

High Dynamic Range LNA, 800 - 1000 MHz

V 4.00

AM50-0011

Features

- Ideal for Base Station Applications
- High Gain: 17dB @ 900 MHz
- Low Noise Figure: ≤ 1.0 dB @ 900 MHz
- Single Supply +5 VDC

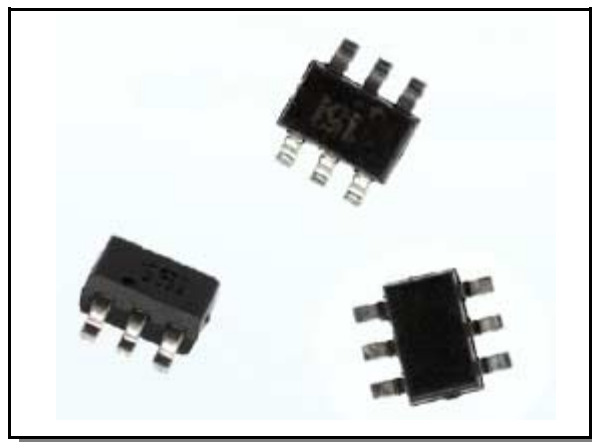
Description

M/A-COM's AM50-0011 is a high dynamic range, GaAs MMIC, low noise amplifier in a low-cost SOT-26 package. It employs external matching to obtain optimum noise figure and intercept performance. The AM50-0011 may be operated with supply voltages of +5 V.

The AM50-0011 is ideally suited for use where low noise figure, high gain, and high dynamic range are required. Typical applications included receiver front ends in AMPS, GSM and ETACS base stations. It may also be used as an IF amplifier in certain other communication systems.

The AM50-0011 is fabricated using a low-cost 0.5-micron gate E-D SAGFET GaAs process. This process features full passivation for increased reliability. The AM50-0011 is 100% RF tested to ensure performance specification compliance.

SOT-26 Plastic Package



Pin Configuration

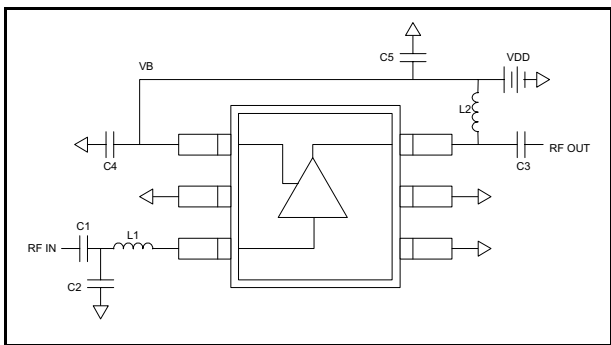
Pin No.	Function	Pin No.	Function
1	VB	4	GND
2	GND	5	GND
3	RF IN	6	RF OUT

Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50\Omega$, $F = 900$ MHz, $\text{PIN} = -20$ dBm, Supply Voltage = 5V¹

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Gain	—	800 - 1000 MHz	dB	15.8	16.8	17.8
Noise Figure	—	800 - 1000 MHz	dB	—	0.95	1.3
Output P1 dB	—	800 - 1000 MHz	dBm	—	14	—
Input IP3	—	800 - 1000 MHz	dBm	—	13.5	—
Input VSWR	—	800 - 1000 MHz	—	—	1.5	—
Output VSWR	—	800 - 1000 MHz	—	—	1.7	—
Supply Current	—	800 - 1000 MHz	mA	—	40	60

1. All measurements are taken into a 50 Ohm system unless otherwise specified.

Schematic Including Off-Chip Components



Off-Chip Component Values

Part	Value
L1	6.8 nH
L2	68 nH
C1	1000 pF
C2	3.9 pF
C3	100 pF
C4	0.1 μ F
C5	0.1 μ F

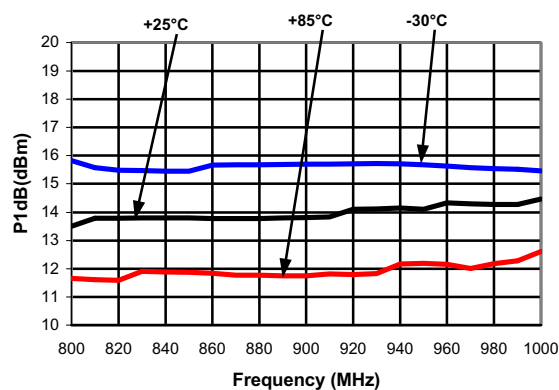
Absolute Maximum Ratings ²

Parameter	Absolute Maximum
Supply Voltage	6V
RF input Power	8 dBm
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

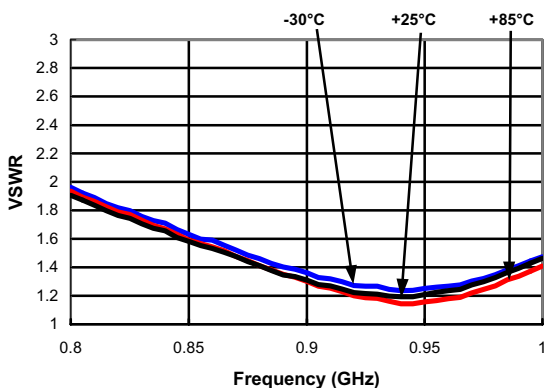
2. Operation of this device above any one of these parameters may cause permanent damage.

Typical Performance Curves

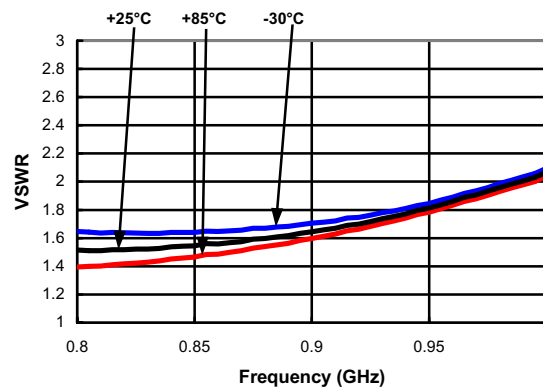
P1 dB vs. Frequency Vdd = 5 V



Input VSWR vs. Frequency



Output VSWR vs. Frequency



Specifications subject to change without notice.

■ North America: Tel. (800) 366-2266
 ■ Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
 ■ Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

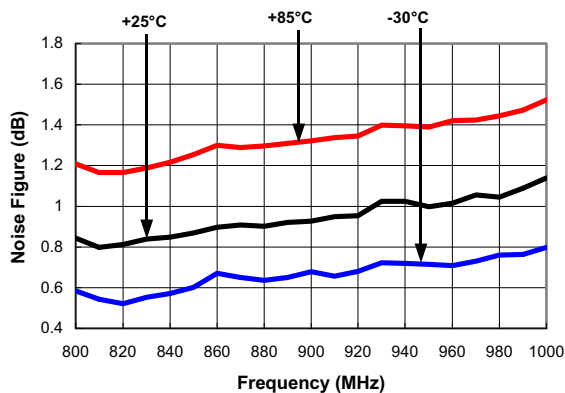
Visit www.macom.com for additional data sheets and product information.

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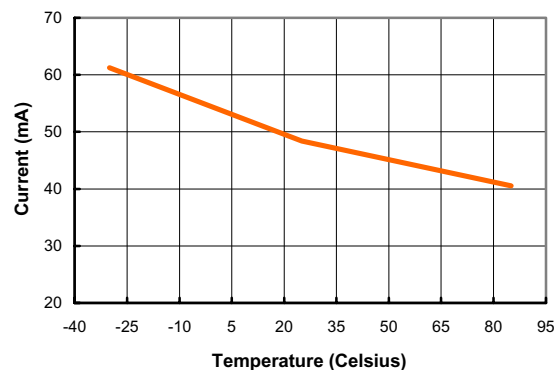
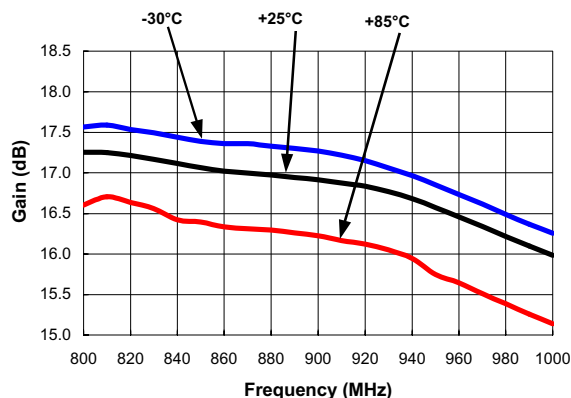
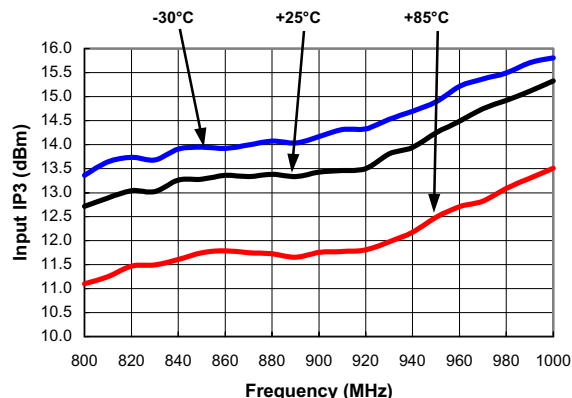
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Typical Performance Curves

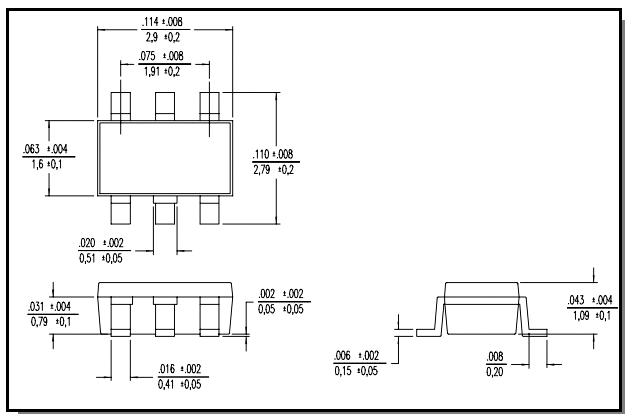
Noise Figure vs. Frequency



Current vs. Temperature

Gain vs. Frequency
Pin = -20 dBm, Vdd = 5.0 VoltsInput IP3 vs. Frequency
Pin = 20 dBm, Vdd = 5 Volts

SOT-26 Plastic Package



Ordering Information

Part Number	Package
AM50-0011	Bulk Packaging
AM50-0011TR	Tape and Reel (1K Reel)
AM50-0011TR-3000	Tape and Reel (3000)
AM50-0011SMB	Sample Test Board

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