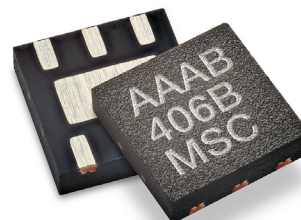


DC-10GHz, 15dBm Wideband General Purpose Amplifier

Features

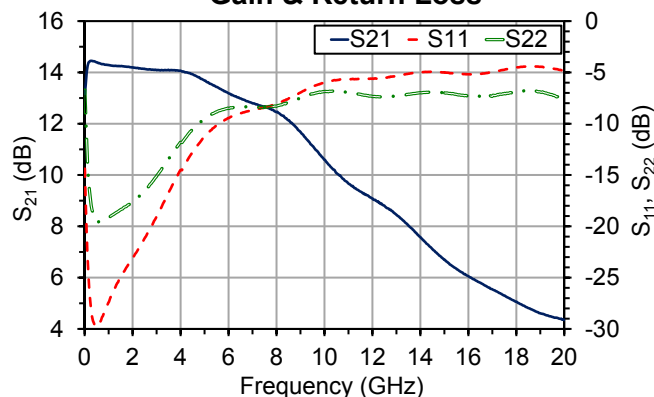
- $\pm 0.5\text{dB}$ $P_{3\text{dB}}$ flatness from DC-10GHz
- 1.3dB gain variation from -40 to $+85^\circ\text{C}$
- Compact amplifier solution
- Input and output matched to 50Ω
- 100% DC and RF tested
- 3x3 DFN-6 plastic overmold package



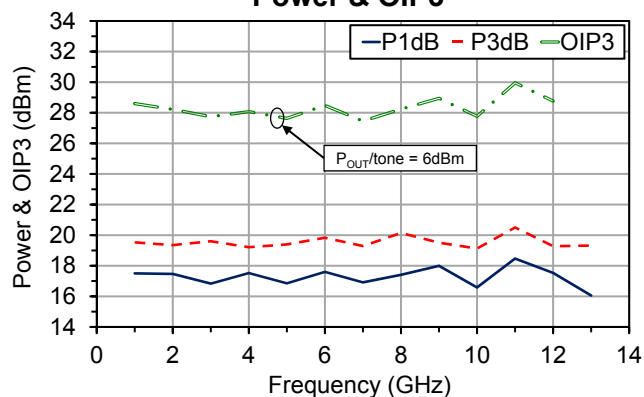
Applications

- Instrumentation
- Electronic warfare
- Microwave communications
- Radar

Gain & Return Loss



Power & OIP3



Typical Performance (CW, Typical Device, Evaluation Board): $T_A = 25^\circ\text{C}$, $V_{DD} = 4\text{V}$

Parameter	DC - 6GHz	DC - 10GHz	Units
Small Signal Gain	13.5	12.0	dB
Output Power, $P_{1\text{dB}}$	17	17	dBm
Output Power $P_{3\text{dB}}$	19	19	dBm
Output IP3	28	28	dBm
I_{DD}	45		mA

Table 1: Absolute Maximum Ratings, Not Simultaneous

Parameter	Rating	Units
Drain Voltage (V_{DD})	+4.5	V
Input Power (P_{IN})	TBD (6 est)	dBm
Channel Temperature (T_C)	150 ¹	°C
Operating Ambient Temperature (T_A)	-55 to +85	°C
Storage Temperature	-65 to +150	°C
Thermal Resistance, Channel to Die Backside (R_{TH})	TBD	°C/W

¹ MTTF > 10⁸ hours at T_C = 150°C



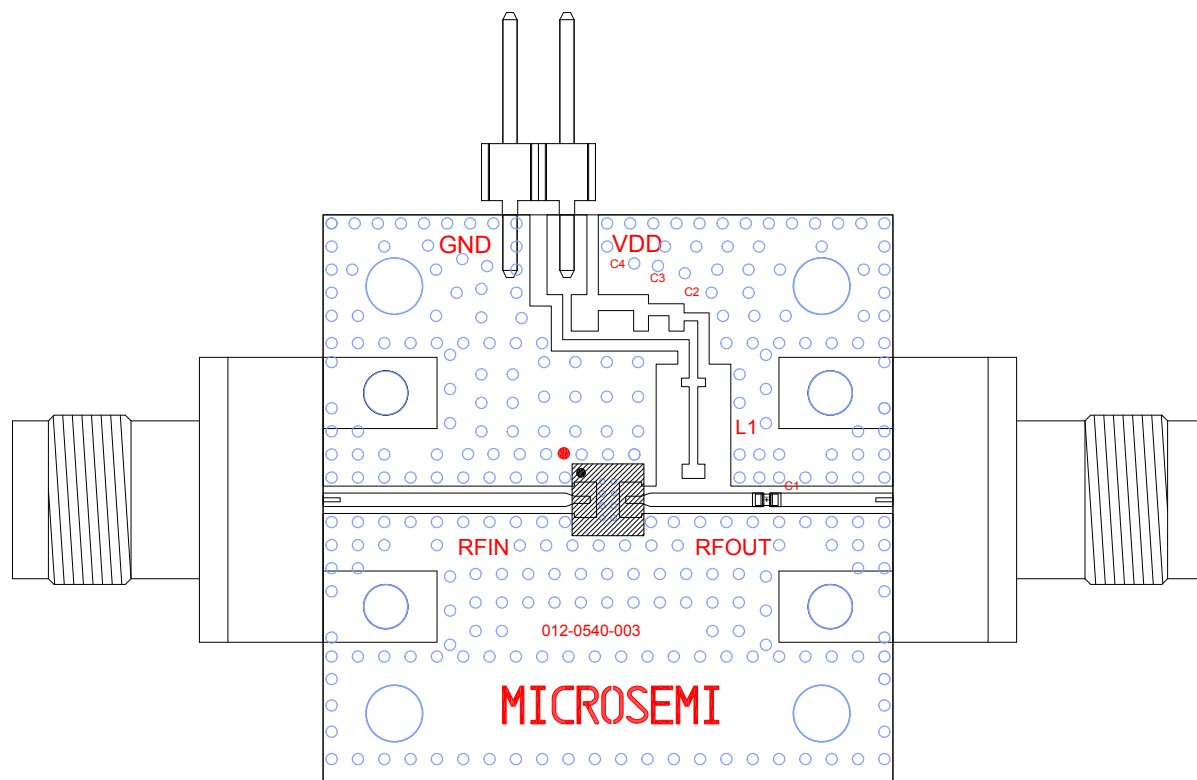
Caution, ESD
Sensitive Device

Table 2: Specifications (CW, 100% Test): T_A = 25°C, V_{DD} = 4.0V

Parameter	Frequency	Min	Typ	Max	Units
I_{DD}	-	TBD	45	TBD	mA
Small Signal Gain	10GHz	TBD	TBD	-	dB
Output Power, P_{1dB}	10GHz	TBD	TBD	-	dBm

Evaluation Board

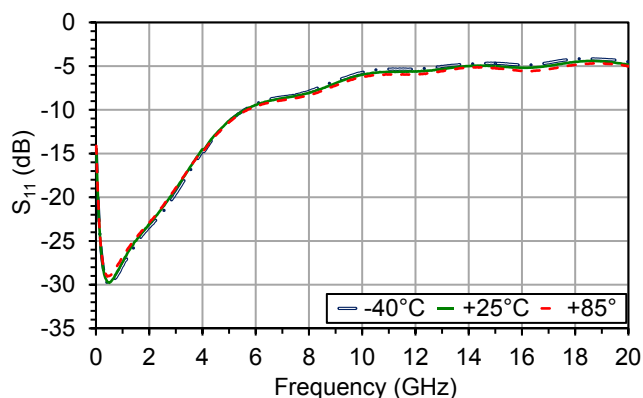
With SMK 2.92mm Connectors



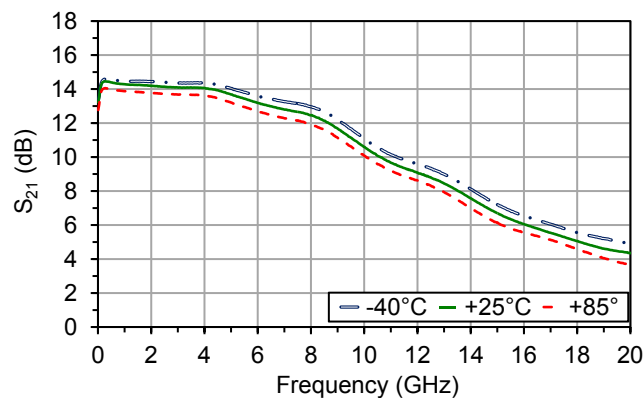
Typical Performance

$V_{DD} = 4V$, $I_{DD} = 45mA$, $T_A = 25^\circ C$, in evaluation board, unless otherwise noted

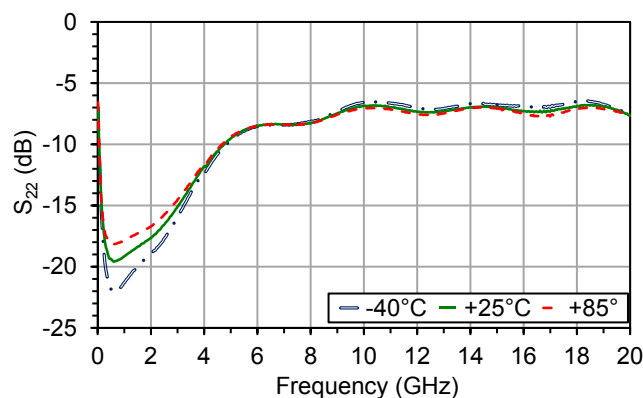
S_{11} Over Temperature



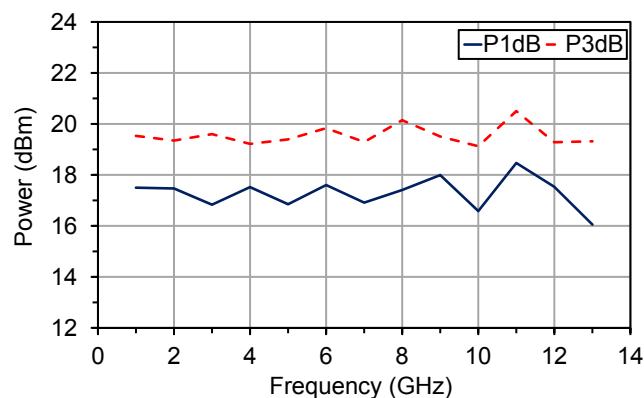
S_{21} Over Temperature



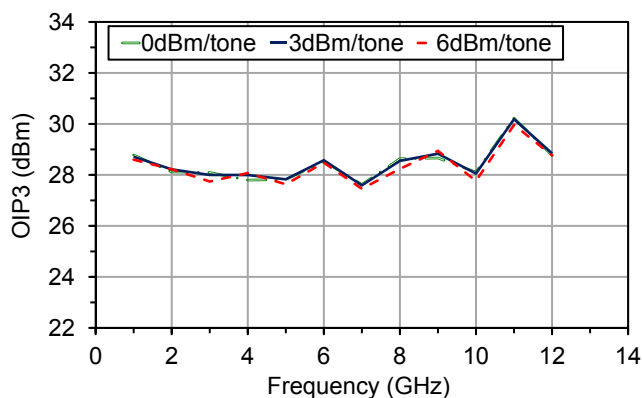
S_{22} Over Temperature



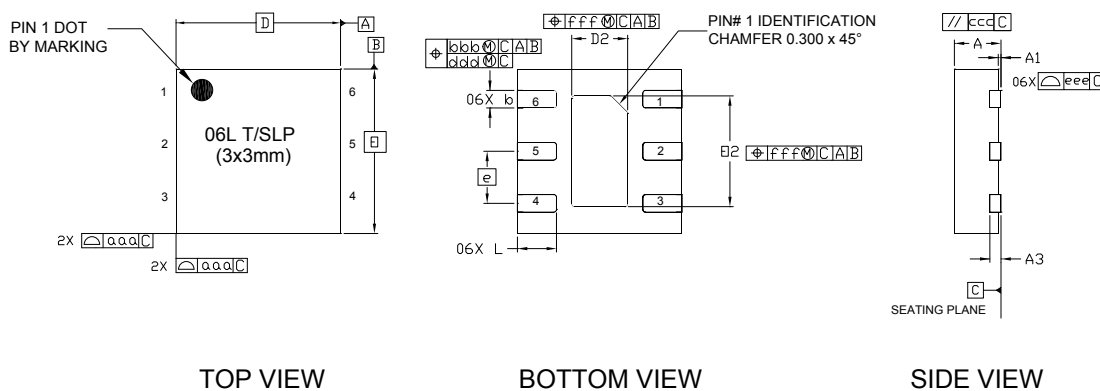
Output Power



Output IP3



Microsemi QA Package Outline



NOTE:

DIMENSIONS ARE IN MM

Dimensional Ref.			
REF.	Min.	Nom	Max.
A	0.700	0.750	0.800
	0.800	0.850	0.900
A1	0.000	—	0.050
A3	0.203 REF		
D	3.000 BSC		
E	3.000 BSC		
D2	0.970	1.020	1.070
E2	1.970	2.020	2.070
b	0.270	0.320	0.370
e	0.950 BSC		
L	0.662	0.712	0.762
Dimensional Tol.			
aaa	0.050		
bbb	0.100		
ccc	0.050		
ddd	0.050		
eee	0.080		
fff	0.050		

Table 3: Pinout

Pad #	Description
1,3,4,6	Ground
2	RF _{IN} , Pad is DC Coupled
5	RF _{OUT} , Pad is DC Coupled
Exposed Pad	Ground, thermal path

Information contained in this document is proprietary to Microsemi. This document may not be modified in any way without the express written consent of Microsemi. Product processing does not necessarily include testing of all parameters. Microsemi reserves the right to change the configuration and performance of the product and to discontinue product at any time.

Microsemi Corporate Headquarters

One Enterprise, Aliso Viejo CA 92656 USA
Within the USA: +1 (949) 380-6100
Sales: +1 (949) 380-6136
Fax: +1 (949) 215-4996

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for communications, defense and security, aerospace, and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs, and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; security technologies and scalable anti-tamper products; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, Calif. and has approximately 3,400 employees globally. Learn more at www.microsemi.com.

© 2014 Microsemi Corporation. All rights reserved. Microsemi and the Microsemi logo are trademarks of Microsemi Corporation. All other trademarks and service marks are the property of their respective owners.