

Features

- ⊙ DC - 3.5 GHz
- ⊙ +26dBm P_{1dB} at 1 GHz
- ⊙ +43dBm OIP3 at 1 GHz
- ⊙ 15.5dB Gain at 1GHz
- ⊙ 3.6 dB Noise Figure at 2GHz
- ⊙ 75 Ohm Input / Output Match
- ⊙ SOIC-8 Package Style

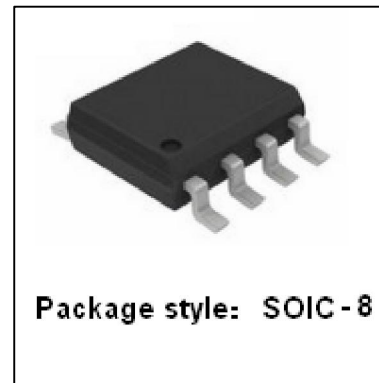
Description

The *F472* is a general-purpose buffer amplifier that offers high dynamic range in a low-cost surface-mount package. at 1000MHz the *F472* typically provides 15.5 dB of gain, +43 dBm Output IP3, and +26dBm P1dB. The *F472* consists of Darlington pair amplifiers using the high reliability InGaP/GaAs HBT process technology and only requires DC-blocking capacitors, a bias resistor, and an inductive RF choke for operation.

Applications

- ★ PA Driver Amplifier
- ★ CATV / FTTH
- ★ W-LAN / ISM
- ★ Wideband Instrumentation
- ★ IF&RF Applications

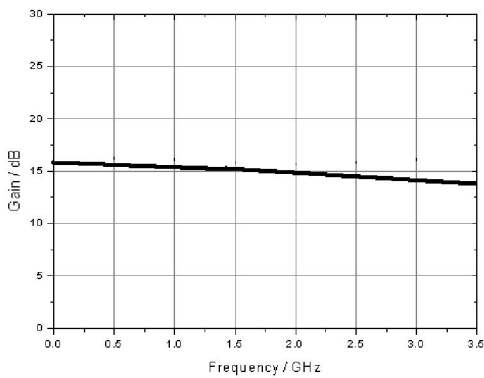
Functional Diagram



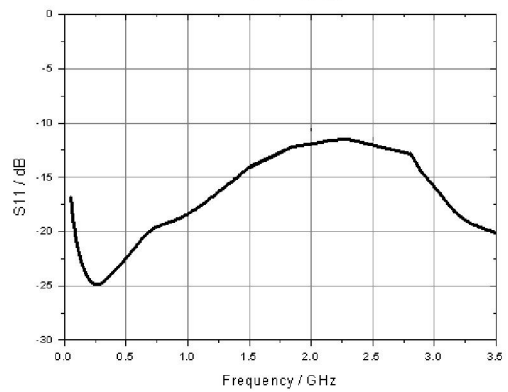
Electrical Characteristics (V_{cc}= 5V, T_A = +25°C)

Parameter	Min.	Typ.	Max.	Units	
Gain		DC~1.0GHz	15.5		dB
		1.0~2.0 GHz	15.0		
		2.0~3.5 GHz	14.5		
Input return Loss	DC ~3.5 GHz	11	16		dB
Output return Loss	DC ~3.5 GHz	13	16		dB
Reverse Isolation	DC ~3.5 GHz		24		dB
Output Power for 1 dB Compression (P1dB)		DC~1.0GHz	26		dBm
		1.0~2.0 GHz	25		
		2.0~3.5 GHz	20		
Output Third Order Intercept (IP3)		DC~1.0GHz	43		dBm
		1.0~2.0 GHz	39		
		2.0~3.5 GHz	32		
Noise Figure			3.6		dB
Device Voltage			5.0		V
Supply Current	140	156			mA

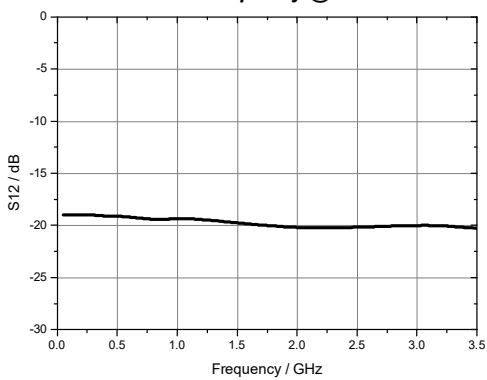
Gain vs. Frequency @ T=+25C



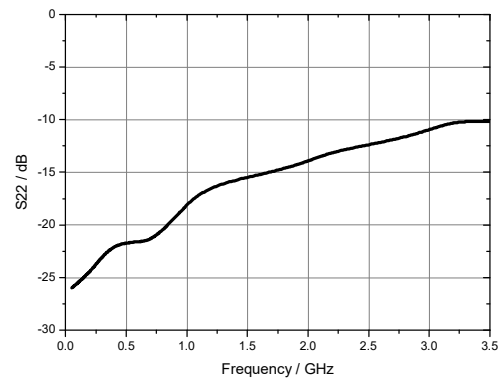
S11 vs. Frequency @ T=+25C



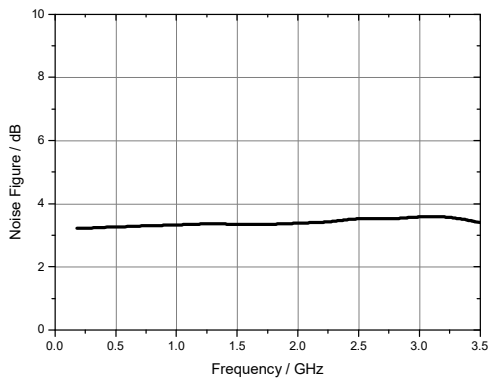
S12 vs. Frequency @ T=+25C



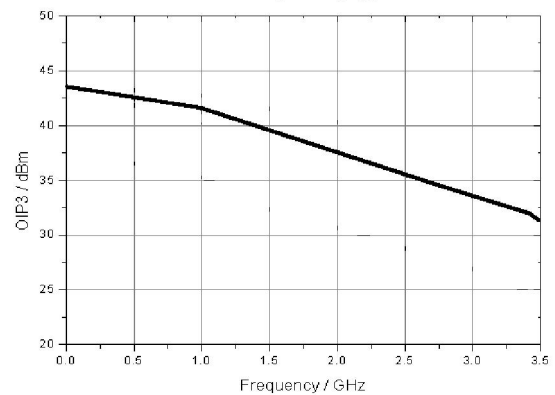
S22 vs. Frequency @ T=+25C



Noise Figure vs. Frequency @ T=+25C



OIP3 vs. Frequency @ T=+25C



F472

Absolute Maximum Ratings

Device Current	150mA
Storage Temperature	-65 to +150°C
Operating Temperature	-55 to +125°C
ESD Sensitivity (HBM)	Class 1C



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

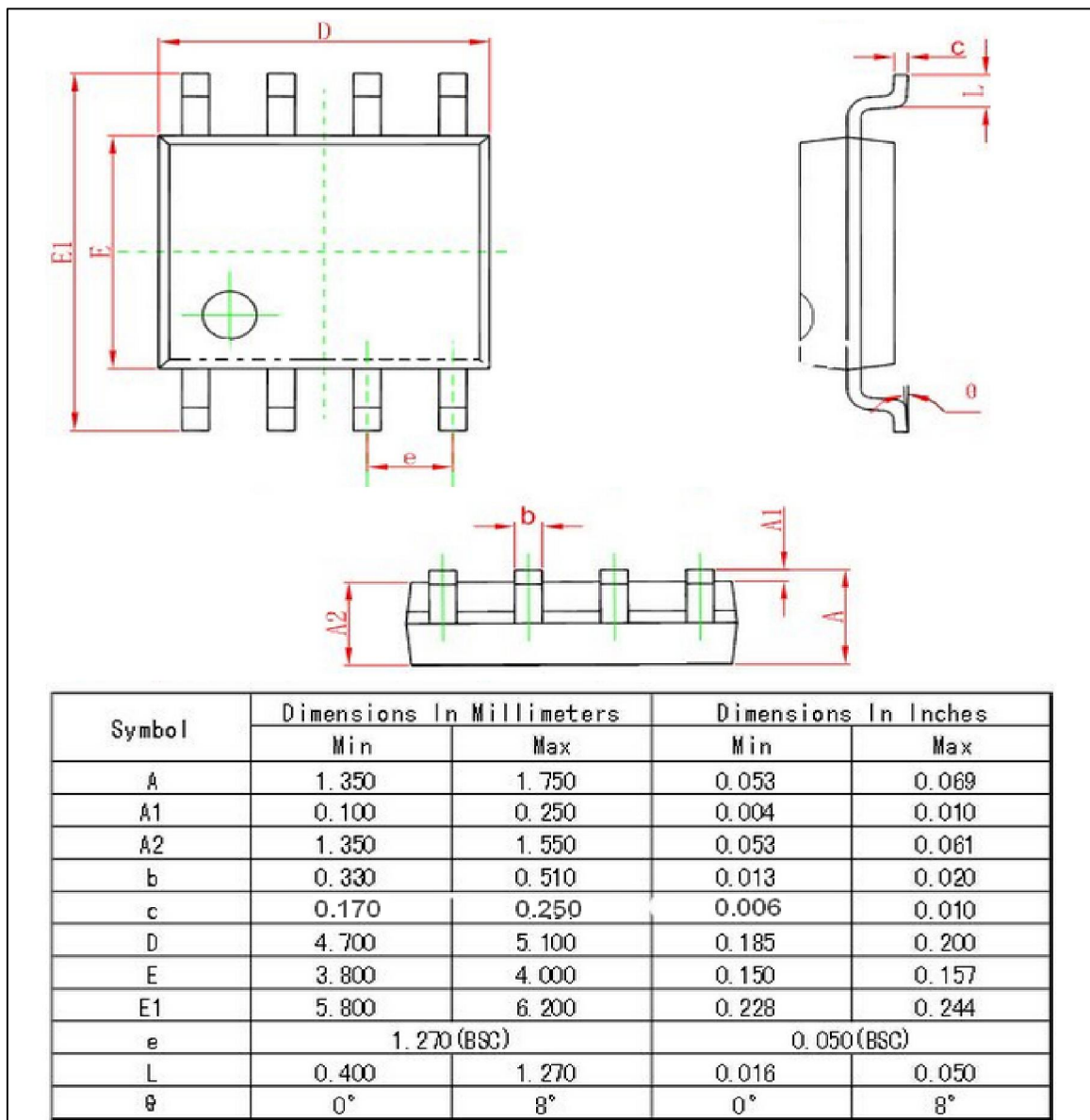
ESD Rating: Class 1C

Value: Passes between 1000 and 2000V

Test: Human Body Model (HBM)

Standard: JEDEC Standard JESD22-A114

Outline Drawing

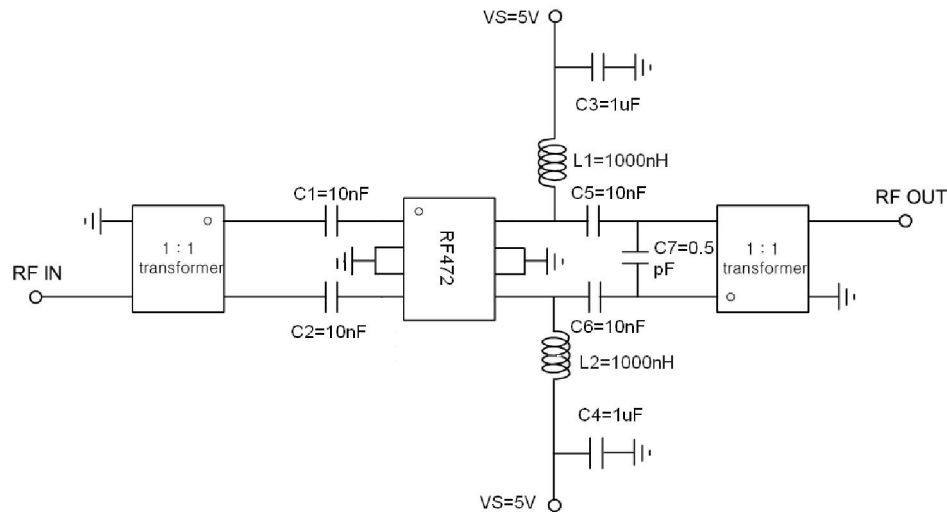


F472 Pin Descriptions

Pin number	Function	Description
1	RF _{IN1}	This pin is DC coupled; An off chip DC blocking capacitor is required.
4	RF _{IN2}	This pin is DC coupled; An off chip DC blocking capacitor is required.
2, 3, 6, 7	GND	These pins and package bottom must be connected to RF/DC ground.
5	RF _{OUT2}	RF output and DC Bias for the output stage.
8	RF _{OUT1}	RF output and DC Bias for the output stage.

Application Circuit

External blocking capacitors are required on RFIN and RFOUT.



Recommended Component Values

Component	Frequency	
	0.05GHz~1GHz	1GHz~3.5GHz
C1, C2, C5, C6	10nF	100pF
L1, L2	1000nH	33nH
C3, C4	1uF	1uF
C7	0.7pF	-