CREOTECH

DATA SHEET

LXK6623: High Efficiency 5~6GHz 1 W Power Amplifier

Applications

- WiMAX & WiFi
- Private & Mobile Radio
- UNII & ISM

Features

- Frequency band: 5 to 6GHz
- PA output power (P1dB): 27.5 dBm
- Power added efficiency: 33% @ 28dBm
- 50 Ohm input internally matched
- High gain: 22 dB
- Active bias circuit
- Temperature compensation
- Package： MSOP-8

Product Description

The LXK6623 is a high-power, high-gain, high-efficiency power amplifier (PA). The device has been designed for use as the final RF amplifier in WiMAX & WiFi, Private & Mobile Radio and UNII & ISM applications. The device is internally matched to 50 Ohms at the input and the output can be easily matched to obtain optimum power and efficiency characteristics.

The LXK6623 is housed in MSOP-8 package. The compact footprint coupled with high gain and high efficiency makes LXK6623 an ideal choice as a power amplifier for point to point radio communication .

A functional block diagram of LXK6623 is shown in Figure 1. The MSOP-8 package and pinouts are provided in Figure 2. Signal pin assignments and functional pin descriptions are provided in Table 1.

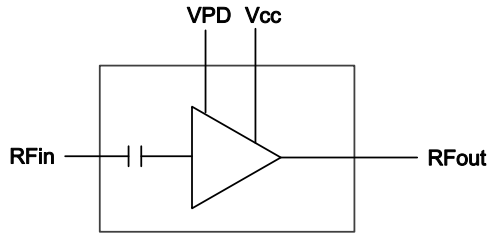


Figure 1. LXK6623 Functional Block Diagram

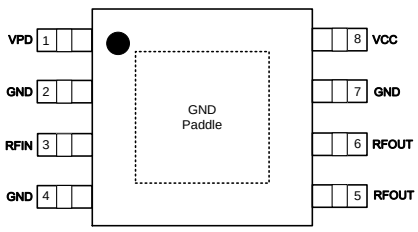


Figure 2. LXK6623 Pinout-MSOP-8

Table 1. LXK6623 Pin Names and Descriptions

Pin	Name	Description
1	VPD	Power supply for bias control circuit
2,4,7	GND	GND
3	RFIN	RF input
5,6	RFOUT	RF output
8	VCC	Power supply

Table 2. Absolute Maximum Ratings

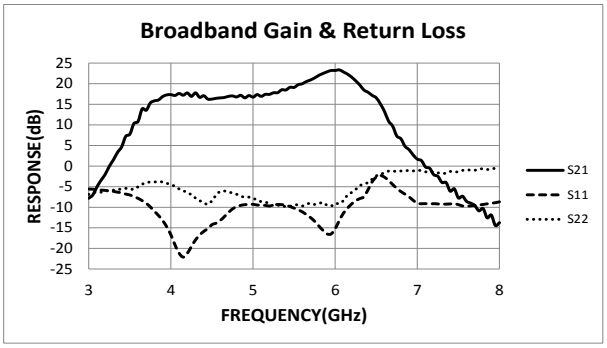
Parameters	Minimum	Maximum	Units
RF input power (CW)		15	dBm
Supply voltage		6	V
Storage temperature	-40	125	^{O}C
Operating temperature	-40	75	^{O}C
Junction temperature		150	^{O}C
ESD (Human Body Model)		1000	V
ESD (Charge Device Model)		1000	V

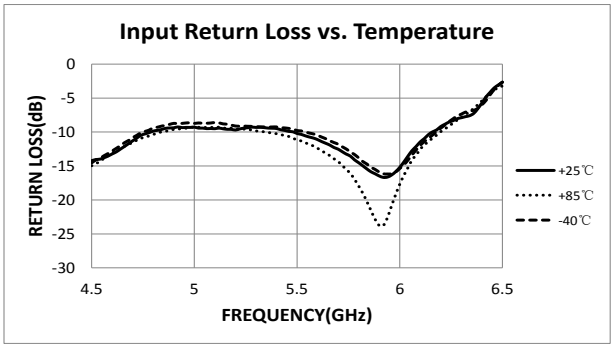
Table 3. Electrical Specifications

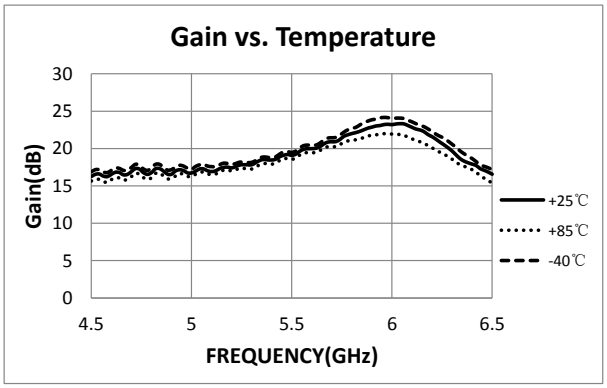
(VCC=5.0V, VPD=5.0V, Ta=+25 ^{o}C, Zs=50Ω, f=5.8GHz, CW)					
Parameters	**Test Condition**	**Minimum**	**Typical**	**Maximum**	**Units**
Frequency		5		6	GHz
Supply voltage		3	5	6	V
P1dB			27.5		dBm
Quiescent current			160		mA
|S11|			10		dB
|S22|			9		dB
|S21|			22		dB
|S12|			39		dB
PAE	Pout=28dBm		33		%

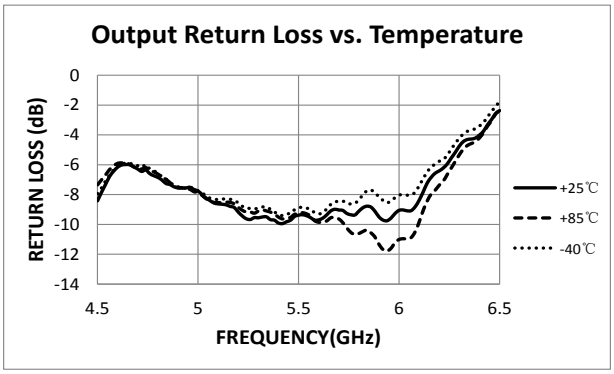
Typical Performance Characteristics

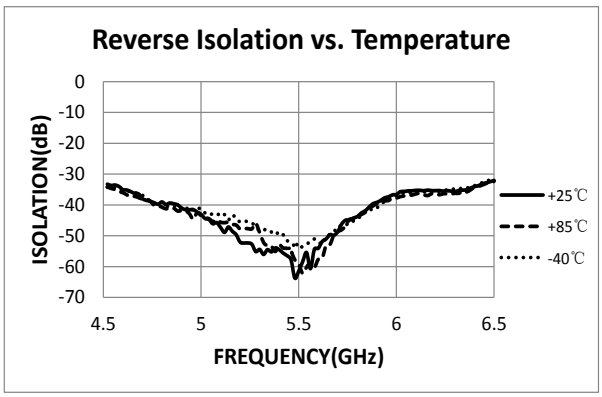
S-parameter（*VCC = 5.0 V, VPD = 5.0 V, T_A= 25°C, 50 ohm system*）





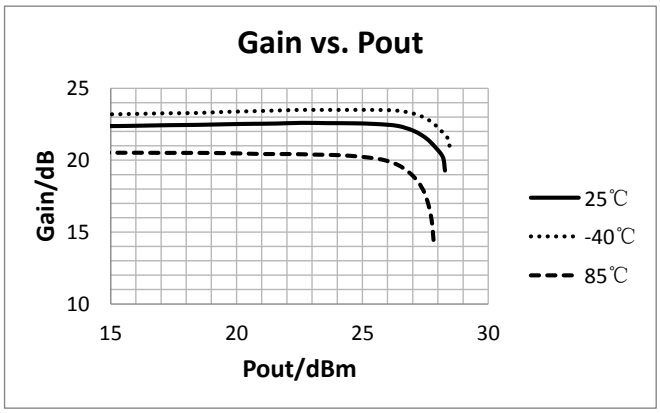




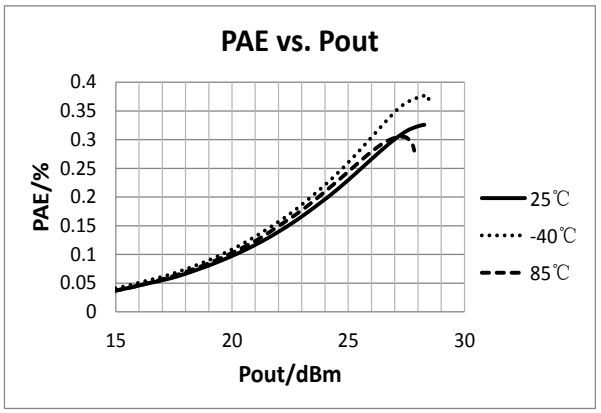


Typical Performance Characteristics

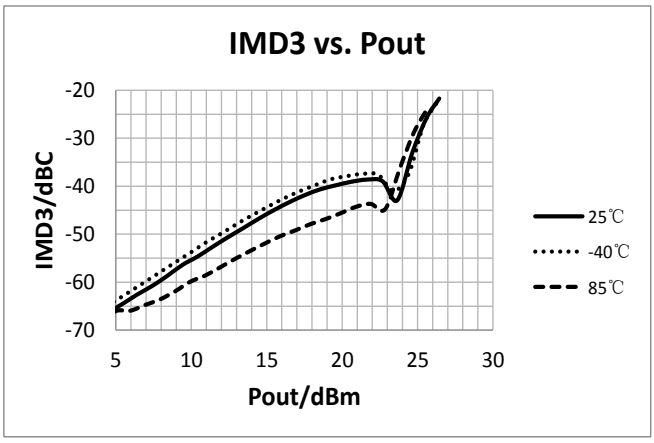
（VCC = 5.0 V, VPD = 5.0 V, T_A= 25°C, 50 ohm system）



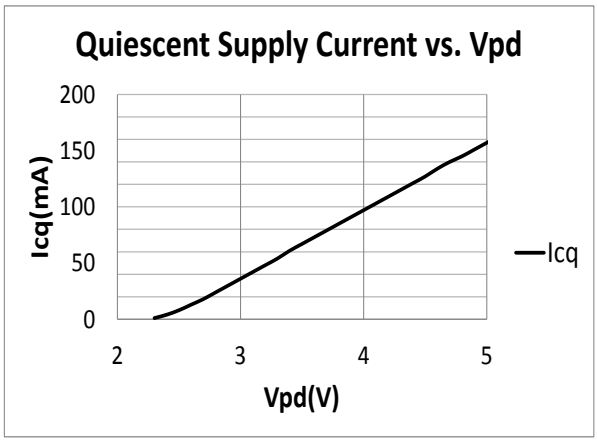
（CW signal）



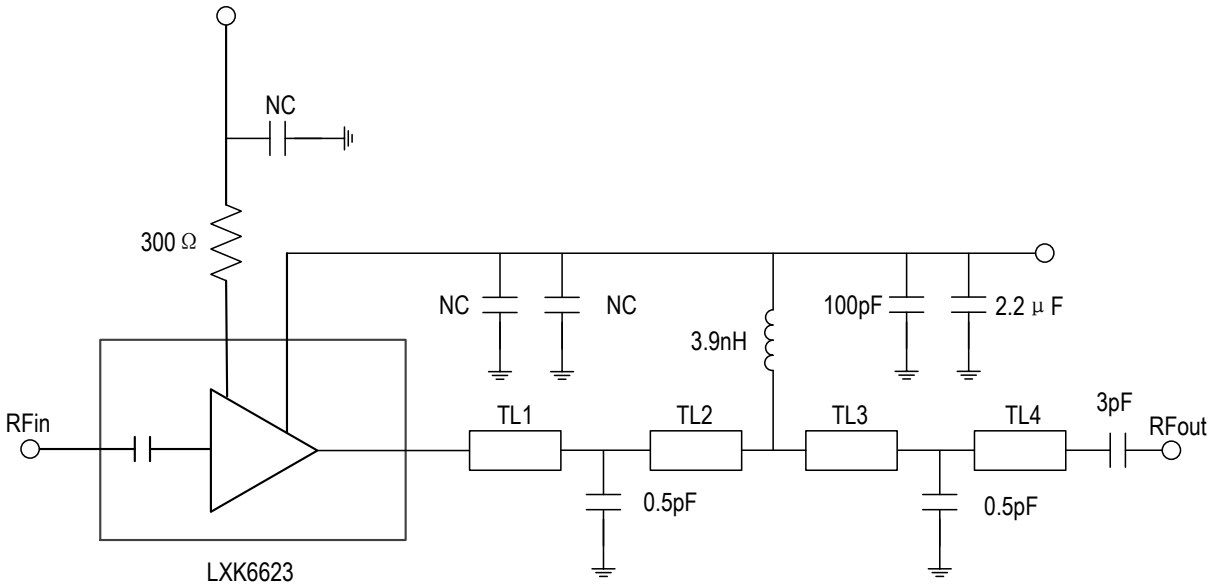
（CW signal）



(Two-tone signal, tone space=1MHz)



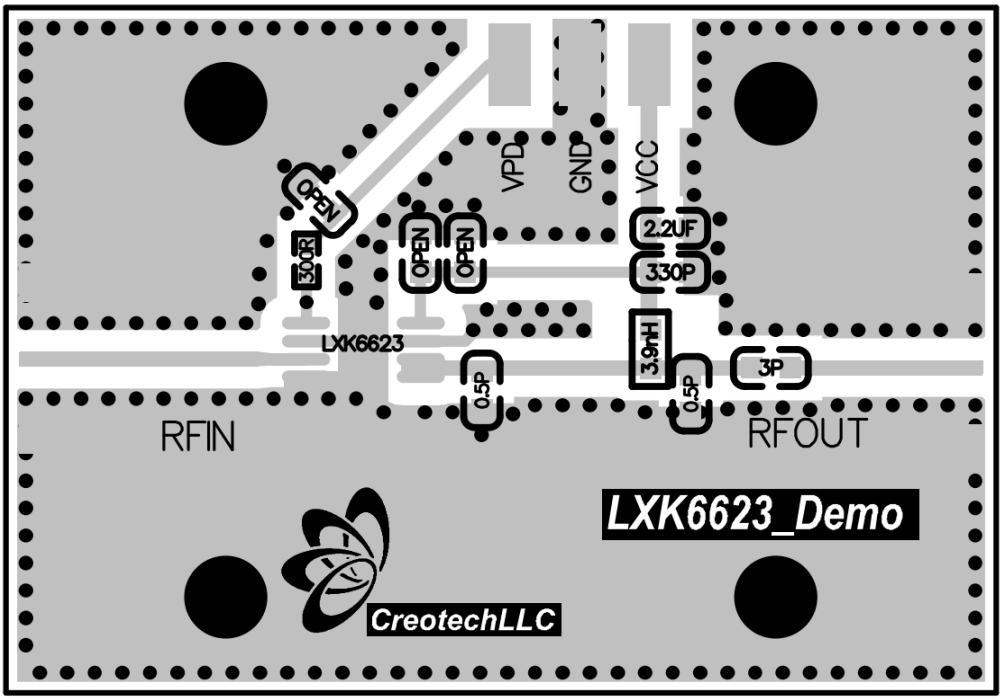
Application Circuit



TL1:Z=50 Ohm， E=15.9 deg， F=5.8GHz
TL2:Z=50 Ohm， E=70.9 deg， F=5.8GHz
TL3:Z=50 Ohm， E=17.2 deg， F=5.8GHz
TL4:Z=50 Ohm， E=25.6 deg， F=5.8GHz

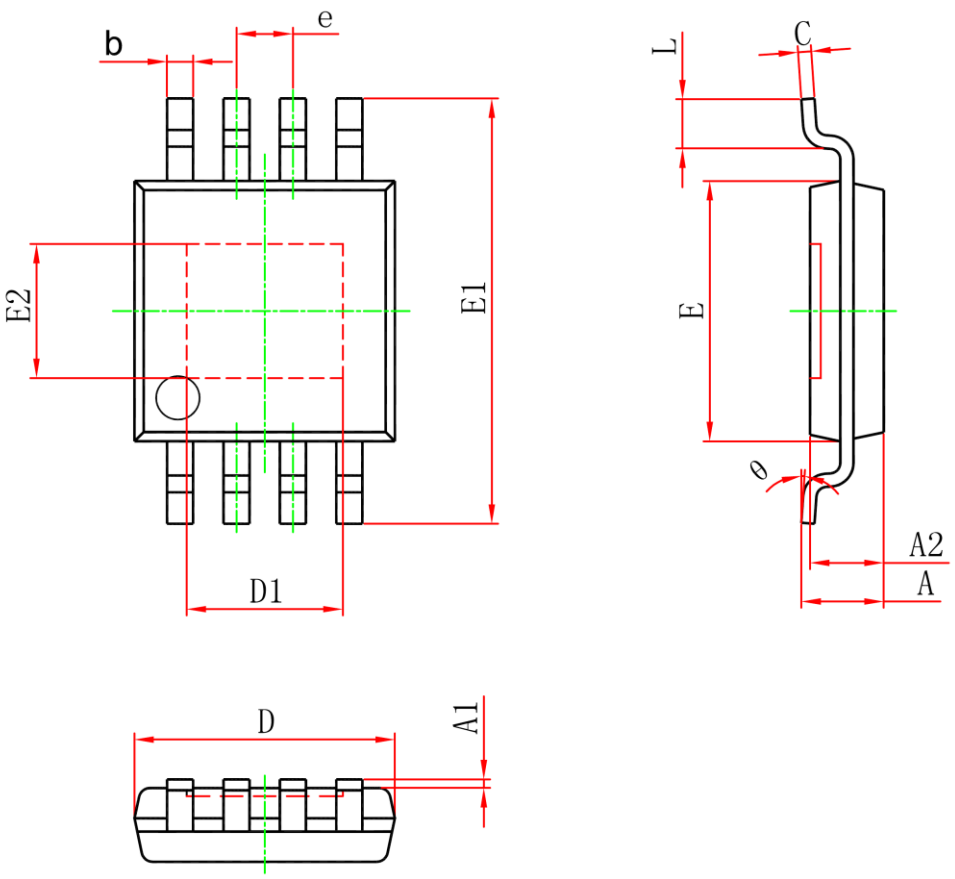
Application Circuit Schematic

Evaluation PCB



Application Circuit PCB Layout

MSOP8/PP PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	0.820	1.100	0.032	0.043
A1	0.020	0.150	0.001	0.006
A2	0.750	0.950	0.030	0.037
b	0.250	0.380	0.010	0.015
c	0.090	0.230	0.004	0.009
D	2.900	3.100	0.114	0.122
D1	1.700	1.900	0.067	0.075
e	0.65 (BSC)		0.026(BSC)	
E	2.900	3.100	0.114	0.122
E1	4.750	5.050	0.187	0.199
E2	1.450	1.650	0.057	0.065
L	0.400	0.800	0.016	0.031
θ	0°	6°	0°	6°

Ordering Information

Part No.	Description
LXK6623	5~6GHz 1W power amplifier
EVB-LXK6623	Evaluation Board

Document Change History

Revision	Date	Notes
1.0	Mar. 17, 2015	Created