

Absolute Maximum Ratings

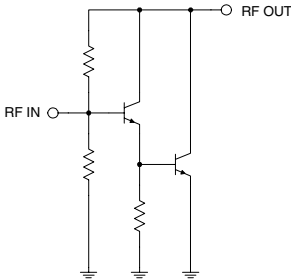
Parameter	Rating	Unit
Supply Current	75	mA
Input RF Power	+15	dBm
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-60 to +150	°C



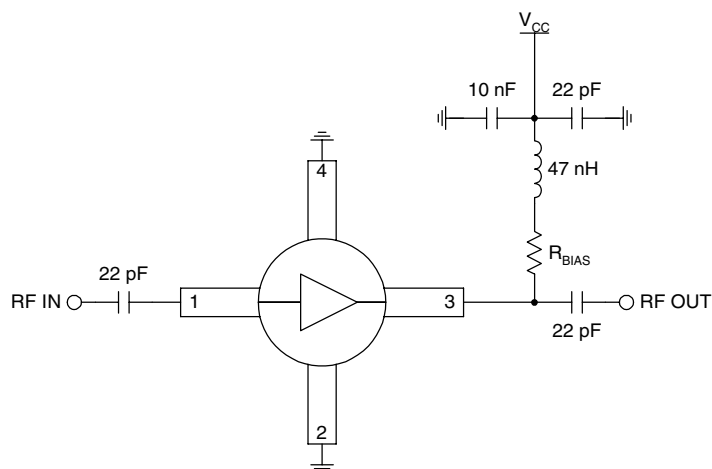
Caution! ESD sensitive device.

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Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					T=25 °C, V _D =3.6V, I _{CC} =40mA
Frequency Range		DC to 8000		MHz	
Gain	10	12.2		dB	Freq=100MHz
		12.1		dB	Freq=1000MHz
		11.8		dB	Freq=2000MHz
		11.5		dB	Freq=3000MHz
		11.3			Freq=4000MHz
		11.0			Freq=6000MHz
		10.2			Freq=8000MHz
Gain Flatness		±0.2		dB	100MHz to 2000MHz
Noise Figure		5.3		dB	Freq=2000MHz
Input VSWR		1.6:1			In a 50Ω system, DC to 3000MHz
		1.8:1			In a 50Ω system, 3000MHz to 8000MHz
Output VSWR		1.5:1			In a 50Ω system, DC to 3000MHz
		1.9:1			In a 50Ω system, 3000MHz to 8000MHz
Output IP ₃		+26		dBm	Freq=2000MHz±100kHz, P _{TONE} =-5dBm
Output P _{1dB}		+11.7		dBm	Freq=2000MHz
Reverse Isolation		16.6		dB	Freq=2000MHz
Thermal					I _{CC} =40mA, P _{DISS} =137mW
Theta _{JC}		213		°C/W	
Maximum junction temperature		115		°C	
Mean Time Between Failures		1.2x10 ⁴		years	T _{AMB} =+85 °C
Mean Time Between Failures		6.6x10 ⁶		years	T _{AMB} =+25 °C
Mean Time Between Failures		1.7x10 ¹¹		years	T _{AMB} =-40 °C
Power Supply					With 22Ω bias resistor
Operating Device Voltage	3.0	3.6	4.0	V	At pin 3 with I _{CC} =40mA
Operating Current		40		mA	

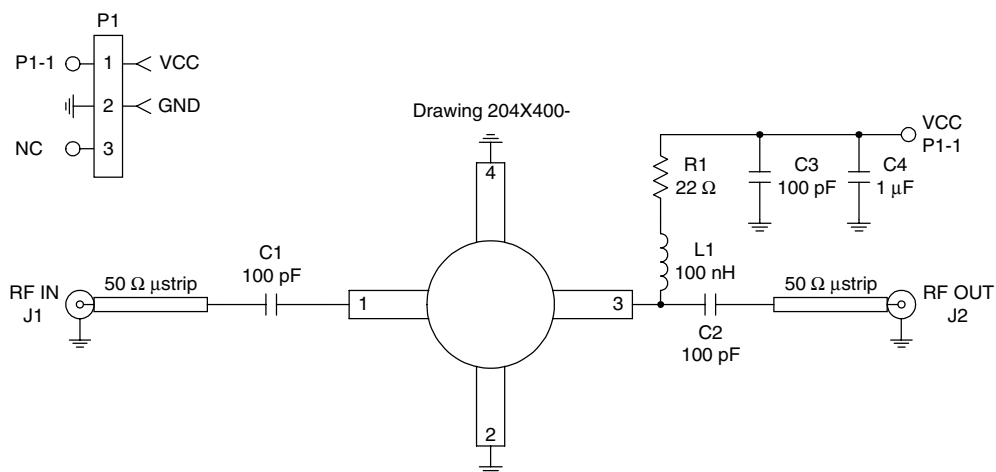
Pin	Function	Description	Interface Schematic
1	RF IN	RF input pin. This pin is NOT internally DC blocked. A DC blocking capacitor, suitable for the frequency of operation, should be used in most applications. DC coupling of the input is not allowed, because this will override the internal feedback loop and cause temperature instability.	
2	GND	Ground connection. Keep traces physically short and connect immediately to ground plane for best performance.	
3	RF OUT	RF output and bias pin. Biasing is accomplished with an external series resistor and choke inductor to V_{CC}. The resistor is selected to set the DC current into this pin to a desired level. The resistor value is determined by the following equation: $R = \frac{(V_{SUPPLY} - V_{DEVICE})}{I_{CC}}$ Care should also be taken in the resistor selection to ensure that the current into the part never exceeds 75 mA over the planned operating temperature. This means that a resistor between the supply and this pin is always required, even if a supply near 3.6V is available, to provide DC feedback to prevent thermal runaway. Because DC is present on this pin, a DC blocking capacitor, suitable for the frequency of operation, should be used in most applications. The supply side of the bias network should also be well bypassed.	
4	GND	Same as pin 2.	

Application Schematic



Evaluation Board Schematic

(Download [Bill of Materials](http://www.rfmd.com) from www.rfmd.com.)



Evaluation Board Layout

Board Size 1.195" x 1.000"

