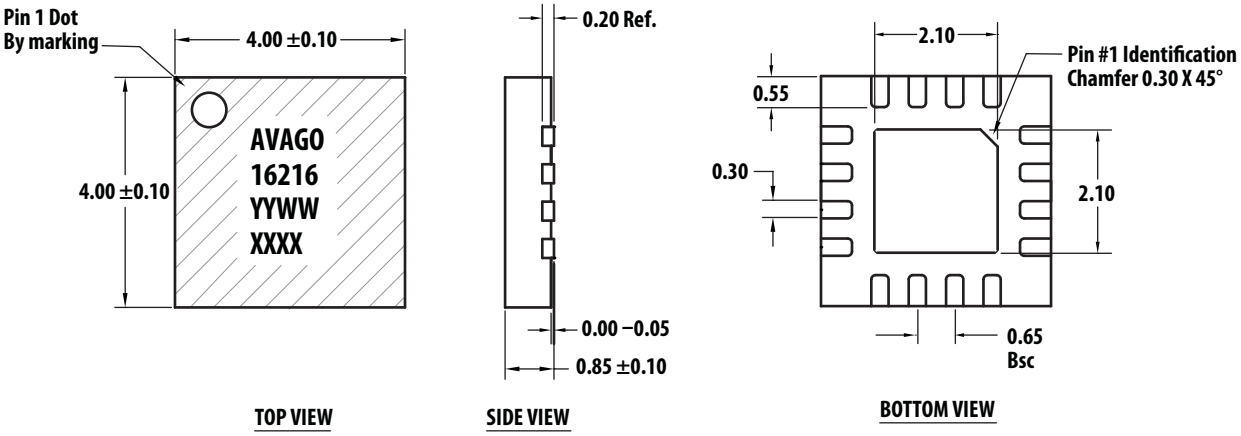
Symbol	Parameter	Units	Absolute Maximum
Vdd	Drain Voltage, RF output to ground	V	5.5
Idd	Drain Current	mA	100
Vsd	Shutdown Voltage	V	5.5
Pin	CW RF Input Power with Vsd=0V	dBm	27
Pin	CW RF Input Power with Vsd=3V	dBm	27
Pd	Power Dissipation	mW	550
Tj	Junction Temperature	°C	150
Tstg	Storage Temperature	°C	-65 to 150

Thermal Resistance [3]

(Vd=4.8V, Id= 52.5 mA, Tc=100 °C)
θjc = 43 °C/W

Notes:
1. Operation of this device is excess of any of these limits may cause permanent damage.
2. Source lead temperature is 25 °C. Derate 23 mW/°C for Tc > 126 °C.
3. Thermal resistance measured using 150 °C Infra-Red Microscopy Technique.

Package Dimensions



Part Number Ordering Information

Part Number	No. of Devices	Container
MGA-16216 - TR1G	1000	7 inch Reel
MGA-16216- BLKG	100	Antistatic Bag

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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