

**ABSOLUTE MAXIMUM RATINGS<sup>1</sup>** ( $T_A = 25^\circ\text{C}$ )

SYMBOLS	PARAMETERS	UNITS	RATINGS
V <sub>CC</sub>	Supply Voltage Pins 5 & 6	V	6.0
V <sub>PS</sub>	Power Save Voltage	V	6.0
P <sub>T</sub>	Total Power Dissipation <sup>2</sup>	mW	200
T <sub>OP</sub>	Operating Temperature	°C	-40 to +85
T <sub>STG</sub>	Storage Temperature	°C	-55 to +150
P <sub>IN</sub>	Input Power	dBm	+10

Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.
2. Mounted on a 50 x 50 x 1.6 mm epoxy glass PWB ( $T_A = +85^\circ\text{C}$ ).

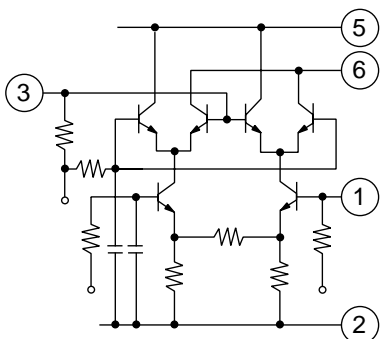
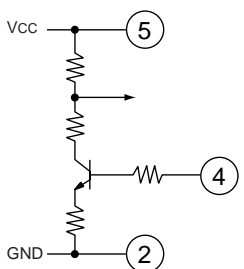
**RECOMMENDED OPERATING CONDITIONS**

SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
V <sub>CC</sub>	Supply Voltage <sup>1</sup>	V	2.7	3.0	5.5
T <sub>OP</sub>	Operating Temperature	°C	-40	+25	+85
P <sub>LO</sub>	LO Input Level <sup>2</sup>	dBm	-10	-5	0
f <sub>RFout</sub>	RF Output Frequency <sup>3</sup>	GHz	0.4		2.5
f <sub>IFin</sub>	IF Input Frequency	MHz	100		400

Notes:

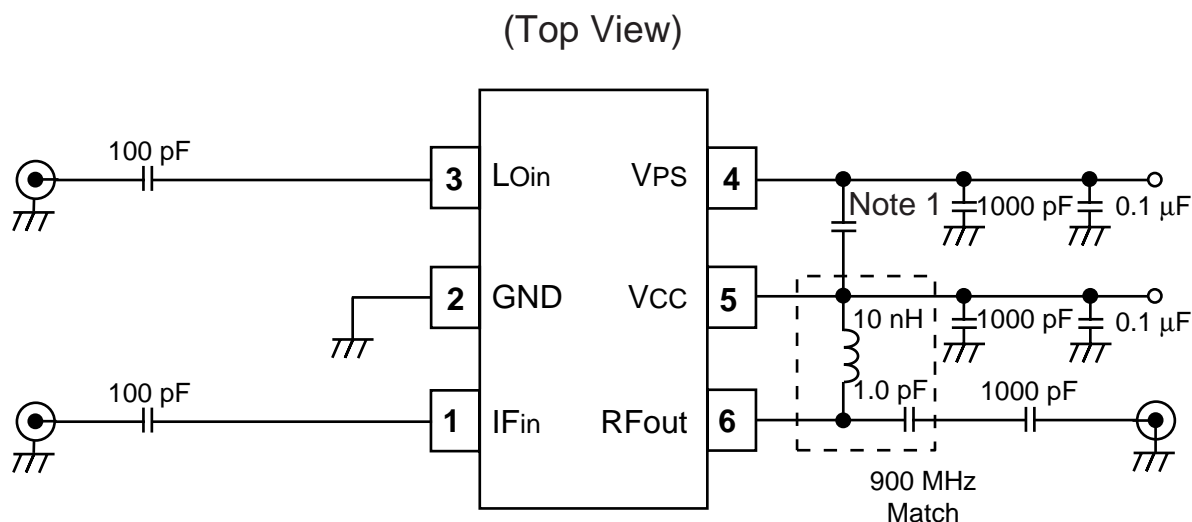
1. The same voltage should be supplied to pin 5 and 6.
2.  $Z_s = 50\ \Omega$  (without matching).
3. With external matching circuit.

**PIN FUNCTIONS**

Pin No.	Symbol	Supply Voltage (V)	Pin <sup>1</sup> Voltage (V)	Description	Equivalent Circuit						
1	IF Input	—	1.3	This pin is the IF input to the double balanced mixer. The input is a high impedance.							
2	GND	0	—	GND pin. Ground pattern on the board should be as wide as possible. Trace length should be kept as short as possible to minimize ground impedance.							
3	LOIN	—	2.4	LO input pin. Recommended input level is -10 to 0 dBm.							
5	Vcc	2.7 to 5.5	—	Supply voltage pin.							
6	RF Output	2.7 to 3.6	—	This pin is the RF output. This pin is designed as an open collector. Due to the high impedance output, this pin requires an external LC matching circuit.							
4	PS	Vcc/GND	—	Power save control pin. Bias controls operation as follows: <table data-bbox="643 1407 971 1507"><tr><td>Pin Bias</td><td>Control</td></tr><tr><td>Vcc</td><td>ON</td></tr><tr><td>GND</td><td>Power Save</td></tr></table>	Pin Bias	Control	Vcc	ON	GND	Power Save	
Pin Bias	Control										
Vcc	ON										
GND	Power Save										

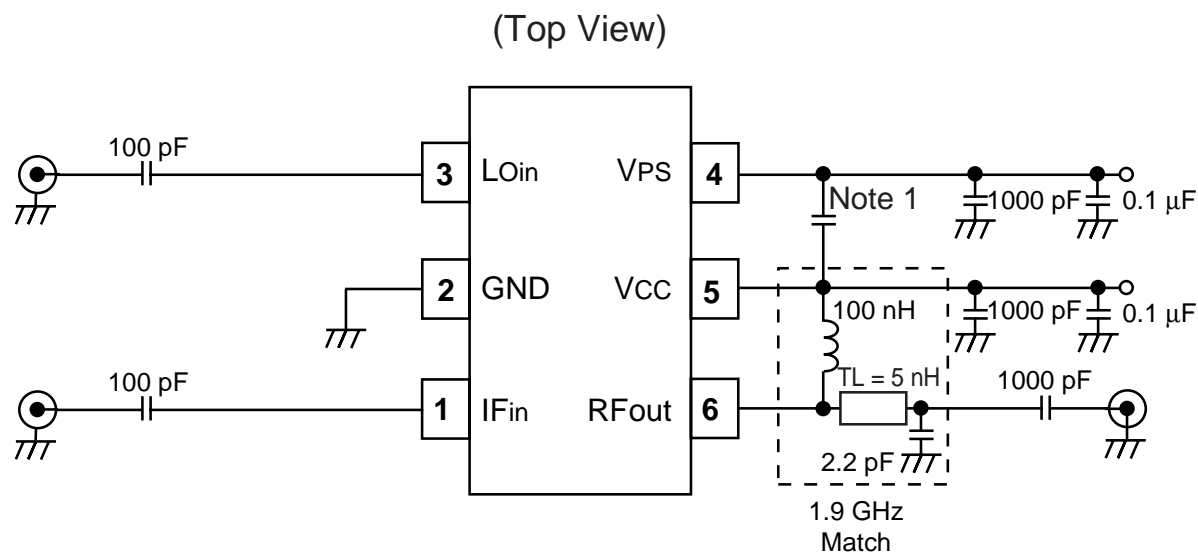
Note:

1. Each pin voltage is measured with  $V_{CC} = V_{PS} = V_{RFout} = 3.0\text{ V}$

**TEST CIRCUIT 1** ( $R_{FOUT} = 900 \text{ MHz}$ )

Note:

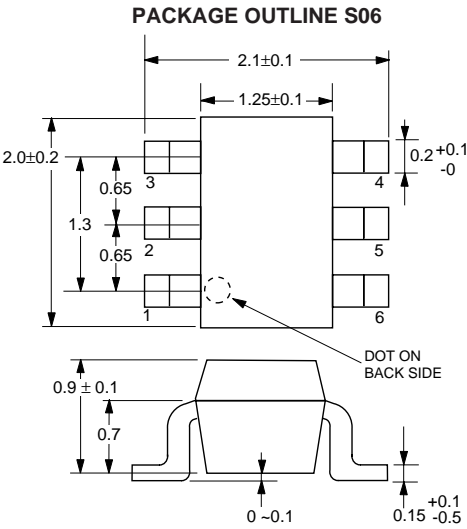
1. In case of unstable operation, connect 100 pF capacitor between pins 4 and 5.

**TEST CIRCUIT 2** ( $R_{FOUT} = 1.9 \text{ GHz}$ )

Note:

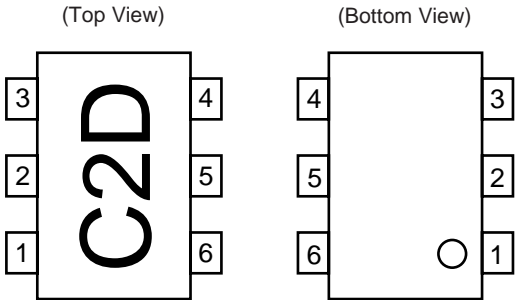
1. In case of unstable operation, connect 100 pF capacitor between pins 4 and 5.

OUTLINE DIMENSIONS (Units in mm)



Note:  
All dimensions are typical unless otherwise specified.

LEAD CONNECTIONS



- 1. IF INPUT
- 2. GND
- 3. LO INPUT
- 4. POWER SAVE
- 5. Vcc
- 6. RF OUTPUT

ORDERING INFORMATION

PART NUMBER	QTY
UPC8106TB-E3	3K/Reel

Note:  
Embossed Tape, 8 mm wide,  
Pins 1, 2, and 3 face tape perforation side.