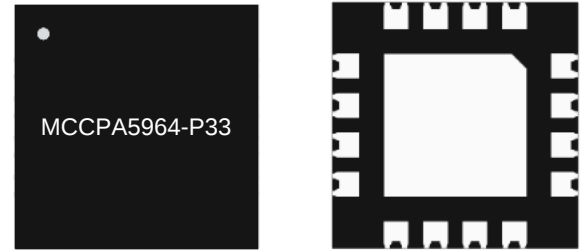


Product Overview

The MCCPA5964-P33 is a three-stage HBT general purpose power amplifier working at 5900-6400MHz. The input and output are both internally matched to 50Ω easily designed for general purpose pulse and CW signal wireless application.

ROHS compliant

Evaluation boards are available upon request.



16Pin 5×5mm QFN Package

Figure1.

Functional Block Diagram

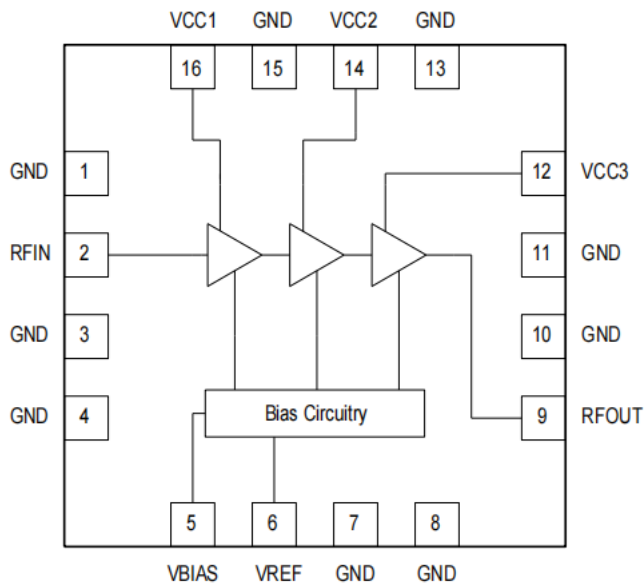


Figure2.

Key Features

- Frequency Range: 5900-6400MHz
- 25dB Gain
- 30% PAE at peak power@6.2GHz
- 33dBm peak power,CW
- Input/output internally matched to 50Ω
- Compact and low-cost 5mm×5mm QFN package (MSL3,260 per JEDEC J-STD-020)

Applications

- Business WIFI-Drone,Booster
- FDD and TDD Wireless Systems
- Active Antenna Array and Massive MIMO
- Customer Premises Equipment(CPE)

Ordering info

Part No.	Description
MCCPA5964-P33	7' Reel with 1500pcs

Pin Description

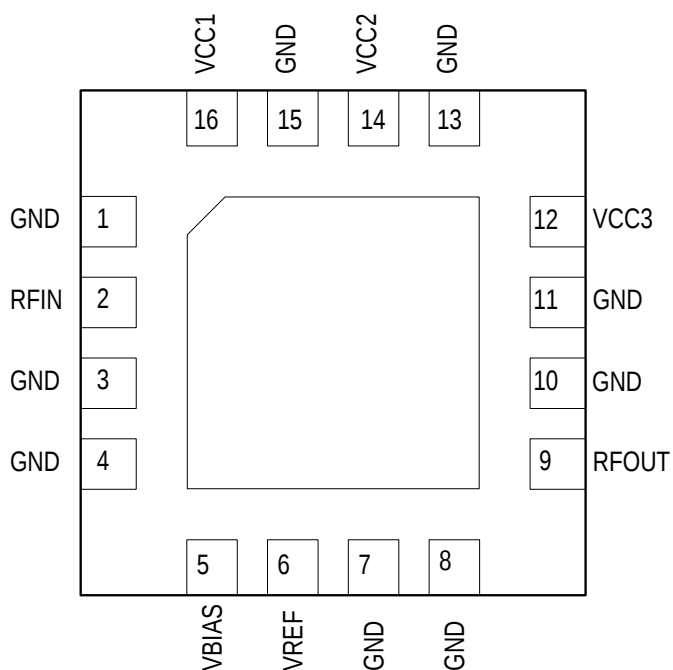


Figure 3. Pinout (Top View)

Pin	Name	Description	Pin	Name	Description
1	GND	Ground	9	RFOUT	RF output port
2	RFIN	RF input port	10	GND	Ground
3	GND	Ground	11	GND	Ground
4	GND	Ground	12	VCC3	Stage 3 collector voltage
5	VBIAS	Bias voltage	13	GND	Ground
6	VREF	Reference supply voltage	14	VCC2	Stage 2 collector voltage
7	GND	Ground	15	GND	Ground
8	GND	Ground	16	VCC1	Stage 1 collector voltage

Absolute Maximum Ratings¹

Parameter	Rating	Unit
Operating Temp,Tc	-40 to +85	
Operating Junction Temp,Tj	150	
Storage Temp,TSTG	-55 to+125	
Thermal Resistance,Rθjc		/W
Operating Voltage,VCC1,VCC2,VCC3,VBIAS	5.5	V
Inuput Power,PIN	13	dBm

Notes¹: Exceeding any one or a combination of the Absolute Maxium Rating conditions may cause permanent damage to the device. Extended application of the Absolute Maximum Rating conditions to the device mayreduce device reliability.

Recommended Operating Conditions

Parameter	Min	Typ	Max	Unit
Operating Frequency,F	5900		6400	MHz
Operating Temp,Tc	-40	25	85	
Operating Voltage VCC1,VCC2,VCC3,VBIAS		5	5.5	V
Reference Voltage,VREF	2.5	2.6	2.7	V
Reference Current,IREF		5		mA

Electrical Specifications¹

Parameter	Conditions	Min	Typ	Max	Unit
Frequency		5900	6200	6400	MHz
Output P3dB	CW signal		33		dBm
Gain@P3dB			25		dB
Power added efficiency	@P3dB,CW signal		30		%
Quiescent current			150		mA

Notes¹:VCC1=VCC2=VCC3=VBAS=5V,VREF=2.6V,F=6200 MHz,TC=25 , Input/Output Load=50Ω

Evaluation Board Schemic

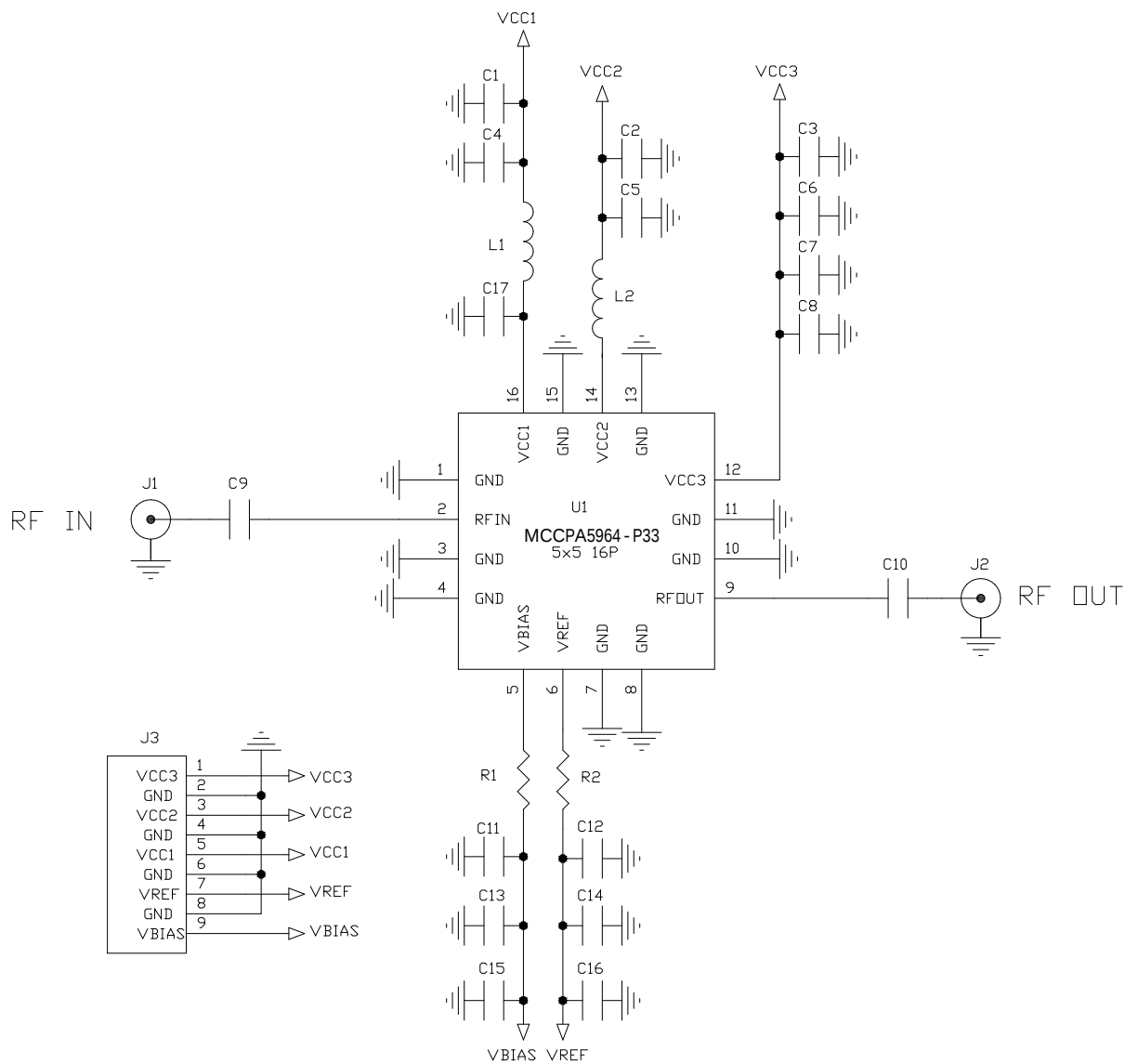


Figure 4. Evaluation Board Schemic

Evaluation Board Bill of Materials

Ref,Des	Value	Size
C9 C10 C17	Ceramic capacitor, GJM 2pF, 16V, +/-10%, X7R	0402/0603
C1 C2 C6 C15 C16	Ceramic capacitor, 4.7uF, 16V, +/-10%, X7R	1206
L1 L2 R1 R2	Resistor, 0Ω, 0.063W	0402
C4 C5 C7 C11 C12	Ceramic capacitor, 2.2nF, 16V, +/-10%, X7R	0402

Rest of the components on the schematic are not used in this part.

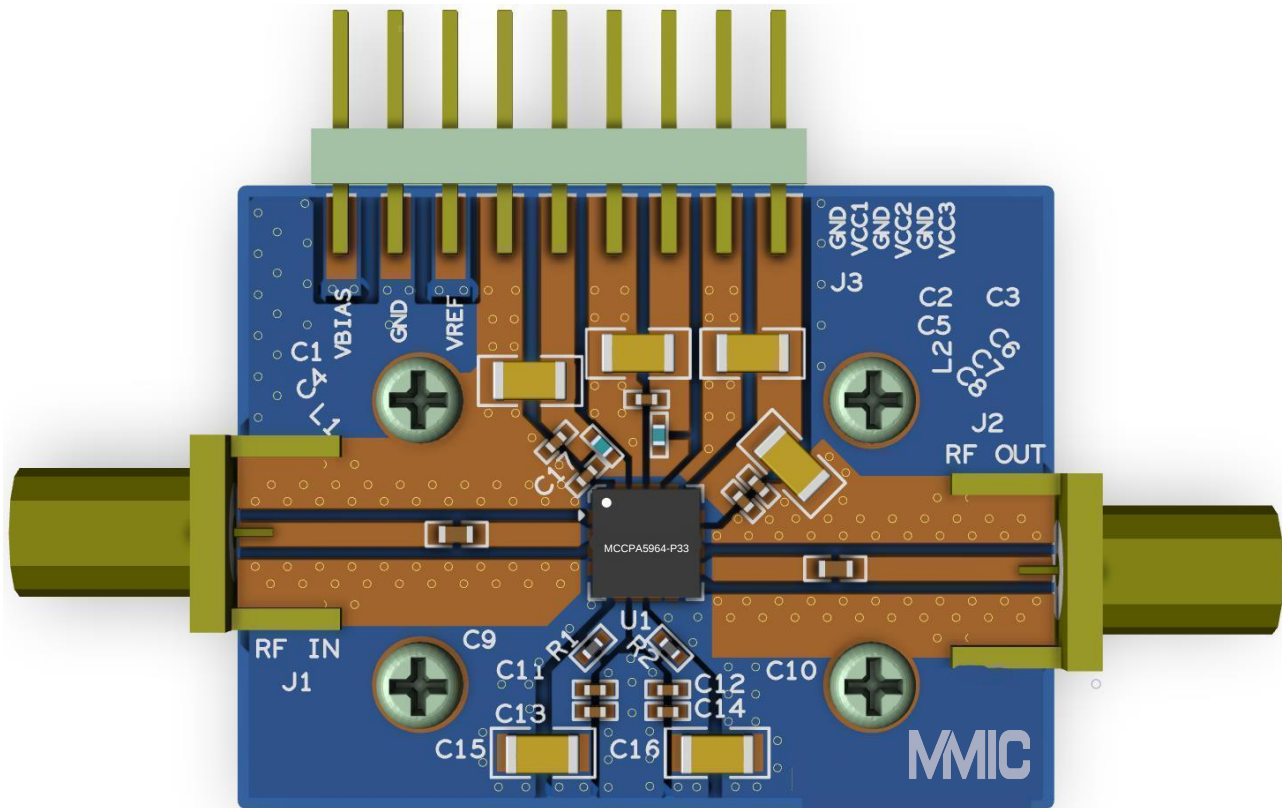


Figure 5 .Evaluation Board PCB information

Evaluation Board Test Procedure

Turn-on sequence

- 1.Connect test equipment to the input and output port of Evaluation board and then connect DC ground.
- 2.Turn on VCC1,VCC2,VCC3 to 5V,turn on VBAIS to 5V then turn on VREF to 2.6V in order.
- 3.Apply RF signal

Turn-on sequence

- 1.Turn off RF signal
- 2.Turn off VREF,VBIAS and VCC1,VCC2,VCC3 in order

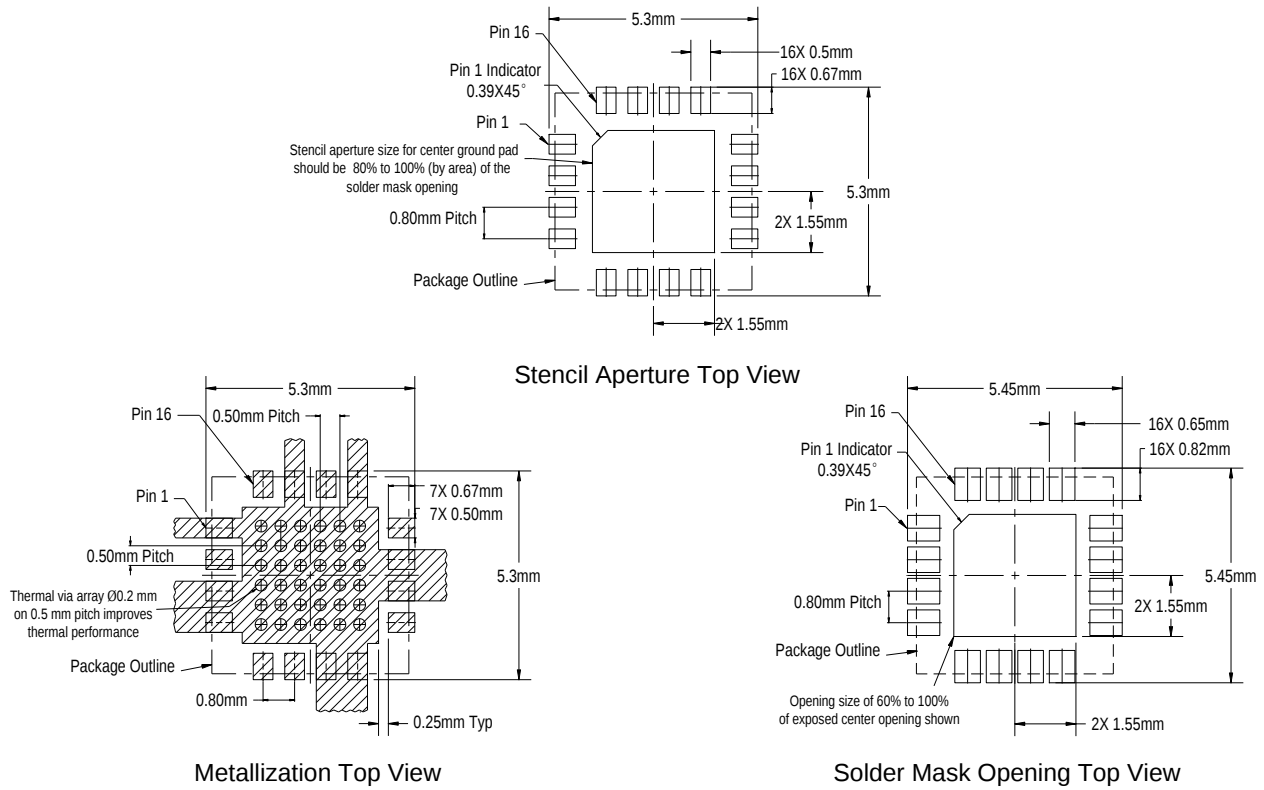


Figure 6. PCB Layout Footprint

Package Dimensions

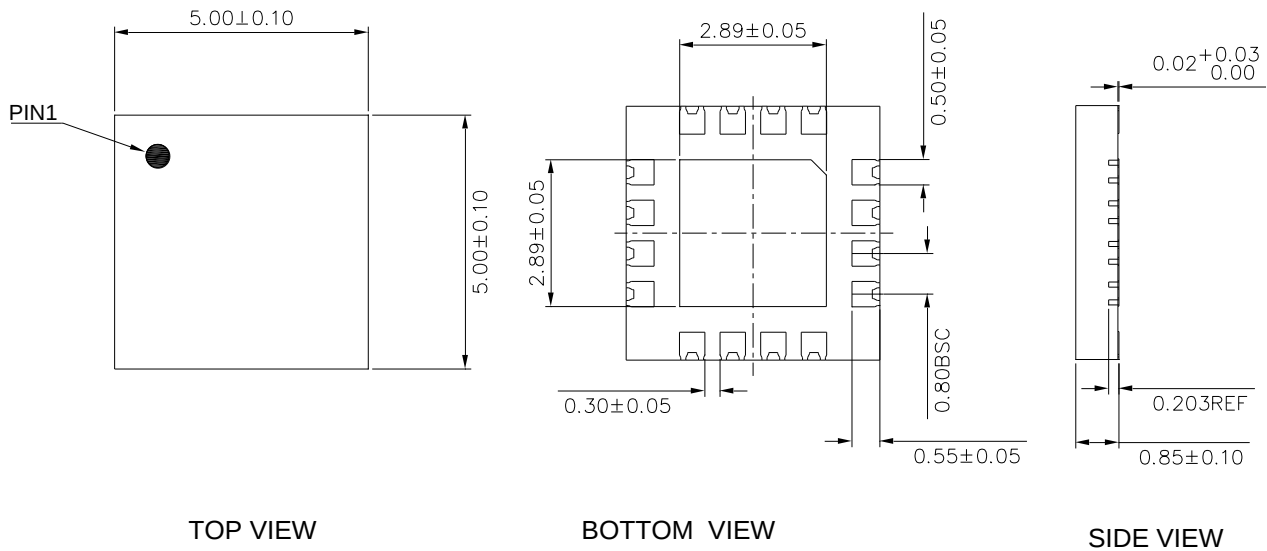


Figure 7 . Package Dimensions

Tape and Reel Information

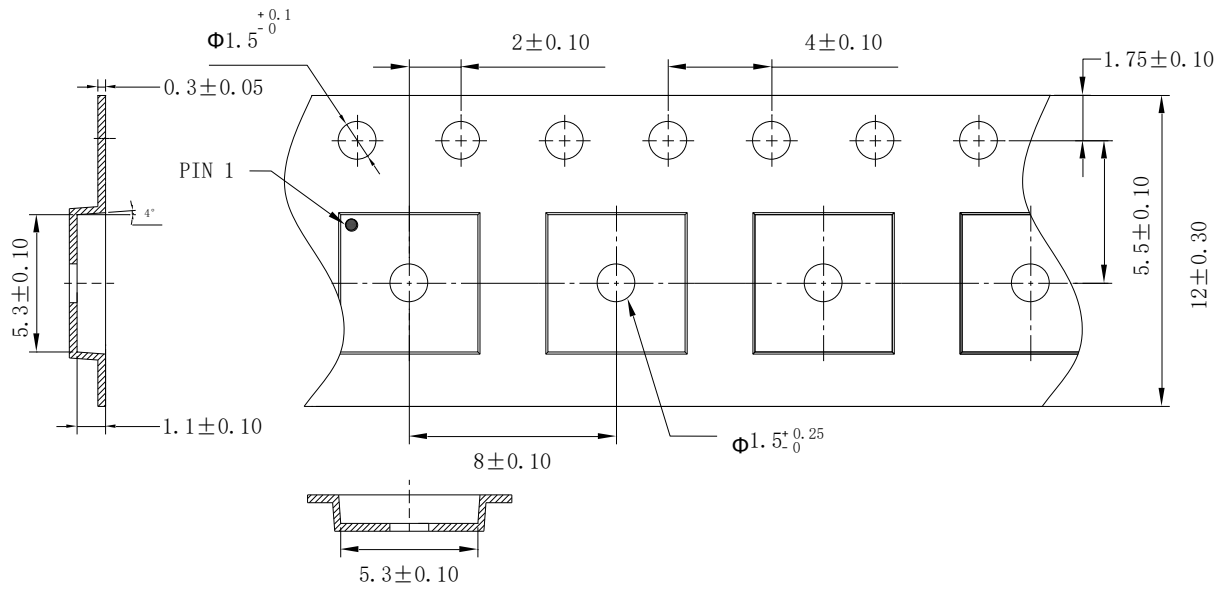


Figure 8.

Technical requirements:

1. The accumulative error of the distance between any 10 transmitting holes is ± 0.1 mm;
2. The lateral bending of the belt along the length direction is ≤ 1 mm/100 mm;
3. Roughness: $R_a < 0.8 \mu\text{m}$;
4. Carrier tape color: Black.