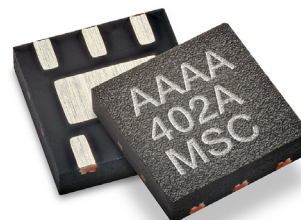


DC-12GHz, 18dBm Wideband General Purpose Amplifier

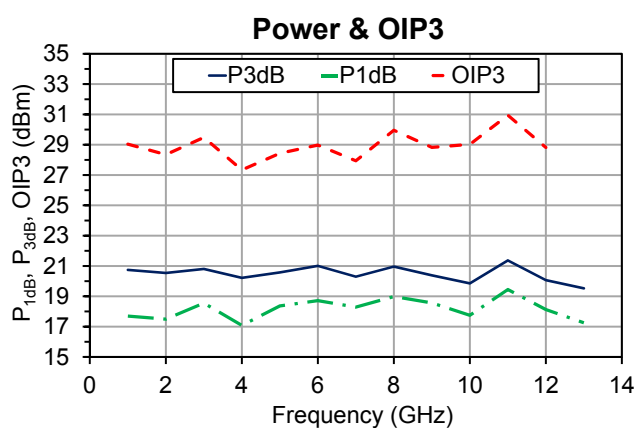
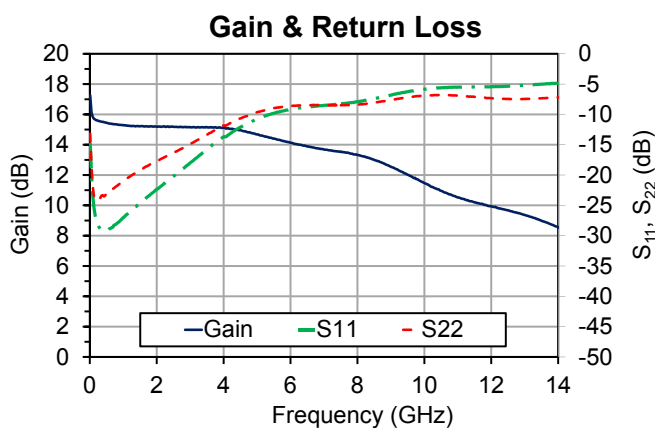
Features

- $\pm 0.5\text{dB}$ $P_{3\text{dB}}$ flatness
- 1.2dB 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



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

Parameter	DC - 6GHz	6 - 12GHz	Units
Small Signal Gain	15	12	dB
Output Power, $P_{1\text{dB}}$	18	18	dBm
Output Power $P_{3\text{dB}}$	21	20	dBm
Output IP3	29	29	dBm
I_{DD}	80		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



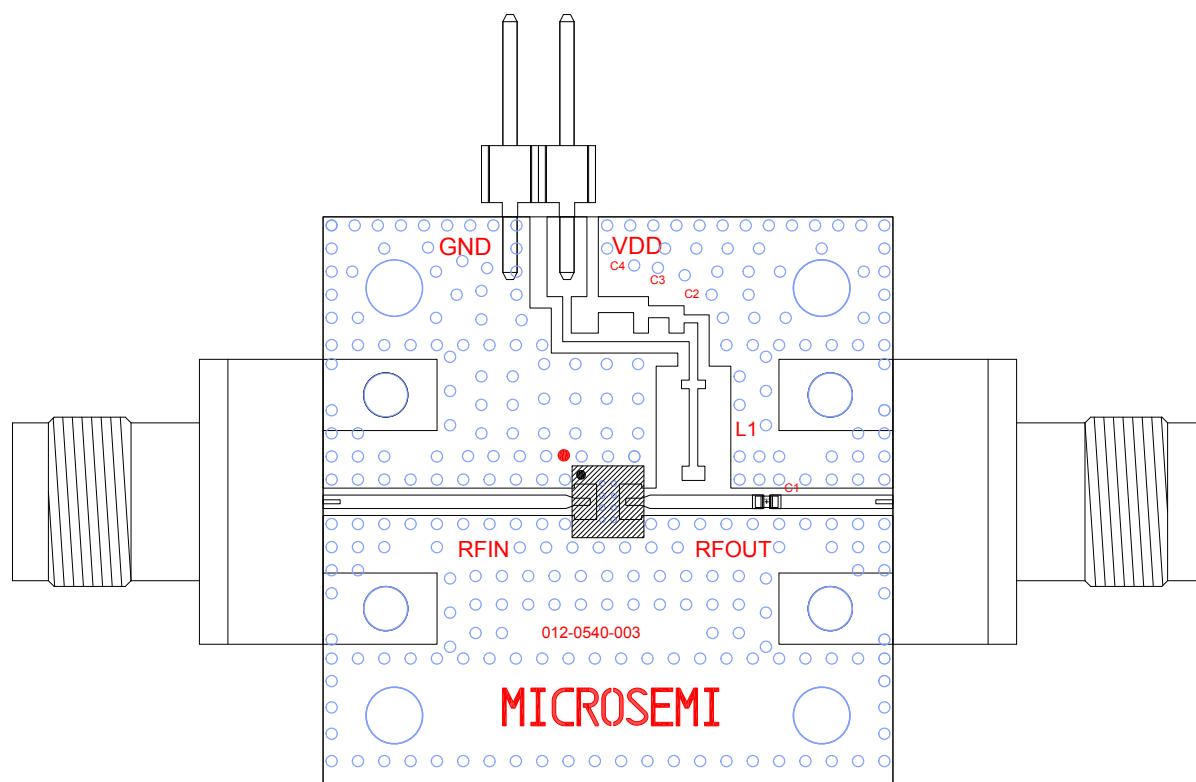
Caution, ESD
Sensitive Device

Table 2: Specifications (CW, 100% Test): T_A = 25°C, V_{DD} = 4V

Parameter	Frequency	Min	Typ	Max	Units
I_{DD}	-	TBD	80	TBD	mA
Small Signal Gain	12GHz	TBD	TBD	-	dB
Output Power, P_{1dB}	12GHz	TBD	TBD	-	dBm

Evaluation Board

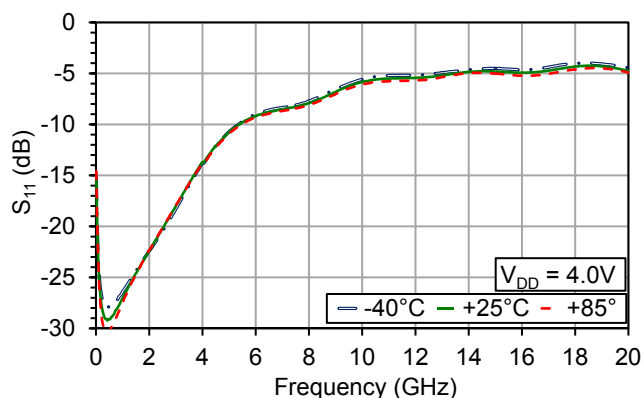
With SMK 2.92mm Connectors



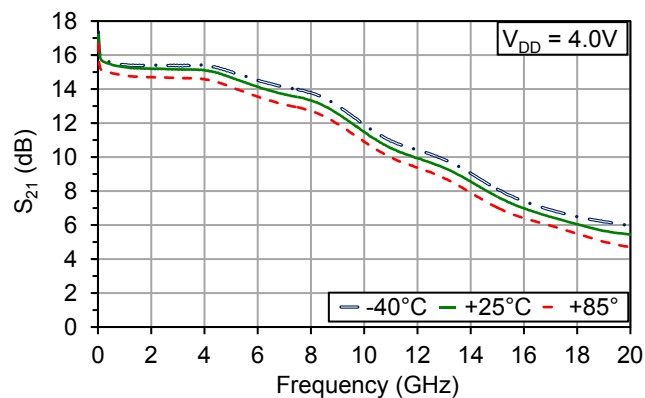
Typical Performance

$V_{DD} = 4V$, $I_{DD} = 80mA$, $T_A = 25^\circ C$, in evaluation board, unless otherwise noted

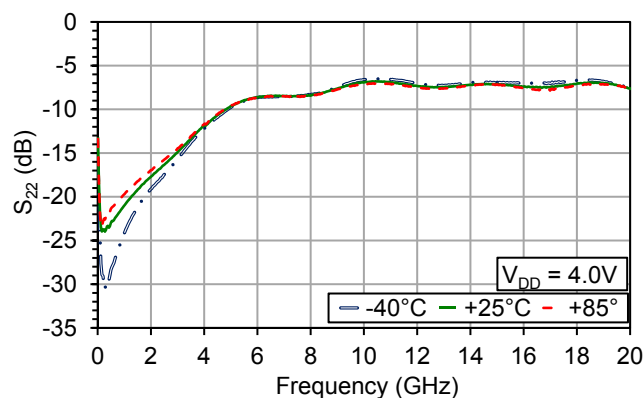
S_{11} Over Temperature



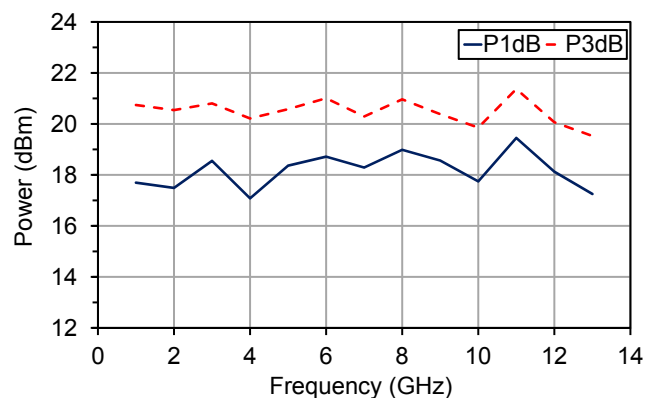
S_{21} Over Temperature



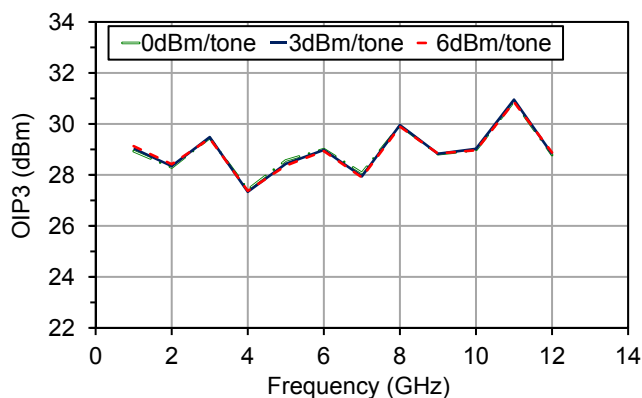
S_{22} Over Temperature



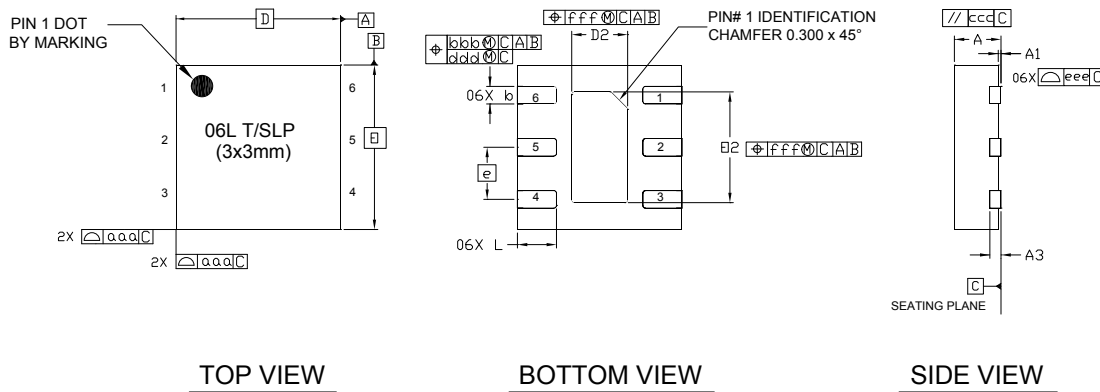
Output Power



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

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